

**Harvard Graduate School of Design
Department of Architecture**

Architecture Program Report for 2012 NAAB Visit for Continuing Accreditation

Master of Architecture

Undergraduate degree outside of Architecture + 105 graduate credit hours
Related pre-professional degree + 75 graduate credit hours

Year of the Previous Visit: 2006

Current Term of Accreditation: At the July 2006 meeting of the National Architectural Accrediting Board (NAAB), the board reviewed the *Visiting Team Report* for the Harvard University Department of Architecture. As a result, the professional architecture program:

Master of Architecture

was formally granted a six-year term of accreditation. The accreditation term is effective January 1, 2006. The program is scheduled for its next accreditation visit in 2012.

Submitted to: The National Architectural Accrediting Board
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1.1.1. History and Mission

History of Architectural Education at Harvard

For seventy-five years, the Graduate School of Design has both pioneered and exemplified excellence in the practice of design, education for the design professions, and design-related scholarship. As a professional school with established programs in architecture, landscape architecture, urban planning, and urban design, the GSD trained many of the twentieth century's foremost practitioners and scholars. Building on its history at the fore of the design professions and its position in a premiere academic institution with international reach, the Graduate School of Design remains committed to educating its graduates to assume leadership roles in a rapidly changing twenty-first century world. As the largest department within the GSD, the Department of Architecture shares (and puts into action) the School's overarching mission: *Design Leadership through Societal Engagement*.

Architectural history and design have been taught at Harvard University for more than a century, and programs at Harvard leading to the professional degree in architecture have received accreditation since the beginning of this process in 1940. In academic year 1971-72, the graduate Bachelor of Science degree in architecture was changed to the degree Master in Architecture, reflecting the general trend for graduate education to award the master's degree. Since then, the program has been organized into seven semesters of study, with a five-semester plan for students awarded advanced standing. The curriculum is centered on a series of design studios of increasing complexity, culminating in the completion of an independent master's thesis project. Courses in history and theory, visual and socioeconomic studies, science and technology, and professional practice provide students with a comprehensive, broad base of knowledge of the architectural profession.

Beginnings of Architectural Study at Harvard

Charles Eliot Norton of Harvard University's Department of Fine Arts first brought architectural history into the Harvard curriculum in 1874, and Herbert Langford Warren first taught classes devoted exclusively to architecture in 1893. Warren's richly eclectic architectural education – he had studied at Owens College in his native England, in Germany, and at MIT – combined with his professional training in the office of H.H. Richardson, had made him sensitive to the need to develop a multi-faceted program at Harvard. As outlined in the *Register*, the four-year program was posited on the continuing study of architectural history, the application of historical precedents to “modern work,” the analysis of mechanics, materials and construction techniques, complementary courses in both mathematics and drawing, and the completion of a fourth-year thesis. Richard Morris Hunt Hall – named in tribute to the first American to attend the École des Beaux-Arts – opened in 1895 and served as the shared site for architecture and other fine arts at Harvard. The building served as the original Harvard University Fogg Museum of Art and housed a collection of plaster casts of classical sculpture and architectural components that “illustrated” the curriculum offerings. The familiarity with “classic form” demanded of students in architecture was explicated by readings, lectures, study photographs, and the study of sculptural casts. Robinson Hall, designed by Charles McKim and completed in 1902, was the first Harvard building dedicated exclusively to the study of architecture. Its Great Hall was designed to showcase the exhibition of both original fragments and casts; other vital elements included drafting rooms, drawing studios, and a library of books and study photographs supplemented by a “materials library” of samples. Forty students were enrolled in the program in 1902. Within a decade, the teaching faculty had expanded to include Eugene Duquesne, Robert Swain Peabody, Cass Gilbert, Henry Atherton Frost, and Charles Wilson Killam. In subsequent years Harvard established the nation's first academic degree programs in landscape architecture, city and regional planning, and urban design.

The Faculty of Architecture was established as a graduate school in 1914. Warren, who had served as chairman of the architecture program since 1902, was named the first dean. Through the first two decades of the twentieth century, instruction in architecture remained greatly influenced by the École des Beaux-Arts in Paris. The School of Architecture was focused on the training of professionals at a

graduate level, within the context of the shifting collaboration with the School of Landscape Architecture and the program in City Planning. In the early 1930s, art historian George Harold Edgell, who had served as Dean of the Faculty of Architecture and Landscape Architecture since 1922, addressed the shift in curriculum focus from history to design by appointing French artist and architect Jean-Jacques Haffner as the principal instructor in advanced design, thus significantly strengthening studio teaching. It was also during Edgell's administration that the idea took hold that city planning, architecture, and landscape architecture should all be united under one roof.

A Unified School

The Graduate School of Design (GSD) was officially established in 1936, in recognition of the shared interests and collaborative relationship among the design professions, defined from the outset to include urban planning. An integrated faculty helped develop comprehensive programs while drawing on the great intellectual resources of other Harvard University faculties, research groups, and libraries. Joseph Hudnut, the GSD's first dean, initiated a dramatic shift in the direction of architectural education at Harvard. Hudnut had long been interested in the emerging modernism in architecture and town planning, and had begun to transform architectural education at Columbia University before moving to Harvard. In 1937, he invited Walter Gropius to Harvard as professor and Chairman of the Department of Architecture. Together, Gropius and Hudnut were to be instrumental in shifting architectural education in the United States from a model based on classical precedent to one based on a modern conception of architecture and of the role of the architect. Gropius' essay "Architecture at Harvard University," published in *Architectural Record* in 1937, gave some indication of his ambitions for the program in architecture. Under Gropius' direction, the program aspired to produce generations of creative practitioners, inspired by a modern aesthetic, who developed their understanding of the world from contemporary circumstances and could measure the social and technical implications of their work. Teams of faculty and students developed large projects, drawing on the skills of all the design professions, including landscape and city planning. The innovative master's studio was revamped by Gropius and swiftly became both popular and influential. Marcel Breuer joined the faculty in 1938, and visiting lecturers in this period included Josef Albers, Gunnar Asplund, and Alvar Aalto. The department also initiated a program of innovative exhibitions focused on contemporary design. In 1941, Dean Hudnut introduced a new Department of Architectural Sciences within Harvard College, supplementing the traditional liberal arts undergraduate curriculum in architecture with new studio courses in theory, practice, and design; until its dissolution in 1968, an average of eighty Harvard College students were enrolled annually.

The war years were characterized by significantly decreased enrollment at the GSD (although women were permitted to enroll for the first time in 1942) and the development of a truncated "wartime" curriculum in the various programs. After the war, in the fall of 1945, the GSD Department of Architecture renewed its curriculum, based on a core of integrated courses in Design, Planning, Construction and Architecture.

In 1953, Josep Lluís Sert was appointed dean of the GSD. Sert, who served simultaneously as Chairman of the Department of Architecture, advanced professional architecture education at the GSD, doubled the number of students and faculty, and expanded course offerings in the technical, behavioral, and social sciences. Sert was instrumental in developing an integrated approach to planning and design of the urban environment, and the school placed new emphasis on the subject of urban design. A degree program in urban design – again, the first in the United States – was established in 1960 to enable greater collaboration among the school's design and planning disciplines. The Joint Center for Urban Studies (now called the Joint Center for Housing Studies) was also created in 1959 to support research in the field and to address the troubling issues facing cities at the time.

Growth and Change

The next major turning point for the GSD came in the 1960s, when a plan gained momentum to move the school into a new building of its own. A new site became available at the corner of Cambridge and

Quincy streets, and the Australian architect John Andrews was chosen to design what would become the 170,000-square-foot Gund Hall, completed in 1972. The most distinctive features of the new building were its tiered student “trays,” stepping down four stories in a continuous glazed hall and emphasizing the studio environment as the core of its design pedagogy. Presiding over the GSD at the opening of Gund Hall was Maurice D. Kilbridge, formerly a professor at the Harvard Business School, who had succeeded Sert as dean in 1969. Over the following decade, the school again doubled its enrollment and extended the scope and depth of its programs.

In 1980, Gerald McCue, then Chairman of the Department of Architecture, was appointed dean, and Harry Cobb assumed Architecture’s chairmanship. Under their leadership, the school began a critical reexamination of the field of design, seeking to exploit more fully the school’s position in the exceptional environment of Harvard. McCue expanded the research base of the school by creating new advanced degree programs. The Master in Design Studies (MDesS) and the Doctor of Design (DDes) programs were established in 1986. Research was also supported through the university’s PhD programs in architecture, landscape architecture, and urban planning. McCue also led efforts to bolster endowment support for professorships and to secure gifts for educational resources, such as library collections and computer-based instruction materials. Cobb, meanwhile, established a new core curriculum centered on studio work and attracted to the faculty a group of exceptional, often controversial practitioners. In 1985, Rafael Moneo succeeded Cobb as Chair of the Department of Architecture; Moneo’s tenure brought to the architecture curriculum both intensified focus on contemporary architectural theory and a large number of visiting professors and lecturers from Europe and around the world. Mack Scogin succeeded Moneo as chair in the fall of 1990, serving in that position until 1995.

From 1992 to 2004, Peter G. Rowe, Raymond Garbe Professor of Architecture and Urban Design, served as the fifth dean of the GSD. While extending the initiatives of his immediate predecessors, Rowe focused on expanding the School’s international dimension and the development of continuing professional and executive education. In his 1993 academic plan for the GSD, he reaffirmed the present configuration of the school, its degree nomenclature, and degree programs housed within the three departments of Architecture, Landscape Architecture, and Urban Planning and Design, as well as the formalization of the Advanced Studies Program housing the PhD, DDes, and MDesS programs initiated under McCue. He also worked to increase the number of senior faculty; to develop new programs in urban planning, real estate, and environmental protection; to expand the School’s information technology capacities; to renovate the Frances Loeb Library; and to enhance the classroom and shop facilities. During this period as well, the *Harvard Design Magazine* became an important forum for leading educators and practitioners to debate current issues in design and the environment. Rowe appointed two new Chairs to the Department of Architecture during his term: Jorge Silvetti (1995-2002) and Toshiko Mori (2002-2009). The latter appointment set an important precedent for diversity within the GSD, in that Mori was both the first female and the first Asian-American to lead one of the School’s three Departments.

In 2005, Alan Altshuler, Ruth and Frank Stanton Professor in Urban Policy and Planning, was appointed the sixth dean of the Faculty of Design, setting as his priorities 1) adaptation to new technologies in design practice; 2) nurturing urban planning as a context-shaping discipline informing other design practices; and 3) integrating themes of sustainability, equity, and energy efficiency into all aspects of design education. Under his leadership, financial aid was greatly expanded so that the opportunity for a GSD education would be fully open to all students of talent. The most recent NAAB accreditation review took place in 2006, shortly after Altshuler had begun his three-and-a-half-year deanship. At the time of the 2006 review, Toshiko Mori was Chair of the Department of Architecture, and Preston Scott Cohen, Director for the Master in Architecture programs.

Recommitment to Institutional Mission

Mohsen Mostafavi, Alexander and Victoria Wiley Professor of Design, was appointed the seventh dean of the Faculty of Design in 2008. In three years’ time, Mostafavi’s leadership has reinvigorated the GSD’s intellectual climate and research capabilities; expanded its physical, financial, computer, and human

resources; and strengthened its external relations. Among Dean Mostafavi's most important objectives has been to build the School's outreach, beginning with strengthening the School's ties to Harvard University, ending a period of perceived isolation between the GSD and its parent institution. Mostafavi has been an outspoken advocate for the role of design professionals in all aspects of public life and has launched a number of initiatives, including, but not limited to, the 2009 Ecological Urbanism conference and exhibition; placing GSD faculty on university-wide advisory committees such as long-range planning for campus expansion, public space and facilities planning; overseeing the development of new cross-disciplinary concentrations within the Advanced Study Programs that bring faculty and experts to the GSD from across Harvard and other universities; and sponsoring students in their own initiatives to bring design awareness and service to underserved communities. Simultaneously Mostafavi has sought to strengthen both faculty and students' focus on design-related research; the production of new knowledge and new modes of understanding must be a critical activity within graduate design programs (details of the GSD's new research programs and initiatives are listed in this report under 1.2.1 "Human Resource and Human Resource Development"). Efforts to strengthen the School's future began with the appointment of a Five-Year Planning committee composed of senior faculty and administrators, whose findings – covering academic, financial, and space planning – were announced in the spring of 2011 (details on long-range planning for the GSD and its M.Arch degree program are provided in this report under 1.1.4 "Long-Range Planning").

Though he oversees degree programs in four major design disciplines at the GSD, Dean Mostafavi's own education is that of an architect-scholar, and his considerable contributions to steering the Master in Architecture program have been precisely aimed. He is strongly committed to the role of imagination and creativity as indispensable components of architecture, as well as materiality in buildings as the aspect that most tangibly links experience, aesthetics, and ethics. As one of his first acts as Dean, Mostafavi appointed Preston Scott Cohen as the new Chair of the Department of Architecture, signaling his commitment to architecture as an intellectual discipline that makes important contributions to society. Since his 2008 appointment, Cohen has led the Department of Architecture in an introspective review of the Master in Architecture curriculum, informed by a broad consultation process with faculty, students, and alumni. In response to the 2006 NAAB visiting team report, changes embodied in the 2009 Conditions of Accreditation, and a range of inputs from students, faculty, and alumni, the review has led to a series of curricular reforms and revisions that have since been implemented by the Department. These changes have included a restructuring of core architecture studios to update thematic issues and clarify pedagogical objectives; revisions to the architecture thesis program aimed at linking student research to broader research activities going on at the School; an intensification of courses related to visual studies, particularly digital media; a reorganization of core history-theory courses from individual half-semester modules into a coordinated three-semester sequence; and modifications to the sequence of required technology courses to emphasize analysis of energy and sustainability issues as fundamental to architectural design today. A more detailed analysis of curricular developments in the M.Arch program is provided in later sections of this report (in Part Two: "Educational Outcomes and Curriculum").

Master in Architecture Program: Mission Statement and Objectives

The GSD's Master in Architecture program prepares graduates for professional practice in the field of architecture by immersing them in critical discussions about the role of architecture in contemporary society, while methodically guiding the development of skills in design, visual representation, building science and technique, and professional reasoning and judgment. The core mission of the Master in Architecture degree program echoes the overarching mission of the GSD itself: *Design Leadership through Societal Engagement*. To this end, intellect and imagination are brought to bear on the issues and opportunities affecting the physical environment. The studio method of teaching remains at the core of the Master in Architecture degree program's pedagogy, with a dual emphasis on understanding conceptual principles and developing operational skills. Through structured project assignments, students develop their creative potential and sharpen their analytic and critical skills. The primary objective of the program is to assist students in developing a high level of excellence in architectural design.

The Department of Architecture is rich in diversity, creativity, and scholarship. An internationally recognized faculty, representing a broad spectrum of architectural practice and research, exposes students to many different design approaches while introducing them to issues and trends in contemporary architectural design. Central to the Department's philosophy is a commitment to design excellence that demands not only the skillful manipulation of form but also inspiration from a broad body of knowledge. Instruction and research encompass design theory as well as visual studies, history, technology, and professional practice.

The Department of Architecture benefits from the GSD's information infrastructure as a foundation for design exploration and communication, offering students new ways to access design references, model buildings, and present ideas. Intelligence, creativity, sensitivity, and a thorough knowledge of the arts and sciences are essential to achieving distinguished architecture. Architects draw upon knowledge and experience gained from the past while adapting to the changing needs of the modern world. As new ways of thinking have emerged in the profession, the demands on design grow increasingly complex and require new interpretation.

The Master in Architecture program has established the following objectives for educating architects for the challenges of the twenty-first century: 1) promoting a continuous dialogue between faculty specializing in design, technology, history, and theory, aimed at building collective knowledge; 2) exploring and revising methodologies in architectural education that integrate building program, design, structure, material, and performance; 3) informing the discursive process of design and fabrication with a thorough knowledge of material properties, of engineering possibilities, and of the long-term impacts buildings and other built artifacts may have on our environment; 4) consciously promoting appreciation for the arts, particularly contemporary arts where the languages of artists and architects may intersect; and 5) enriching and broadening our common understanding of global culture. To achieve these goals – and through them, the holistic development of future leaders in the architectural profession – the curricular offerings of the Department of Architecture are supplemented and extended by offerings of other departments and the broader University, as well as by numerous extracurricular activities, internships, fellowships, and other opportunities for student engagement (detailed in sections 1.2.1 “Human Resource and Human Resource Development” and Part Two: “Educational Outcomes and Curriculum”).

For generations, the GSD has educated committed individuals who have assumed leadership roles in shaping the built environment. Today's graduates in Architecture continue this tradition by answering the challenges posed by contemporary society.

1.1.2. Learning Culture and Social Equity

Learning Culture

The general mission of the GSD is to promote the development of design excellence through teaching, learning, and research. Successful pursuit of this mission is predicated on the considerate behavior and integrity of all members in the academic community. Together, Harvard University, the GSD, and the Department of Architecture have developed (and continue to develop) extensive policies regarding standards of instruction, academic integrity, personal conduct, methods of receiving and responding to student evaluations, nondiscrimination, assistance for individuals with disabilities, counseling and assistance for students experiencing difficulties of any kind, and so on. The most important of these policies affecting the creation of a positive learning culture are outlined below; additional policies may be found in the *Guide to Gund*, the handbook provided to students, faculty, and staff of the GSD annually.

Studio Culture Policy

The studio method of teaching remains at the core of the Master in Architecture degree program's pedagogy, with its dual emphasis on understanding conceptual principles and developing operational skills. Studios at the GSD are typically composed of up to twelve students under the direction of a design

instructor (professor, critic), who alternates studio sessions between 1) meeting individually with each student at his or her desk to discuss a project's development, and 2) holding group reviews and discussions, frequently with the input of another faculty member, critic, or consultant such as an engineer. Through structured project assignments, students develop their creative potential and sharpen their analytic and critical skills. The primary objective of the program is to assist students in developing a high level of excellence in architectural design.

The GSD's Dean, Department Chairs, and administration have developed written procedures and policies for core and option studios that are sent to all instructors before the semester begins. The intent of these procedures and policies is to provide clear guidelines and instruction to faculty and students, in keeping with our belief that studio instruction thrives only when an atmosphere of mutual respect is established, allowing a free exchange of ideas among all participants. Faculty and administration have worked closely with the Student Forum in developing these school-wide guidelines, as well as in the effort to supplement studio instruction with additional learning opportunities related to studio instruction.

Core Studios

The Chair of the Architecture Department has always been deeply involved with core studio planning; the current Chair, Scott Cohen, has personally coordinated the first-semester core studio since 1996. The Chair appoints all core studio coordinators, meets with them regularly to discuss the studio pedagogy, and attends nearly all their reviews. Prior to the beginning of term, core studio coordinators post online the studio syllabus, including a detailed studio schedule (with field trips and review dates fixed); software requirements (technologies used and taught); anticipated deliverables; and approximate material cost. Prior to each semester, the Program Director works with core studio coordinators and instructors for required non-studio courses to plan the semester schedule – with an eye to avoiding conflicting course and studio deadlines and aiding students with their time management. The Department of Architecture schedules optional, non-credit “how to” workshops for software used in the studio (such as Rhino and CATIA) during evening hours throughout each semester.

Portfolio Reviews

In a new initiative launched jointly in 2011 by the Departments of Architecture and Landscape Architecture, each January, between fall and spring term, third-semester M.Arch I students may sign up for a private discussion with a pair of faculty members to review a hard-copy portfolio that the student has prepared of his/her work while at the GSD. We feel it is important that students know how to present their work and speak about it. Portfolio reviews help students to think about what they have accomplished during their time at the GSD, to reflect on consistent threads in their work, and to consider what they should accomplish in their remaining semesters. Feedback from students who participated in portfolio reviews last January has been quite positive, and the Department may consider expanding (or even making mandatory) these interviews in the future.

Option Studios

Much of the vibrancy that characterizes the GSD Department of Architecture's studio culture is based on the significant number of option studios (offered to third-year students in the M.Arch I program) taught by visiting faculty with international reputations for design excellence. These visitors bring exciting new ideas and sensibilities to the discussion of architecture within the School, and their presence helps the GSD to attract top students to our programs. Yet the number of visiting faculty has also led to some inconsistency in the educational experience of students in past years, with misunderstandings leading to failed expectations and disappointment on the part of students and instructors. As a result, the Department of Architecture, together with the School's other departments and the Student Forum, has drafted and continuously updated clear guidelines for option studio instructors, while providing students at the beginning of each term with complete and accurate information to better aid them in choosing the

most appropriate studio. Having more accurate information online prior to the start of term also allows students to select other courses that might dovetail with the studio schedule and content. Option studio instructors must provide a course description and a syllabus, and the studio must adhere to scheduling guidelines.

An option studio instructor is responsible for eight instruction hours a week for the length of the semester (approx. 13 weeks). Option Studios are typically scheduled two weekdays from 2-6pm. Instructors who are not based in the Boston area generally offer their studios on consecutive days, while local instructors typically schedule non-consecutive days. Option studios should not be scheduled on Mondays in order to keep one afternoon free for electives. The class structure, including schedule, dates when the instructor will be in residence, and studio site visits, must be set and approved by the chair prior to the beginning of the semester. A visiting instructor who is traveling from out of town may prearrange with the department and chair to teach alternate weeks. In that case, the instructor should choose two afternoons during the week that are the official class times, and schedule the remainder of the time during the week at times that work for student schedules. This allows the students the flexibility to schedule their other courses. The dates when the instructor will be in residence should be approved by the chair and posted online prior to the start of the term so the students are fully aware of the schedule for the studio. Prior to the Option Studio Lottery, information is provided on the GSD website for each studio regarding studio site or trip location; studio trip date; and estimated cost to student for site visit (not to exceed \$300 plus meals and incidentals). An effort has been made to smooth the studio costs across studios so that costs are not prohibitive for any given studio.

Studio Reviews

To assist in organizing their midterm and final reviews, the Department of Architecture provides core and option studio instructors the following guidelines:

- Invited jurors must reflect a diversity of backgrounds (women, people of color) with expertise relevant to the studio subject matter;
- Instructors must communicate with jurors in advance of their visit, thanking them for their participation and describing adequately the studio problem, the day's schedule, and the instructor's expectations;
- All students are entitled to the same quality and quantity of jury comments; if a juror cannot stay until the end of a review, another juror should be arranged to take his or her place;
- Reviews must start and end reasonably close to the times announced in advance (the responsibility of both instructor and students);
- Students must attend the full review.

Mid-Term Warning Letters

All studio and course instructors are sent guidelines from the Department regarding mid-term feedback to students. Additionally, the Department staff reminds instructors to correspond with students close to mid-semester. Each instructor of record for a course should send midterm warning letters to those students who are experiencing academic difficulty. The purpose of these letters is to inform such students that if their academic performance does not improve, they may receive a grade of Low Pass or Fail. If, later, a student appeals for review of a low grade, a midterm warning letter is evidence of communication between the instructor and the student. Midterm warning letters should be sent no later than eight weeks into the term. A copy of the letter must be forwarded to the Registrar in the office of Student Services and to the Departmental Program Coordinator for inclusion in the student's file and to the student's Faculty Advisor. Copies of sample warning letters are available from the Program Coordinator.

Studio and Course Evaluations

Architecture Department staff members distribute studio and course evaluations, later collecting and compiling the information. The data and comments are distributed to both the Chair and the studio or course instructors. The Chair uses the material in planning future studios, courses, and in determining future teaching assignments. In Academic Year 2011-12, Course Evaluation forms will be put online, making the student participation more convenient and widespread. Online evaluation forms are being revised so that evaluations in each different instructional format (core studio, option studio, lecture, seminar/workshop) include questions relevant to the specific format.

Student Affairs Committee

In addition to the opportunity provided to students to comment on the quality of their education via Course Evaluations, students at the GSD have other means for providing collective feedback to the faculty and administration, including, most importantly, the Student Affairs Committee. The SAC is composed of elected representatives of the Student Forum, Program Directors from each of the GSD's departments, and the Dean of Students; it holds regular meetings once a semester, with follow-up sessions as necessary. Recent topics of discussion and study have included the redesign of new desks in the studio trays; the provision of additional plotters, laser cutters, and other equipment within the studio space; semester scheduling; and opportunities to pursue advanced research.

Independent Thesis Policies

The requirements of the M.Arch I Thesis Program approved by the Department of Architecture in 2009 reaffirm the basic premise of the Thesis Requirements established in 1981: that of requiring from the students a demonstration of their ability to successfully undertake independent work as a condition for graduation. Also reaffirmed is the premise established in 1992 that the Thesis Program constitutes "research in architecture." As with prior revisions to the requirements of the Thesis Program, the 2009 revisions are intended to maintain proximity between the potentials of thesis work and contemporary concerns of the discipline of architecture. In particular, they aim to encourage students to gain advantage from the very wide range of resources, activities, and interests of the Graduate School of Design and its Faculty, and through these, to make thoughtful contributions to the discipline. An abbreviated description of the M.Arch I Thesis Program appears here for the purpose of addressing Learning Culture.

The Thesis Director (currently Associate Professor Timothy Hyde) oversees the general operation and coordination of the Thesis Program. The Thesis Director reviews students' progress; receives students' and advisors' reports; and, when necessary, organizes activities supportive of thesis development. The Thesis Advisor is a member of the Faculty who supervises the student's research work during the Thesis Program. The relationship between the student and the Thesis Advisor is established at the beginning of the Thesis Program by a *common agreement* between the parties after they have discussed the intended research topic and methods and the Faculty member has accepted to act as the student's advisor. The Department of Architecture maintains a list of the Faculty who are eligible to serve as Thesis Advisors.

At the conclusion of the semester prior to enrolling in thesis (GSD-9301), students are required to develop and submit to their Advisors and to the Director a Thesis Proposal; the Proposal is a document incorporating the research material, analysis, and argumentation that will provide the basis of the Thesis Project. The Thesis Project is the final work submitted by the student at the conclusion of GSD 9301 as the culmination of his or her curricular work at the Graduate School of Design and in satisfaction of the Thesis Requirements.

The Thesis Advisor is responsible for the judgment of completion and adequacy of work submitted at the time of the final Thesis Review and, in consultation with the Faculty of the Department of Architecture during the Department-wide thesis grading session, for grading the Thesis. To fulfill the requirements of the Thesis program, the student's thesis must satisfactorily meet the established standards of the Department in terms of overall worth, significance, and completeness that recommends it to the highest standards of academic critical scrutiny. The Thesis Advisor and the Faculty will evaluate the thesis Project according to relevance, competency, persuasiveness, and other criteria agreed by the Faculty.

Permission to receive a grade of Incomplete for thesis will be granted only in extraordinary circumstances such as illness verified by a physician. With the counsel of the Thesis Advisor and the Thesis Program Director, a student may elect to extend the time of the Thesis. In this event the student must register for Thesis in the immediately following semester; a maximum of one additional semester will be granted for the completion of the work. The final review will take place either at a time agreed upon by the student and the Thesis Advisor or at the scheduled final reviews of the term in which the work is completed. Any student whose thesis receives a grade of Fail may be required by the Thesis Advisor and the Thesis Program Director to repeat the thesis term.

Academic Integrity

The GSD seeks to maintain a learning and working environment characterized by academic integrity and fair access to educational resources. The GSD expects all students to honor these principles. Actions that violate these principles include the following, and may be the basis for disciplinary action:

- a. Cheating on examinations, either by copying the work of other students or through the use of unauthorized aids;
- b. Fraudulent presentation of the work of others (either written or visual) as one's own work (plagiarism); notwithstanding, the academically acceptable tradition of incorporating assistance that is freely offered by GSD classmates is permitted in the final thesis presentation, though the assistance must be acknowledged;
- c. Simultaneous or repeated submission without permission of substantially the same work (either written or visual) to more than one course;
- d. Alteration or misrepresentation of academic records.

Cases of academic misconduct adhere to the procedures outlined in the student handbook, *Guide to Gund* (Appendix 6), available on the GSD website at www.gsd.harvard.edu/#/information-for/current-students.html.

Policies on Personal Conduct

Student membership in the GSD community is a privilege conditional upon ethical conduct in academic matters. In addition, all students share in the GSD's responsibility to maintain an environment conducive to intellectual freedom and the pursuit of knowledge. Students are bound by those policies of Harvard University and the Graduate School of Design that govern student conduct. Access to and familiarity with the policies that govern student conduct are a right and responsibility of every student. Additionally, the university document *Playing it Safe* contains important information on crime prevention and programs and services at Harvard: (see www.hupd.harvard.edu/playing_it_safe.php)

A free environment for academic pursuits requires reasonable conduct, both in academic and nonacademic affairs, by all members of the school. The faculty may impose discipline or penalties on individuals for acts that disrupt or endanger the university community's pursuit of teaching, learning, and research in an atmosphere of free inquiry and personal and psychological security. Specific domains considered here include, but are not limited to, the list below. Procedures for disciplinary hearings and sanctions are described in *Guide to Gund*, Section II. Review Process.

1. Respect for Others and Their Property. Behavior should be respectful of the rights, privileges, and sensibilities of other people, whether or not they are members of the academic community, and their property, whether or not it is university property. Intimidating, threatening, or hostile behavior toward others is a violation of this policy and may subject the offender to school and university sanctions. Likewise, willful destruction, theft and vandalism of the work or possessions of another student or group of students or of any educational resource (including computers and library materials) and unauthorized use of property are unacceptable and may also subject the offender to sanctions.

2. Personal Safety. Willful behavior that endangers the personal safety of others, whether or not they are members of the GSD, is a violation of school policies and may subject the offender to sanctions. Riots, violent intimidation or threats, use of weapons, physical assault, sexual offenses, and any other acts that endanger the physical well-being of individuals are violations of this policy. The faculty may consider sanctions whether or not civil or criminal penalties are imposed.

3. Protests and Demonstrations. Freedom of speech and assembly, including spontaneous and organized protests and demonstrations, is an essential part of both academic life and the culture of the United States. However, protesters and demonstrators are obliged to respect the rights of other individuals and especially to ensure personal safety for all participants. Although peaceful demonstrations are a matter of civil rights, it is a violation of this policy for any member of the GSD community to prevent or disrupt university functions, such as lectures, seminars, reviews, meetings, and other public events; and administrative, study, design, research, interview, and other nonpublic activities.

Sexual Harassment

The GSD seeks to maintain a learning and working environment free from sexual harassment. Sexual harassment seriously undermines the atmosphere essential to the academic enterprise. The determination of what constitutes sexual harassment will vary with the particular circumstances, but it may generally be described as unwanted behavior of a sexual nature, such as physical conduct or verbal comments or suggestions, which has an adverse effect on the learning or working environment of any member of the GSD community. For example, the guideline definition of the United States Equal Employment Opportunity Commission is as follows:

Unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature constitute sexual harassment when: 1) submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment; 2) submission to or rejection of such conduct by an individual is used as the basis for employment decisions affecting such individual; or 3) such conduct has the purpose or effect of unreasonably interfering with an individual's work performance or creating an intimidating, hostile, or offensive working environment.

Both men and women may be subjected to sexual harassment. Examples in the academic context may range from subtle forms of behavior or off-color jokes to blatant instances of the abuse of power such as making sexual favors a condition of success in a course. Allegations of sexual harassment will be treated seriously. The GSD is committed to working to resolve complaints of sexual harassment in a fair and expedient manner. Any GSD student who believes that he or she is subject to, or who is aware of, sexual harassment is encouraged to discuss the situation as soon as the possible violation, or the most recent incident in a pattern of action, occurred by contacting the Dean of Students. Procedures for disciplinary hearings and sanctions are described in *Guide to Gurd*, Section II: Review Process.

GSD Support Services

The student experience at the GSD is intense and rigorous, and at times can be stressful or overwhelming. The Office of Student Services assists students who may be having trouble keeping up with the academic load of the GSD for various reasons, including difficulty with the English language, emotional distress, or other academic issues. Resources available to students include the Graduate Student Learning Support (GSL) where learning specialists work with students experiencing problems in executive functioning, time management and other academic issues; HUHS Mental Health Services, which offers counseling for a wide variety of concerns, including bereavement, transitional issues and adjustment difficulties, depression, anxiety, or stress, concerns interfering with work or relationships, sexual concerns, and high-risk behaviors around food, alcohol and/or other substances; Center for Wellness, which helps students cultivate well-being by offering individual treatments, such as

acupuncture, massage, Reiki, and shiatsu, as well as programs in movement/exercise, yoga/Pilates, safety classes, and other special workshops.

Students with Disabilities

Students who have physical, learning, or psychological disabilities are encouraged to contact the Dean of Students/Disability Coordinator. Students are encouraged to contact the Dean as early as possible to allow for any preparation that must take place before the semester begins. The academic departments and faculty have adapted their teaching practices to accommodate students with disabilities and the professionals who work with them. Further information about current GSD architecture students with disabilities and the measures provided to ensure their full integration into the educational environment is provided later in this report (see subheading “Students with Disabilities” in section 1.2.1 “Human Resources and Human Resource Development”).

Social Equity

“Since its founding, the Graduate School of Design has been a crossroads of learning and intellectual debate. Today, the school is committed to building on that legacy of cultural diversity, firm in the conviction that a multiplicity of voices and viewpoints among students, staff, and faculty is essential to our mission of advancing the fields of architecture, landscape architecture, and urban planning and design.”

Dean Mohsen Mostafavi

In the fall of 2008, Mohsen Mostafavi began his first full year as Dean of the Harvard Graduate School of Design. One of his first acts was establish the Dean’s Diversity Initiative, whose goal is to increase the number of underrepresented minorities within the GSD faculty, staff, and student body. Concerned about the low numbers of African Americans, Hispanics, and Native Americans at the GSD and in the design professions, the Dean established a committee of faculty, students, staff, and alumni to look at the issue and make recommendations. Two members of the architecture faculty, Jonathan Levi and Erika Naginski, are members of the committee. A complete list of DDI committee members can be found in Appendix 7.

Within the first year of its inception, the DDI met several times and developed short- and long-range goals for increasing diversity within the GSD. Some of its early accomplishments include:

Recruitment of Prospective Students. One of the most pressing concerns is the expansion of African American, Hispanic, and Native American enrollments in the student body. The overall applicant pool for M.Arch I and M.Arch I AP programs increased by 30% between 2008 and 2009, from 633 to 822, and has hovered around the same numbers since. The number of underrepresented minorities (African American, Hispanic, and Native American) in that applicant pool increased 23% that same year, from 57 to 70.

Faculty Recruitment. The DDI compiled a list of potential women and minority candidates for faculty appointments, lectures, and juries. DDI submitted a formal Faculty Recruitment proposal to the Dean. The Architecture department appointed two African American instructors from this list to Design Critic positions, and others have been invited to participate in studio juries, resulting in a visible increase in minority representation. Efforts to recruit and hire African American and other minority candidates for ladder faculty or other multi-year positions, however, have not produced results since the time of the last accreditation visit.

Diversity Summit, April 2009. Invitees included distinguished professionals and academics who know the GSD and have been active in leading change in the design profession and academia. Topics included current status of diversity at the GSD, critiquing the GSD’s plans to date, and seeking new strategies.

Exhibition and Panel Discussion: ‘Max Bond, Multiculturalism, and Social Equity in the Built Environment,’ October 2009. Co-sponsored by DDI and the Office of Alumni Relations, the GSD

honored Max Bond, M.Arch '58, Partner at Davis Brody Bond Aedas, who passed away in February of that year. Panel discussions featured practitioners who built on the 2008 'Future Present' symposium which addressed the relationship between marginalized cultural environments, schools of design, and a call for a renewed leadership and sense of purpose within the profession.

DDI Discussion with Alumni at Alumni Weekend, October 2009. Topics included the GSD's efforts to boost diversity among faculty and students. Initiative members presented an overview of the Dean's Diversity Summit held in the spring. Student initiatives such as Project Link and Design Initiative for Youth were highlighted.

GSD Presence at National Organization of Minority Architects (NOMA) Conferences, 2009-2010. Four GSD students and one faculty member attended the 2009 NOMA conference held in St. Louis, Missouri. The GSD played a major role in the 2010 NOMA Conference in Boston as a platinum sponsor. The School's Diversity Recruitment Manager was part of the conference planning committee. One of the conference's major events, held in Gund Hall, honored architects Stull and Lee and was moderated by Richard Dozier from Tuskegee. It was one of the highlights of the conference. Five GSD workshops were also offered and included the following faculty: Maryann Thompson, Spiro Pollalis, Christoph Reinhart, Paul Cote, Alex Krieger, Scott Cohen, Sanford Kwinter, and Gareth Doherty.

The focus of the GSD's efforts to enhance diversity within the School and in the profession has been twofold: 1) to expand enrollments of underrepresented minority students; and 2) to develop programs, locally and internationally, that expose middle and high school students (particularly minority students) to the design fields in an effort to increase the number of minority candidates applying to design schools in the future, also later practicing in the field or teaching in academia. In the fall of 2011 the GSD filled a newly created staff position, Assistant Director of Student Life and Recruitment – the new Assistant Director, John Aslanian, will focus on minority recruiting, working closely with faculty and staff to develop a recruitment program and conduct outreach activities.

Diversity Efforts in the University

In November 2010, Harvard's president, Drew Faust, formed the IDEA Council (Inclusion, Diversity, Excellence, Advisory) to advise her on diversity related issues across the University. Every school is represented including the GSD. Out of this committee came the first annual 'One Harvard' event, which brought admitted students of color to the Harvard campus on April 9, 2011. The University provided funds to cover travel expenses for students who attended.

Nondiscrimination Policy

In accordance with Harvard University policy, the Graduate School of Design does not discriminate against any person on the basis of race, color, gender, sexual orientation, religion, age, national or ethnic origin, political beliefs, veteran status, or handicap, in admission to, access to, or employment in its programs and activities. Every effort will be made to ensure fairness and consistency in the school's relations with its students, faculty and staff. Procedures for disciplinary hearings and sanctions are described in Section II. Review Process. A student of the GSD community who believes that any form of prohibited discrimination has occurred should bring this matter forward for review. (See *Guide to Gund*, Section II for a description of the review process.)

1.1.3. Responses to the Five Perspectives

[This section will be submitted by addendum to the current APR at a later date.]

1.1.4. Long-Range Planning

Long-Range Planning at the GSD

In Fall 2010, Dean Mostafavi and the senior leadership of the GSD including Executive Dean Pat Roberts, Associate Dean (Academic) Michael Hays, and the Department Chairs began a new Five-Year Academic Planning exercise in consultation with GSD Senior Faculty. This renewal of the academic plan for the GSD is expected to be complete during the fall semester, 2011. This plan, many of whose details have already been announced and/or begun to be implemented, will form part of an academic planning exercise across Harvard University and is intended to also lend shape to the University's upcoming capital campaign.

The five-year planning exercise covers not only academic planning for the Graduate School of Design's various programs, including the Master in Architecture degree program, but also financial, staffing, and space planning. It includes projections for enrollment increase in several degree programs (though currently not for the Master in Architecture degree program) and a corresponding expansion and renovation of our facilities. The most important details of the GSD's five-year plan that have been made public are outlined below; aspects that affect or are closely related to the long-range plans of the Master in Architecture degree program are given particular focus.

Enrollments

The Graduate School of Design, as an entity within the University, is relatively small in terms of student and faculty (in Full-Time Equivalent, or FTE, figures), and its scope and size have not enabled it to function optimally. The GSD does not benefit, for example, from critical mass in degree programs such as MUP that have relatively smaller enrollments compared to the M.Arch program. Although the GSD is one of the smallest schools within Harvard University, it offers (for better or worse) one of the highest number of separate degree programs (10). Bringing enrollments up in programs such as MUP, MAUD, and MDesS will bring critical mass, ensuring that the School is educating the appropriate number of future leaders in each of its disciplines. The M.Arch I program has historically had the largest enrollment among GSD programs, and its current enrollment targets – 60 students entering the program in the first year, with an 12 additional students added with Advanced Placement in the second year – are not expected to increase in the near future.

The MDesS program provides innovative opportunities for the GSD as we pursue the dual mission of design excellence and social engagement; the program has successfully launched several new concentrations during the Mostafavi deanship, including Art, Design, and the Public Domain (fall 2010), Critical and Strategic Conservation (fall 2011), and Anticipatory Spatial Practice (fall 2011). The MDesS program presents that possibility of instigating cross-disciplinary collaboration with faculty from other schools and departments and of contributing to an emerging discussion of developing more arts-related programs within the University. Increasing enrollments of non-studio based programs like the MDesS, DDes, and to some extent, the MUP program, will help the school increase its overall enrollment without putting undue strain on desk space within the studio space of Gund Hall.

As the design disciplines become more complex, the School has needed to offer a greater variety of courses so that students from all disciplines can pursue not only their required courses but also those that expose them to broader fields of study, ranging from geometric modeling to advanced fabrication to large-scale urban and landscape planning. Faculty hires have increased over the past several years, reflecting our response to this need (as well as to increased enrollments), and the size of the GSD faculty is projected to grow from 69.5 FTE (current) to 83.4 FTE within five years.

Financial Aid

Lack of sufficient financial aid has affected our ability to compete against certain schools for the best students, especially in architecture and planning. However, we achieved an admissions yield rate of approximately 72% over the past three years. Although the average grant to individual students has remained relatively flat since 2008, our financial aid expenditures have doubled over six years as a result of increased number of grants, higher enrollments, and making grants available to international students. The multiyear plan assumes we will maintain a standard tuition discount of 42%.

Faculty Planning

Faculty FTEs have steadily grown in recent years as a result of our efforts to create a stronger presence of full-time faculty who can provide the leadership necessary for achieving our goals. We plan to increase the number of tenured faculty and convert some of the part-time tenured faculty positions into non-tenured positions as these faculty members retire. The recent increase in numbers is also due to reliance on visiting faculty, who fulfill their traditional role of linking design pedagogy to practice, and who also provide us with an opportunity to gain or experiment with emerging domains of knowledge in our various fields of study. More of these visiting faculty positions will be converted into multiyear junior and senior positions. The goal of increased faculty hiring in the next five years is to achieve an overall increase of roughly 14 FTEs over five years, which, together with projected enrollment increases, will produce a student-to-faculty ratio of roughly 9:1 (compared to 8.4:1 currently). It should be noted that design studio education is intensive, with 12-13 students per studio section normally the maximum, and 9-10 students ideal for core studios in M.Arch, MLA, and MUP programs.

Staffing

GSD staffing levels have been comparatively lean compared to the University as a whole, but additional staffing cuts (about 10%) were made in 2010 as part of an administrative reorganization. Over the past year, however, new positions have been created and filled, including a financial analyst in Financial Services, a Web Content Manager, a new director of Executive Education (see below), and additional positions in Student Services for recruitment and learning support. Providing adequate staff to support faculty research initiatives is now a high priority, so that the GSD can continue to attract and administer research sponsorship.

Executive Education

The GSD's Executive Education program was hit hard by the recent economic crisis; in 2011 a new Director, Rena Fonseca, took on the project of reshaping Exec Ed with the goals of addressing market needs more directly in course development; achieving greater participation of GSD faculty as instructors and guest speakers; and channeling the benefits of executive-level learning back to members of the GSD Community.

Space Planning

The School's design campus has started to take form with the recent acquisition of three nearby houses that are now in use. Doctoral students have workstations in 20 Sumner Road, and MDesS students are housed in 40 Kirkland Street. Each house also has two seminar rooms for small classes and meeting space. Faculty and staff offices may be added over the course of the next few years.

After surveying students and faculty, slight modifications were made to the design of the new desks in the Gund Hall studio trays. The second floor and mezzanine have been renovated over the summer of 2011,

and the replacement of all remaining older workstations is projected to be completed over the summer of 2012.

Additional modifications/renovations to the School's physical facilities entailed by the 2011 five-year plan (each of these detailed in greater depth in section 1.2.3 "Physical Resources") include a new classroom added adjacent to the Loeb Library and Portico Rooms; modifications to the Loeb Library interiors, responding to students' needs for meeting and computer use space, and consolidating specialized collections; updates and enhanced machinery and facilities for the basement Fabrication Labs; and a new curtain installed in Piper Auditorium, which will enable the School to more attractively configure the auditorium for various uses.

Student Information System and Website

A number of information and communications systems improvements have been completed over the summer of 2011, including the new GSD Registrars Online Student Information System (GROPIUS), which replaces most of the paper formwork students needed to complete for registration and enrollment in the past with convenient online resources. Simultaneously, the GSD's new-and-improved website has just been launched in September 2011 (see section 2.4 "Public Information").

Curricular Planning

Long-term curricular planning for the Master in Architecture Degree Program – including the recent development of semester-abroad study programs for Architecture students, changes in the Independent Thesis program, and the integration of research laboratories into advanced elective curriculum – while under the general purview of the Dean's Five-Year Planning Study – have primarily evolved within the context of the Department of Architecture, led by the Chair, Senior Faculty, the Program Director, and individual faculty members responsible for specialized topic areas (history, theory, environment, technology, etc.). Curricular review and development procedures are discussed later in this report, in section 2.2.3 "Curricular Review and Development".

1.1.5. Program Self-Assessment Procedures

Program Self-Assessment

The GSD's Department of Architecture remains among the strongest programs of architectural studies in the United States. Nevertheless, the School is aware that it must remain alert and flexible as it continues to confront both unforeseeable challenges as well as problems endemic to the academy and the discipline at large. Therefore, the Dean of the School annually presents a strategic plan outlining broad achievements, goals and shortcomings, while the Department of Architecture regularly undertakes critical reassessments of its pedagogical mission and ongoing reforms. The details of both forms of strategic planning represent concrete steps taken to achieve goals set out in long-term planning studies, as outlined in the previous section 1.1.4 "Long-Range Planning".

Ongoing Evaluation of the Mission Statement

Review and evaluation of the architecture program and mission take place each academic year. While the principal pedagogic objectives do not radically change, adjustments in course material, modification of design exercises, and introduction of new courses are a frequent and necessary part of the educational process. Program self-assessment is a regular topic of discussion in Senior Faculty meetings, which occur once a month. Department Chairs and other tenured faculty confront difficult issues, including how the various programs are shaped and should evolve to remain current with the profession and with contemporary architectural research. Topics such as curriculum reform, individual course evaluation,

faculty needs, junior faculty development and promotion, junior and senior faculty searches, and so on fall under the purview of these meetings.

Faculty, Student, and Graduate Assessment

Several faculty committees for review of curriculum have been established on an ad hoc basis. They have reported to and worked with the chair of the architecture department, and they have consulted with others, including students, as applicable. The entire faculty reviews and approves all curricular changes proposed by the departments.

Formal grading sessions, which take place each semester for core studios and for thesis projects, are a critical venue for curricular self-assessment within the Architecture Department. At these sessions, a majority of the design faculty gather to discuss the direction of the M.Arch curriculum, the effectiveness of various teaching methods, as well as to agree on standards for grading and evaluation of student progress.

In addition, all students are asked to complete an evaluation of each of their courses, both lecture and studio, at the end of every term. Results are compiled and formatted by department staff, kept available (in summary form) for future reference by students, and referred to by the department chair in consultation with faculty for improving teaching and planning future courses and studios. They are also considered in reappointments of visitors and in promotions of faculty members. (A more detailed discussion of course evaluations as an element of the GSD's learning culture is included elsewhere in this report, under section 1.1.2 "Learning Culture and Social Equity"; and samples of the new online course evaluations will be provided to the visiting team in the spring.)

The Student Forum is the governance body elected by students. They have subcommittees that deal with a variety of issues. The Academic Affairs subcommittee is responsible for remaining in touch with students about concerns related to curriculum, course scheduling, and other academic matters. This group of students comprises the student membership of the Student Affairs Committee, which also includes the faculty program directors from each of the school's programs, the assistant dean for academic services, the dean of students, and the executive dean. The agenda is set by the students and discussion centers on whatever issues they feel are most pressing. The Student Forum as a whole has lunch meetings monthly with the dean. They set the agenda and raise any administrative or academic issues that they wish. The administration takes these issues seriously and works with the Forum to implement agreed upon changes. A summary of issues considered in the past several years, as well as those currently under consideration, is included in Section 3.4.

The structure of the GSD Student Forum is flexible, and has evolved over the years to reflect the primary interests of the student body. Today, the Student Forum is headed by nine elected officers who oversee the forum's primary areas of initiative: academics, events, infrastructure, alumni relations, internal and external communications, and funding. In order to keep informed of students' primary concerns, the Student Forum officers rely on volunteer class representatives from each of the GSD's academic programs – Architecture, Landscape Architecture, Urban Design and Planning, Master in Design Studies (MDesS), and Doctor of Design (DDes). The Class Representatives determine the primary issues of their classmates, and set the agendas for meetings with departmental heads. The Student Forum Officers and Class Representatives come together to form committees centered on specific school-wide issues. These committees function sometimes as support for the Officers, and sometimes as "think tanks" for solving persistent issues such as the faculty advising system, student contact with alumni, and the lack of interdisciplinary courses at the GSD. The Student Forum committees are flexible, and can be formed and disbanded by the Officers depending on current student-wide interests.

Student representatives also meet annually with the Visiting Committee, and participate in faculty presentations on the curriculum to the Alumni/ae Council. Students do not sit on faculty search or other governance committees. To help the faculty remain cognizant of student opinion and perceptions, the chair schedules open discussions with students throughout the academic year.

The 32-member GSD Alumni/ae Council, which represents the ca. 7,500-alumni/ae body, meets semi-annually to learn about the school and its programs. The two-day program offers opportunities for discussion and informal feedback, and also provides a chance for current students to meet the Council members. Also, at each meeting the GSD Student Forum gives a presentation to the Council, which is followed by a lively discussion on ways that the Council can help in advising students on their career paths.

Assessment by the University

In 2001-02, the current Provost, Steven Hyman, instituted a process of annual academic planning, which involves at least two meetings per year with the dean and senior administrators of each of the schools at Harvard. Several vice-presidents and other university administrators also participate. The topics of these meetings with the GSD have included: profile and quality of applicant pools; executive education; the financial condition of the school; research centers and how they are reviewed for academic quality and fiscal management; the faculty appointments process; the Professor in Practice position and the role it plays in the school; the doctoral programs and their relationship to the other degree programs; and the role of the GSD in the future capital campaign.

The Board of Overseers, founded in 1642 and the senior of the two governing boards, represents “the ultimate responsibility of the community at large for the operation of the University -- the very core of the Overseers’ role in Harvard governance being the duty to keep the University true to its Charter as a place of learning.” The Board consists of thirty members, often alumni/ae, elected, in groups of five each year, to six-year terms by alumni/ae holding any degree from Harvard or Radcliffe. Its principal duties are “visitation,” meant to inform the Overseers about the state of the University, and providing “counsel” to the President and Fellows.

On the educational side, visitation is carried out through an elaborate system of visiting committees (some sixty in all, involving almost a thousand individuals from outside the University); on the administrative side, standing committees of the Board essentially perform this function. Especially important is the independence of the visitation process, which answers to neither the Corporation nor the administration. “Visiting committees may have any information they ask for; they may ‘pick up any rug.’ The findings of a visiting committee are brought to the attention of the Overseers, though their powers are limited formally to calling these findings to the attention of the President and the deans of the Faculties...and it is up to these senior academic officers to determine how they are to be acted upon.”

The school's Visiting Committee at any one time may consist of approximately twenty design practitioners, academics, planners, developers, legal experts, critics, artists, or other professionals with an interest in the GSD and the design and planning fields. The committee meets annually with the dean, faculty, senior staff, and students, and submits an evaluation to the board. The committee's visit generally includes discussion and review of the school's long-term goals and objectives; the current status of programs, faculty, students, and resources for support; in-depth focus groups on issues or programs of current concern; visits to studios; meetings with the chairmen and faculty of each department; a luncheon with members of the Student Forum; and a wrap-up meeting with the dean and chairmen. The in-depth topics of the most recent meeting included: Knowledge Domains and Design; Internationalism and Design; and Information Processing and Design. Other meetings have focused on building and environmental technology, information technology, the core component of the professional degree programs, and three subject areas of the professional programs: history and theory, science and technology and socioeconomic. (The list of current Visiting Committee members is included in Appendix 8.)

1.2. Resources

1.2.1. Human Resources & Human Resource Development

Faculty and Staff

Faculty Teaching Assignments and Credentials

The following pages contain a matrix listing Architecture Department faculty members, their areas of expertise, and the courses they taught in each of the two prior academic years. An updated supplement, covering courses taught in Academic Year 2011-12, will be provided at the time of the Accreditation Team's visit to the GSD in spring 2012. Individual resumes for each of these faculty members are found in Appendix 2.

Faculty member	Summary of expertise	Academic Year 2009-2010						Academic Year 2010-2011						
		Course number						Course number						
Abalos, Inaki	design studio, skyscrapers, urban design	1318	9206AUPD											
Bechthold, Martin	structures, fabrication, robotics, advanced research, CAD/CAM	1320	6415	6201			6202	6317						
Blau, Eve	history of architecture and urban form, specialist in Eastern Europe	4401	4130				9107	4205m1	4501					
Cohen, P. Scott	architectural design, projective geometry, computational design	1316	1101	2102m2			1315	1101						
Correa, Felipe	urban design						1202							
Etzler, Danielle	architectural design, materials, fabrication	1102	1101				1102	1201	6111m1					
Georgoulas, Andreas	project management, professional practice	6328	9206A02	7411	7440		6328	6339	5333	7411				
Hays, K. Michael	architectural history and theory, critical conservation, academic dean	3305	4201m1	4202m2	4501		3435	4418	3436	4201m1	4202m2			
Hong, John	architectural design, sustainability	1202	1201	9206XDEP										
Howeler, Eric	architectural design, construction technology, fabrication	1102	6203m4	1101			1202	6203m4	1201					
Hoxie, Christopher	digital media, immersive environments	2405	2319				2405	2107m2	2319					
Hyde, Timothy	architectural design, history and theory, thesis coordinator	4425	9301	1201	4205m1	4501	9203	1202	4429	9301	4206m2	4501	9301	
Ibanez, Mariana	architectural design, computational and responsive environments	1102	1201				1201	2324						
Idenburg, Florian	architectural design	1202	1201				1202	1201						
Jennings, Richard	professional practice, project management, integrated project delivery	7413	7407	7440			7440	7407						
Kao, Kenneth	architectural technology, sustainability	6413					6413							
Kienzl, Nico	energy, sustainability, construction technology						6112m2							
Kwinter, Sanford	architectural theory, contemporary society	3426	3434	4206m2			3426	3437	3434					
Leers, Andrea	architectural and urban design, professional practice	1317					1320							
Legendre, George L.	architectural design, parametric design	1306	2404				1304	2404						
Levi, Jonathan	architectural design, construction technology	6203m3	1201				6203m3	1201						
Lynch, Peter	drawing						2101m1							
Michalatos, Panagiotis	computational design						6425	6426	6338					
Moneo, Rafael	architectural design, architectural theory	3211	3406				3331	3450						
Mori, Toshiko	architectural design, fabrication, engineering collaboration, globalization	1303	3432				9111	1302	3432					
Moussavi, Farshid	architectural design	1312	3409				1312	3409						
Mulligan, Mark	architectural design, construction technology, Japanese architecture, materials	6311	6111m1	6204			6311	6111m1	6204					
Naginski, Erika	architectural history	3504	4203m3	4201m1	4202m2	4423	3435	4203m3	4423	4201m1	4202m2	4428		
Nakazawa, Paul	professional practice, entrepreneurship	7408					1301	7408						
Picon, Antoine	history of architecture, history of technology, doctoral research methods	4204m4	4355				3504	4204m4	4418					
Pollalis, Spiro	structures, project management, advanced research, sustainable cities	7222	9206A	9206A02	7411		6339	5333	6201					

Faculty member	Summary of expertise	Academic Year 2009-2010						Academic Year 2010-2011					
		Course number						Course number					
Reinhart, Christoph	sustainability, energy, daylighting, software development, advanced research	6205	6420	6112m2	6332	7330		6205	6332				
Rocker, Ingeborg	architectural design and theory, fabrication	1202	1101	9206A03				1102	1101	9101			
Sayegh, Allen	architectural design, computational and responsive environments	1320	2314	2310				2314	2324				
Schroepfer, Thomas	architectural design, construction technology	1102						1202	1303				
Schuler, Matthias	sustainability, energy	6412											
Scogin, Mack	architectural design, professional practice	1314						1313					
Silveti, Jorge	architectural design and theory, urban design							1318	3500				
Smith, Christine	architectural history, specialist in medieval, renaissance	4321	4419	4358				4321	4350	4358			
Thompson, Maryann	architectural design, professional practice	1202	7212					7212	1201				
Whittaker, Elizabeth	architectural design	1101						1102	1101				
Wickersham, Jay	professional practice, legal aspects	7212	7410					7212	7410				
Wilson, T. Kelly	drawing, visual studies, Rome program	2323	2101m1	2308				2308					
Witt, Andrew	digital media							2107m1					
Wodiczko, Krzysztof	art in public domain							2483	2481	2482			
Wu, Cameron	architectural design, projective geometry	1102	1101	2102m2				1102	1101	2102m2			

Policies for Faculty Appointment, Promotion, and Tenure

The school seeks to attract and retain individuals who possess the personal qualities that enable them to be highly effective teachers and contributors to the school's programs. These qualities generally include high levels of intelligence, clarity of expression, analytical ability, critical judgment, imagination, creativity, initiative, and industry. Essential also are a willingness to support free inquiry and expression by others and the capacity to work in constructive collaboration with others. In addition to the personal qualities sought in individuals appointed to the faculty, the school assesses candidates for appointment, reappointment, and promotion by the following criteria:

Teaching. Candidates must demonstrate achievement in teaching through their command of subject, logic of organization, clear communication of material, and capacity to develop relationships between the topic and the broader field. They shall also provide evidence of their ability to arouse curiosity in and stimulate creative work by students. Supervising independent study and research by students is part of the teaching responsibilities. The preparation of textbooks or teaching aids and development of the curriculum are added demonstrations of attainment in teaching, but they are not substitutes for successful classroom or studio performance.

Creative Work. A candidate's scholarship, design, or professional work, or a combination thereof must provide evidence of a creative and productive mind. The school will assess creative work by examining normal products of such activity, including drawings, models, exhibitions, and built work, as well as work and publications authored by the candidate and publications about the candidate's work. The work will be evaluated for originality, significance, and intellectual contribution to the field. Although the quality, rather than the quantity, is paramount, the candidate should show evidence of continuing productivity that will benefit the learning of others. Professional activities that do not represent significant original work are evidence of competence, but they are not substitutes for the requirement of creative achievement.

Academic Service. Academic service to the department, the school, and the university in the form of student advising and participation in program development and administration is mandatory for reappointment or promotion in all tenured and junior ranks. Service to public agencies, community organizations, and professional societies shall be taken into consideration, but it is not a substitute for service to the school and university.

In the school's evaluation of candidates for appointment, reappointment or promotion, desirable personal qualities and high potential are not substitutes for a record of continued and productive achievement. Creative contributions to the field through scholarship and/or design are essential to effective teaching over time. Continued study and investigation with public exposition of research and professional accomplishments are normal obligations of faculty at Harvard.

The school appraises candidates according to individual career development. It is not expected that individuals in the initial phases of their careers will have the same records of achievement as more senior individuals in the field. The guiding principle is that the school should have a faculty of exceptional quality and that its individual members should be among the most creative and productive in the field when compared to individuals at comparable stages of career development.

All employment decisions should be made solely on the basis of merit. To protect this intention, faculty shall neither initiate nor participate directly or indirectly in decisions involving direct benefit to members of their immediate families, such as initial employment or appointment, reappointment, promotion, salary, teaching or work assignments, research or travel funds, and leaves of absence, etc.; nor shall they be involved in circumstances that could result in violation of confidentiality of personal or employment records. It may be that other relationships could interfere with objective and equitable supervisory decisions and, in cases where relationships between faculty members or faculty members and staff members raise this question, the dean shall be consulted and make a ruling.

Nondiscrimination and Equal Employment Opportunity

In accordance with Harvard University policy, the Graduate School of Design does not discriminate against any person on the basis of race, color, gender, sexual orientation, religion, age, national or ethnic origin, political beliefs, veteran status, or handicap, in admission to, access to, or employment in its programs and activities. Every effort will be made to ensure fairness and consistency in the school's relations with its students, faculty and staff.

In making appointments to the Faculty of Design, search committee members and others are bound by the policies regarding nondiscrimination, equal employment opportunity and nepotism as outlined in Section III of the GSD Faculty Handbook.

On May 20, 1985 the President and Fellows of Harvard College adopted the following statement concerning the University's policy on nondiscrimination:

"Harvard University's policy is to make decisions concerning applicants, students, faculty and staff on the basis of the individual's qualifications to contribute to Harvard's educational objectives and institutional needs. The principle of not discriminating against individuals on the basis of race, color, sex, sexual orientation, religion, age, national or ethnic origin, political beliefs, veteran status, or disability unrelated to job or course of study requirements is consistent with the purpose of a university and with the law. Harvard expects that those with whom it deals will comply with all applicable antidiscrimination laws."

The GSD not only endorses this policy statement, but also insists that every effort be made to ensure fairness and consistency in relations among its students, faculty and staff. Students who complain of discrimination follow a procedure described in the Student Handbook. Complaints by faculty or about faculty by others not members of the student body will follow the procedure outlined in the "Review Procedures" section of the Faculty Handbook.

Initiatives to Promote Diversity (Faculty, Staff, and Students)

In the fall of 2008, Mohsen Mostafavi began his first full year as Dean of the Harvard Graduate School of Design. One of his first priorities was to establish the Dean's Diversity Initiative. Its goal is to increase the number of underrepresented minorities within the GSD faculty, staff, and student body. Concerned about the low numbers of African Americans, Hispanics, and Native Americans at the GSD and in the design professions, the Dean has established a committee of faculty, students, staff, and alumni to look at the issue and make recommendations. The Dean's Diversity Initiative is described in greater detail in Section 1.1.2 "Human Resources and Human Resource Development".

Resources for Faculty

The GSD Office of Faculty Planning administers faculty payroll and benefits matters, manages searches to fill open faculty positions, coordinates the review and promotion of current faculty, and processes the appointments of all regular and visiting faculty. Each academic office is the main source of information and resources for its faculty. The department chair, the program director(s) and staff are located there. Resources provided for faculty include office space, clerical support, duplication services, office supplies, telephone/fax and mail, audio-visual and photography services. Additional resources include the School's physical resources (including computing/information technology resources) described in Section 1.2.3 and the information resources described in Section 1.2.5.

Professional Development

Keeping current with professional trends in the practice of architecture, as well as internships and licensure requirements, are necessary for those engaged in teaching architecture within the context of a professional school like the GSD. Professional Development options available to faculty members in the Department of Architecture take several forms. Twenty-two faculty department faculty members are

principals of architecture firms based in the U.S. or other countries (Spain, Netherlands, United Kingdom, Germany) and actively engaged in designing buildings around the world; several others are principals in other kinds of professional firms (law, engineering and sustainability consulting) that collaborate with architects on their projects. Faculty members who maintain active licensure as architects within one or more U.S. jurisdictions (including at least 14 of the 46 full-time and adjunct faculty members listed in the Faculty Credentials and Teaching Assignments matrix above) are required to fulfill Continuing Education requirements – the precise number of classroom hours or CE equivalent varies by jurisdiction. GSD Faculty may have tuition discounted or waived when they enroll in Executive Education courses offered at the GSD. Those faculty members who run practices (outside of School) and employ young architects and architectural interns frequently are involved in IDP procedures, both as employers and as mentors. In these roles, faculty members gain direct knowledge about recent changes to internship and registration exam requirements. The GSD's IDP coordinator, Meryl Golden, also sends regular updates to students and faculty regarding NCARB internship and registration policies.

Research and Scholarship

Harvard is a research-based university, and the GSD places strong emphasis on the scholarly production of the faculty. A broad range of activities constitutes “scholarly,” such as design explorations, professional studies, research, and scholarly discourse. In design, this may include entering competitions; conducting prototypical design or planning studies; testing policies through design, planning, or simulating models, or preparing case studies. More typical research may include empirical investigations, as well as speculative essays setting forth hypotheses and positions. Members of the faculty are expected to present their scholarship for peer review and discussion through exhibitions and/or publications.

Full-time faculty members are expected to initiate research or scholarly study under the auspices of the School. The focus of individual research is determined in consultation with the department chair and the dean of the faculty. Where appropriate, the responsibility for active scholarship includes writing proposals and seeking external funds, as well as leading and supervising investigations and preparing exhibitions or publications. Research funded by outside agencies is subject to the review, approval and budget procedures of the GSD and the University.

The school-wide lecture program presents internationally prominent speakers in the design fields. They are invited to share their work and ideas with the GSD community, thus providing insight into contemporary professional practice and scholarship. In addition, lectures sponsored by the academic departments feature both visiting critics and departmental faculty speaking about recent work or issues relevant to their field. The GSD presents exhibitions that illustrate not only historic perspectives and contemporary projects, but also design approaches and issues. Faculty members are often involved on a curatorial level with the development of exhibition projects. As part of its commitment to design scholarship, the GSD publishes exhibition pamphlets and, occasionally, full-length catalogues in conjunction with exhibitions of the work of internationally prominent architects, landscape architects, and urban designers.

Harvard Design Magazine is published twice a year by the GSD and explores a broad range of critical issues in architecture, landscape architecture, and urban design. Deliberately pluralistic, the periodical is intended for a diverse readership of scholars, practitioners, and generalists. The heart of each issue is a feature section focused on a theme (for instance, “Popular Places,” “Representations/Misrepresentations,” “Conflicting Values,” “Constructions of Memory,” “Design and Class”); the themes are defined broadly so as to encompass a range of disciplines and methodologies. The magazine also publishes substantive book reviews, portfolios of photographs and drawings, recent design projects chosen by guest critics/curators, and columns on buildings and landscapes. In addition to scholars and architects from the United States and abroad, the editorial board of *Harvard Design Magazine* includes three members of the GSD faculty, representing the departments of the school. The editors welcome and appreciate the advice and viewpoints of GSD faculty, and invite suggestions for articles.

Policy on Faculty Leaves

The School's responsibility to maintain a consistent educational environment with high-quality instruction must be balanced by its obligation to assist faculty in maintaining their personal creative work in scholarship and/or design. When leaves and short-term absences from residence will contribute to the creative activities or professional expertise of members of the faculty, they shall work with the chairs of their departments to plan for such leaves and short-term absences sufficiently in advance to permit satisfactory coverage of the faculty members instructional and administrative responsibilities. The granting of leaves and short-term absences is dependent upon securing a satisfactory replacement to offer instruction and on the department's ability to maintain the services of academic administration.

Individuals holding the position of Professor or Professor in Practice may be granted paid sabbatical leave for personal study or to conduct design and/or scholarly activities. Teaching courses at another institution requires permission of the Dean and the Corporation. Sabbatical leaves may be requested after twelve full academic terms of continuous or discontinuous service in regular academic status. Sabbatical leave may be granted for one academic year at half the base salary or for one term at the full base salary. Sabbatical leaves may not be linked with unpaid professional leaves and must be preceded by three years active duty in residence. The process for applying for sabbatical leave is outlined in the Faculty Handbook.

Associate Professors who have been appointed for a three- to five-year term may be granted, normally after two years in the position, a release from instruction to conduct scholarly or design activities that will be of significant benefit to academic careers. This option is not available to Adjunct Associate Professors. The School will on occasion give to Assistant Professors the opportunity to take a half-term leave with full pay, or a full-term leave with half pay, for certain specific professional development activities sponsored by the School, with approval of the department chair and the Dean. This is an option after two years as Assistant Professor. An appointment to an Assistant or Associate Professor position may include a provision in which the faculty member dedicates a certain percentage of time to conducting research, normally under the auspices of one of the school's research centers.

Professors, Professors in Practice, Adjunct Professors, Senior Lecturers, Adjunct Associate Professors, Associate Professors, and Assistant Professors may be granted full or partial leaves of one term up to a maximum of one year without pay to conduct design or research or to pursue their personal creative work in residence at Harvard. Permission of the Dean and the Corporation is required for teaching at another institution.

GSD Junior Faculty Development Funds

The School has established a program that provides research funds for a number of junior faculty. Approximately five awards of \$4,000 to \$6,000 each are available on a competitive basis. Faculty who wish to apply for these funds must file and discuss with their department chair a memorandum defining their research interests. They then submit a proposal to a committee that acts in an advisory capacity to the dean. Each year, every junior faculty member has access to a fund that can be used for expenses related to their research and scholarly activity. (In academic year 2010-11, the amount available to each full-time faculty member was \$4,000.)

Research Advancement Initiative

The Research Advancement Initiative (RAI), chaired by Professor Hashim Sarkis, was created with the goal of integrating professional education with the academic pursuits of a research university and addressing emerging topics of common interest. In the spirit of promoting interdisciplinary research, this initiative also seeks to nurture opportunities for collaborative work within the GSD and between the GSD and other units at Harvard and elsewhere in the world. Details of the Research Labs are described in the "Opportunities for Student Research" section below.

Research Centers

GSD currently houses six centers for faculty research:

Aga Khan Program at the GSD. The aim of the program is to study the impact of development on the shaping of landscapes, cities, and regional territories in the Muslim world and to generate the means by which design at this scale could be improved. The Aga Khan Program at the GSD is a research and activities program. It is a non-degree granting program, but any full-time student already enrolled at Harvard or MIT can benefit from its course offerings and research undertakings. The program supports affiliated doctorate students working on related topics in Muslim Societies.

Zofnass Program for Sustainable Infrastructure. The mission of the Zofnass Program is to research, develop, and promote methods, processes and tools that define and quantify sustainability for cities and infrastructures. The program's goal is to better enable the adoption, utilization, and promotion of sustainable solutions for the design, delivery, and operations of large-scale urban developments and infrastructure projects.

Design Robotics Group. The DRG is a research unit that looks at the future of design and construction in the context of robotic and computer-numerically controlled (CNC) fabrication. The DRG work is inherently interdisciplinary in that it combines issues of computation, materials and assemblies with CNC and robotic fabrication as well as with automated manufacturing. The research balances the response to real world problems with the need to expand our imagination and broaden design scope through a more speculative exploration of emerging design to fabrication technologies. Current emphasis is on advanced architectural ceramics, low-volume customization, and design for robotic assembly.

GSD-Squared. GSD-Squared is a research initiative within the recently formed Sustainable Design concentration area at the GSD. The initiative's objectives are to conduct original research related to daylighting and energy-efficient building design and to translate our findings into accessible, high quality information that helps design practitioners to create more comfortable and resource-efficient environments.

Real Estate Academic Initiative at Harvard University (REAI). REAI is an interfaculty, interdisciplinary program focused on real estate research and education across the University. It is overseen by the Office of the Provost, and led by a Core Faculty Committee representing five Harvard schools: the Graduate School of Design, the Faculty of Arts and Sciences, the Kennedy School of Government, the Harvard Law School, and the Harvard Business School.

Joint Center for Housing Studies. The Joint Center is a collaborative unit affiliated with the Graduate School of Design and the Harvard Kennedy School. Through its rich array of research, education, and public outreach programs, the Joint Center serves as a convener for informed discussion on a broad range of issues in the housing sector of the nation's economy. In doing so, it educates business leaders, government officials, policy makers, and the public on critical and emerging factors affecting housing and our communities.

Visiting Professors, Lecturers, and Design Critics

Visiting Professors, Lecturers, and Design Critics offering courses in the Department of Architecture during the last five academic years included:

Spring 2011: Leire Asensio Villoria, Sibel Bozdogan, Pierre de Meuron, Angus Eade, Jeanne Gang, Andreas Georgoulas, Jacques Herzog, Hiromi Hosoya, Eric Howeler, Chris Hoxie, Florian Idenburg, Lisa Iwamoto, Richard Jennings, Ken Kao, Hanif Kara, George L. Legendre, John Macomber, Panagiotis Michalatos, Carles Muro, Nashid Nabian, Paul Nakazawa, Erik Olsen, Matthias Rudolph, Allen Sayegh, Michael Schroeder, Craig Scott, Jesse Shapins, Ben van Berkel, Elizabeth Whittaker, James Wickersham,

Fall 2010: Sahel Alhiyari, Leire Asensio Villoria, Sibel Bozdogan, James Dallman, Pierre de Meuron, Neil Denari, Anton Garcia-Abril, Andreas Georgoulas, Jacques Herzog, Stephen Hickey, Eric Howeler, Chris Hoxie, Florian Idenburg, Bjarke Ingels, Richard Jennings, Ken Kao, Nico Kienzl, Wooyoung Kimm, Varun Kohli, Grace La, George L. Legendre, Peter Lynch, Patrick McCafferty, Michael McGough, Achim Menges, Panagiotis Michalatos, Lars Muller, Paul Nakazawa, Ana Pla Catala, Allen Sayegh, Christopher Schaffner, Jeffrey Schnapp, Jesse Shapins, Michael Wang, Elizabeth Whittaker, Andrew Witt, James Wickersham,

Spring 2010: Inaki Abalos, Shigeru Ban, Edwin Chan, Pierre de Meuron, Yvonne Farrell de Courcy, Marc Fornes, Andreas Georgoulas, Jacques Herzog, Eric Howeler, Chris Hoxie, Louisa Hutton, Florian Idenburg, Richard Jennings, Ken Kao, Hanif Kara, John Macomber, Patrick McCafferty, Michelle McNamara, Cynthia Ottchen, Matthias Sauerbruch, Allen Sayegh, Veronika Schmid, Jeffrey Schnapp, Michael Schroeder, James Wickersham, Cameron Wu,

Fall 2009: Nat Belcher, Sibel Bozdogan, Pierre de Meuron, Bill Dunster, Yael Erel, Andreas Georgoulas, Jacques Herzog, Eric Howeler, Chris Hoxie, Florian Idenburg, Richard Jennings, Ken Kao, Wooyoung Kimm, Gordon Kipping, George L. Legendre, Achim Menges, Paul Nakazawa, John Nastasi, Valerio Olgiati, Jinhee Park, Cecilia Puga, Allen Sayegh, Jeffrey Schnapp, Jelena Srebric, Hailim Suh, Nanako Umemoto, Elizabeth Whittaker, James Wickersham, Cameron Wu,

Spring 2009: Inaki Abalos, Paul Andersen, Pierre de Meuron, Winka Dubbeldam, Stephen Ervin, Danielle Etzler, Daniel Forster, Andreas Georgoulas, Jacques Herzog, Eric Howeler, Chris Hoxie, Louisa Hutton, Florian Idenburg, Richard Jennings, Jan Jungclaus, Ken Kao, Hanif Kara, Wooyoung Kimm, Sanford Kwinter, Samuel Lasky, Daniel Lopez-Perez, John Macomber, Lars Mueller, Anna Pla Catala, Joshua Prince-Ramus, Luis Rodriguez, Matthais Sauerbruch, Allen Sayegh, Michael Schroeder, Shohei Shigematsu, Dido Tsigaridi, James Wickersham, Cameron Wu,

Fall 2008: Paul Andersen, Chris Bangle, Frank Barkow, Conrad Berca, Stefano Boeri, Eric Bunge, Pierre de Meuron, Andreas Georgoulas, Jacques Herzog, Max Hirsh, Mimi Hoang, Eric Howeler, Chris Hoxie, Florian Idenburg, Catherine Ingraham, Wes Jones, Hanif Kara, Paul Kassabian, Sanford Kwinter, George L. Legendre, Daniel Lopez-Perez, Tim MacFarlane, Caro Nile, Ken Tadashi Oshawa, Mahdi Raman, Allen Sayegh, Julie Snow, Werner Sober, James Wickersham, Cameron Wu,

Spring 2008: Kimberly Eckert, Angelo Bucci, Lise Anne Couture, Teddy Cruz, Pierre de Meuron, Winka Dubbeldam, Ana Maria Duran, Jacques Herzog, Eric Howeler, Louisa Hutton, Florian Idenburg, Hanif Kara, Jeannette Kuo, Sanford Kwinter, Ines Lamuniere, Robert Marino, Christoph Reinhart, Matthais Sauerbruch, Allen Sayegh, Michael Schroeder, Matthias Schuler, James Wickersham,

Fall 2007: Kimberly Ackert, Sibel Bozdogan, Pierre de Meuron, Ana Maria Duran, Jacques Herzog, Alice Jarrard, Ken Kao, Sheila Kennedy, Jeffrey Kipnis, Sylvia Lavin, Brendan MacFarlane, Francisco Mangado, Robert Marino, Paul Nakazawa, Ryue Nishizawa, Hani Rashid, Allen Sayegh, Renz van Luxemburg, James Wickersham,

Spring 2007: Kimberly Ackert, David Adjaye, George Baird, Martin Bressani, Pierre de Meuron, Jacques Herzog, Francine Houben, Timothy Hyde, Mariana Ibanez, Bjarke Ingels, Ken Kao, Sylvia Lavin, Robert Marino, Mark Mulligan, Paul Nakazawa, Allen Sayegh, Irene Scalbert, Matthias Schuler, Yoshiharu Tsukamoto,

Fall 2006: Amale Andraos, Alex Anmahian, Sibel Bozdogan, Stephen Cassell, Maurice Cox, Mark Cruvellier, Pierre de Meuron, David Goodman, Jacques Herzog, John Hong, Timothy Hyde, Mariana Ibanez, Wesley Jones, Kari Jormakka, Mark Kalin, Jeffrey Kipnis, Robert Marino, Rahul Mehrotra, Mark Mulligan, Paul Nakazawa, Elysse Newman, Naree Phinyawatana, Ali Rahim, Luis Rojo, Allen Sayegh, Daniel Sherer, Maryann Thompson, Han Tumerktekin

Public Exhibitions

The Graduate School of Design presents exhibitions that illustrate contemporary design approaches and issues along with historic perspectives. The exhibitions draw on the scholarship and design expertise of the faculty, and each exhibit is designed specifically for the Gund Hall Gallery. Faculty participation in the exhibitions program often begins in research seminars in which students, faculty, and the exhibitions department collaborate on the planning and preparation of the exhibition. A complete listing is included in Appendix 9.

In addition to four annual faculty-led shows, the GSD mounts two exhibitions per academic year featuring student work. Each September a show entitled “*Platform*,” which is curated by faculty advisors from each academic department, highlights the most outstanding student work from each design studio from the preceding academic year. During Commencement and throughout the summer, an exhibition of student work designed by the graduating class is mounted. On a smaller scale, we have a rotating monthly exhibition featuring a faculty member’s current professional work. These shows give students insight into the design thinking of their professors. Participants are listed in Appendix 9. The academic departments also occasionally sponsor exhibitions held outside of the GSD, often in the context of a studio. Finally, the Loeb Library Special Collections Department regularly features on-site exhibitions of their extensive archival holdings.

Students

Admissions Evaluation Criteria

Applicants to the M.Arch I program (including those seeking Advanced Placement) are required to submit an application form, statement of purpose, resume, three letters of recommendation, college/university transcripts, results of GRE tests (and, in the case of non-native English speakers, the TOEFL test), as well as a design portfolio. Each winter, sixteen-to-eighteen architecture faculty members – divided into two committees to consider M.Arch I and M.Arch I AP candidates separately – do an initial review of the applications and portfolios to determine which applicants will make the first cut and go on to the final stage of admissions review. Roughly one-quarter to one-third of the applicants are then reviewed by the entire committee at the final meeting, where a group of applicants are chosen for admission (statistics for percentages of applicants admitted in recent years vary between 14-18% for the M.Arch I applicant pool and 6-10% for the M.Arch I AP pool).

In considering candidates for its M.Arch I and M.Arch I AP programs, faculty who serve as admissions committee members look carefully at a broad range of criteria that suggest the candidate will thrive in both an academic and a professional design environment. Because the successful practice of architecture requires practitioners to bring maturity, a broad base of knowledge, and diverse verbal, visual, analytical, and quantitative skills to inform their design work, we study each applicant’s undergraduate transcript, test scores, recommendations, and personal essay for evidence of achievement in a liberal arts background, visual literacy, awareness of architecture’s societal context, and a record of excellence in design or other realm of intellectual/artistic endeavor. Because our aim is to populate the M.Arch I program with candidates of diverse academic backgrounds and expertise, no single formula for the combination of portfolio, GPA, GRE scores, resume, recommendations, etc. can describe our ideal candidate for admission; for the past several admissions cycles, the M.Arch I program has accepted into its first-year ranks nearly equal numbers of candidates holding degrees with architectural and non-architectural majors.

The admissions criteria for candidates applying for Advanced Placement in the M.Arch I program puts greater emphasis on quality of undergraduate design work, as seen in portfolios showing projects that are thoroughly documented (including complete plans, sections, and 3D renderings for at least three architectural projects developed to a degree of resolution equivalent to or surpassing what is expected of M.Arch I students in the first year). Further, transcripts, course descriptions, and other evidence that applicants are prepared to engage all aspects of the M.Arch I program at an advanced level come under close scrutiny. In addition to prerequisites required of applicants to the first semester (calculus, physics,

and two architectural history survey courses), AP candidates must have completed additional undergraduate coursework in history, visual studies, construction and environmental technology equivalent to course offerings of the M.Arch I program's first year.

Student Support Services

The GSD offers comprehensive assistance to students through its Office of Student Services. The Office of Student Services houses: Admissions, Dean of Students (and disability services), Career Discovery, Career Services, Commencement Planning, Financial Assistance, and the Registrar. Other functions include Academic Support Services such as Graduate Student Learning Support, the Language Resource Center (LRC), and academic support for international students. Along with fielding admissions questions, this team also serves as a liaison with the Graduate School of Arts and Sciences housing office and the Harvard International Office.

Program Director

The Master in Architecture degree program has a Director who oversees administrative aspects of the program. Program Directors are students' main point of contact for issues such as taking a leave of absence or pursuing concurrent degrees; the Program Director's signature is required for these and for other circumstances. The Program Director is available to discuss any academic concerns a student may have or to resolve academic conflicts.

Academic Advising

Academic advisors are faculty members assigned to individual students, to advise and assist them in meeting the requirements of their degree programs. Faculty members post weekly office hours when they will be available to meet with students. Advisors can provide a meaningful relationship with students, but students must be proactive in initiating the contact. Advisor assignments for new students are posted outside the students' respective program offices during the orientation week. At any point in their studies, students who wish to change advisors should make this request to their program coordinator.

Peer Advisors

Started by students and supported and funded by the Office of Student Services, the Peer Advisor program matches returning GSD students with 5-10 incoming students from every program. Everyone will be assigned a Peer Advisor at orientation. In addition, Peer Advisors are there for new students all year long.

Personal Advising

The Dean of Students is available to discuss any concerns or difficulties a student has. If a student has a physical, learning or emotional disability (or suspects that he or she may have one), he/she is encouraged to make an appointment to speak with the Dean of Students.

Graduate Student Learning Support (GSLS)

Sometimes students come to the GSD who have previously been able to compensate for an undiagnosed learning disability. During their studies here, problems may surface that ultimately lead to a diagnosis of a learning disability, and subsequent treatment and counseling. The GSLS can provide neuropsychological assessment and strategic assistance with learning difficulties, and, when appropriate,

referral for neurological testing. Learning specialists can also work with students experiencing problems in executive functioning, time management and other academic issues. Students must first be referred by the Dean of Students.

Language Resource Center (LRC)

The Language Resource Center offers services to GSD students experiencing language difficulties. The LRC welcomes both native and non-native English speakers to work one-on-one with LRC staff in oral and reading comprehension, verbal communication, the writing process, public speaking, and any other language concerns.

Students with Disabilities

Students who have physical, learning, or psychological disabilities should contact the Dean of Students, who is also the GSD's Disability Coordinator, in the Office of Student Services. Students are encouraged to make contact as early as possible to allow for any preparation that must take place before the semester begins. Documentation should include a clinical assessment of the disability as well as any recommendations that would be helpful in determining accommodations at the GSD. The Dean of Students works with the student and instructors to identify how the GSD and the university can provide reasonable accommodations, and to advise the student of additional resources at the university. Academic departments and faculty have adapted their teaching practices to accommodate students with disabilities and the professionals that work with them.

Currently, two students enrolled in the M.Arch I program have differing degrees of hearing disability; the Harvard University Disability Coordinator's Office provides all necessary assistance to these students in each scheduled class or studio meeting, as well as all public events, at no cost to the students. In one case, assistance consists of one or more American Sign Language interpreters who accompany the student and help communicate with instructors and classmates; in the other, a CART (captioned audio real time) reporter accompanies the student whenever requested.

Financial assistance

The Office of Financial Assistance helps with financial aid applications, loan adjustments, work-study cards, and questions about billing.

Student Government

The Student Forum, funded by the annual student activity fee, is the GSD's student government body and is made up of officers from across the school's programs and representatives from each program and semester. They hold open town-hall-style meetings in the evenings, as well as meet with the Dean and the Program Directors of each department to address social and academic issues. The Dean of Students works closely with the Student Forum and also meets annually with student organizations.

The GSD's Events office advertises student-run events, and the school's student list serve announces student initiatives to the entire community. Student groups hold a fair at the beginning of each fall semester to advertise their activities and recruit new members.

Student Organizations

In addition to the Student Forum, the GSD had more than 45 student groups last year. The Student Forum currently provides annual funding to student groups. These organizations are established and

entirely run by members of the GSD student body. All students are encouraged to establish a new group that they feel might offer new knowledge and experiences to the GSD community. Guidelines for requesting sponsorship of a new student organization are available on the Student Forum website. Student groups active in academic year 2010-11 included:

American Society of Landscape Architects (Harvard University student chapter)	Japan GSD
Asia GSD	Korea GSD
Beer n' Dogs	Land GSD
Build Club	Landscape Lunchbox
Canada GSD	Latin GSD
China GSD	MDesS Club
Club MEDINA	The Mediterranean Society
Design Agent	My City, My Future
Design with Animals	National Organization of Minority Architecture Students (NOMAS)
DIY (Design Initiative for Youth)	New Geographies
DONATE to DO!	Out Design
European Design Circle	Planners Network
Greece GSD	Repurpose Group
Green Design	Student Lecture Series
Group for the Philosophy of Architecture	SoCA (Social Change and Activism)
GSD Christian Community	Student Lecture Series
GSD Real Estate Development Club (RED)	Student Wall
Harvard Urban Planning Organization (HUPO)	Trays
Housing GSD	Urban Mobilities
India GSD	Village Link
Inflatables	Women in Design
International Development and Urbanism (IDU)	"YES NO" Student Journal
Italian Society at Harvard GSD	Yoga GSD

In addition to the GSD's own student groups, the Harvard Provost's Office approved eight new university-wide student organizations last spring and will approve several more this fall. These university-wide groups include GSD students as officers and bring together students from across the University in affinity groups (Pakistani, Indian, Latin American, African American, Arab) and issues groups (global health, sustainability).

Curricular Opportunities for Student Research and Travel

The Research Advancement Initiative (RAI), chaired by Professor Hashim Sarkis, was created with the goal of integrating professional education with the academic pursuits of a research university and addressing emerging topics of common interest. In the spirit of promoting interdisciplinary research, this initiative also seeks to nurture opportunities for collaborative work within the GSD and between the GSD and other units at Harvard and elsewhere in the world. One of the key aims of this effort is to increase

the interface between faculty research and the academic programs, and between research and design. To that end, the GSD has established Research Laboratories. These labs house masters and doctoral students from the various programs working on both lab projects and their theses and dissertations, guided by faculty with shared research interests. In addition to undertaking research projects and supporting advanced student work, the labs will offer pro-seminar courses, build shared databases, and generate public forums and publications. Four labs have been launched: Social Agency, addressing challenges of social and economic development, disaster relief, and anticipatory planning and design; Responsive Environments, exploring increased interaction between design and inhabitation at different scales; New Geographies, addressing emerging larger-scale design questions around the relationship between the built environment and physical geography; and Sustainability in Design, interfacing between new scientific research on sustainability and design. In addition to their own research projects, these labs will occasionally work together on common endeavors. This past year, the labs collaborated on a project entitled "A School for the Year 2030," developed with the Harvard Graduate School of Education.

Many architecture students at the GSD are able to travel either domestically or internationally with one or more of their option studios. The Architecture Department and its option studio instructors frequently seek and obtain funding from outside donors to offset the cost of travel, so that participation in studio trips does not present a financial hardship to students. In addition, Harvard University provides 24-hour worldwide emergency medical and evacuation assistance for Harvard students traveling abroad on University business. International studio travel typically lasts between seven and ten days. In the past two years, option studios sponsored by the Department of Architecture have traveled to New York, Chicago, Detroit, London, Paris, Rome, L'Aquila (Italy), Tokyo, Osaka, Beijing, Chongqing (China), and Sao Paulo. Currently, in academic year 2011-12, studio travel to New York, Beijing, Hangzhou, Seoul, Istanbul, and other cities is planned.

In addition to traveling option studios, this year the Dean Mostafavi and the Department of Architecture have introduced a new approach for exposing students to international environments as part of the design curriculum: a semester-abroad program, centered on studios taught by architects based in cities around the world. This fall (2011), the first such semester-abroad program is being launched in Paris, with nine architecture, two urban design, and one landscape student currently enrolled in an option studio taught by Paris-based architect Anne Lacaton, as well as in academic seminars taught by GSD Professor Antoine Picon and Visiting Professor Sebastien Marot. Students, living in rented apartments and working in studio space provided by Le Laboratoire, will spend September through December in Paris. The fall 2011 Paris semester-abroad program will be followed by a spring 2012 program in Tokyo, with a studio led by architect Toyo Ito (dealing with the aftermath of the Tohoku tsunami) and seminars by Professor Ken Oshima (University of Washington) and others; student housing and studio space have been generously offered by the Takenaka Corporation in Tokyo. Pending favorable evaluations of this year's programs from student and faculty participants, future semester-abroad offerings may include a semester in Rotterdam with architect Rem Koolhaas, a semester in Beijing with landscape architect Kongjian Yu, and a (non-option studio) group-thesis semester in Basel, Switzerland with architects Jacques Herzog and Pierre deMeuron.

Extracurricular Opportunities for Student Travel, Research and Outreach

Over the years, numerous donors have established endowed awards and traveling fellowships at Harvard University and at the Graduate School of Design. These include the Wheelwright Fellowship, the Julia Appleton Fellowship, the Druker Prize, and more. A full list of GSD awards and fellowships available to students is seen online at <http://www.gsd.harvard.edu/#/academic-programs/architecture/fellowships-prizes-travel-programs.html>. A list of non-Harvard fellowships and awards may be seen online at <http://internal.gsd.harvard.edu/cgi-bin/prizes/index.cgi?filter=external&tabular=1>.

One of the most sought after off-campus educational opportunities for our students is a one-semester internship at the Renzo Piano Building Workshop in Paris, France, or Genoa, Italy. This program is not for credit, and requires the student to take a leave of absence from the GSD. This internship is awarded to one M.Arch I or M.Arch I AP student who, prior to the beginning of the internship, has completed the

core program but has not yet begun his or her thesis. Candidates for the internship apply and are selected by a faculty committee for recommendation to RPBW. Under the tutelage of a senior architect, the intern will spend approximately six months at the RPBW. The experience involves a combination of work and study, including practical training, seminars, and documentation. Students receive a stipend during their time at RPBW.

The Harvard Graduate School of Design supports student-initiated research, community service internships, and other design-related opportunities. GSD students select their own projects, which vary in geographical location and length of time. Two of the more popular programs are:

Penny White Student Projects Fund. Winifred G. (Penny) White had just completed her second year of the MLA program when she died suddenly of leukemia in 1976. In her memory, her family established a fund within the GSD to offer financial support for student projects. The projects are to “carry forward Penny's ideal of a culture which emphasizes a close relationship between people and nature in a cohesive living environment.” All students enrolled at the GSD are eligible for support for any type of project that addresses the broad objectives of the fund. Past awards have ranged from \$200 to \$2750. The objectives of the Penny White Student Projects Fund are: to promote creative thought by providing students with an opportunity to pursue their own projects; to promote the development and dissemination of a land ethic which integrates the preservation and enhancement of natural systems through studies of design, ecology and natural science; and to provide opportunities for students to diversify their graduate study into areas which might not be available within the normal academic curriculum, in fields such as geomorphology, microclimatology, and soil mechanics.

The Community Service Fellowship Program (CSFP) provides opportunities for GSD students to extend their design education beyond the studio walls of the Graduate School of Design through direct involvement with projects that address public needs and community concerns at the local level. Summer Internship CSFP Fellowships are 10 week paid summer internships with local community organizations, state and federal agencies and non-profit organizations. GSD students may develop their own projects and fellowship sites. International Travel CSFP Fellowships provide funding to help GSD students travel to overseas destinations to perform community service throughout the year, in projects of varying durations. Funding is focused upon helping students with travel expenses. All GSD students who have appropriate work experience and who will be returning to the GSD in the fall are eligible to apply for funding. Past awards have ranged from \$250 to \$7000.

Other student led opportunities for learning outside the classroom include:

The Student Wall. Allotted in weekly increments, students (or groups of students) assume responsibility for adorning the southern portion of the Gund Hall lobby and gallery with examples of their work. By no means are these exhibits limited to design. In the past, students have displayed drawings, paintings, sculpture, photography, and found objects on this wall.

Design Charrettes. Sponsored by student groups and occasionally by individuals or groups outside of the school, these short competitions usually last no longer than 24 - 48 hours. Winning entries in previous charrettes have received cash awards, merchandise vouchers, or the opportunity to construct the winning design.

Teaching Opportunities

Opportunities for GSD students to engage in teaching exist through the Career Discovery and Project Link programs. Career Discovery is an intensive six-week summer program for people of all ages considering a career in design. Participants in the program commit themselves to a path of intensive studio work, lectures, workshops, and field trips through which they experience what education and work are like in the design and planning professions. Student teaching positions are available as studio and

drawing instructors. Project Link is an intensive four-week program that seeks to immerse rising high school sophomores, juniors, and seniors into the world of design. Project Link was created, planned, and initiated by GSD students in the fields of Architecture, Landscape Architecture and Urban Planning. It is a student-run and university-funded opportunity to extend an inspiring hand into Boston communities to help provide design opportunities to underprivileged and talented high school students.

Student Participation in Professional Societies

The GSD sends 4-6 African American students each year to the annual NOMA (National Organization for Minority Architects) conference. The GSD has worked with NOMA leadership to create a student chapter of NOMA ("NOMAS").

Career Services for Architecture Students

The GSD Career Services Office offers a comprehensive set of programs and opportunities for architecture students. These include assistance with resume and interview preparation; workshops on developing a professional portfolio; design sheet and portfolio critiques; a Virtual Career Fair in January to help students connect with competitive summer internship opportunities; and an annual Career Fair in the spring, attracting national and international design firms who hire students for summer internships and full time jobs. An important priority is to provide students with access to job opportunities and alumni contacts. All students have a personal account in our career management system (e-Recruiting), which includes a database of over 3,000 employers. Students can view internship and job postings; employer descriptions; and GSD alumni contacts through this system. Recent employers who have recruited our architecture graduates include AECOM, Gensler, HOK, The Jerde Partnership, Pei Cobb Freed & Partners, Perkins Eastman, Perkins+Will, Robert A.M. Stern Architects, RTKL, SOM, and SWA Group.

The Career Services website (<http://www.gsd.harvard.edu/#/gsd-resources/career-resources>) is geared towards students. It includes both internal links to GSD-sponsored internships and fellowships and external links to organizations such as NCARB, IDP, AIA, AIAS, ACSA, e-Architect, ArchVoices, and many others; students are encouraged to explore these resources on matters of licensure and career planning. Details about web-based career development resources at the GSD are found in section 2.4 "Public Information".

Meryl Golden, Director of Career Services at the GSD, is also the School's Intern Development Program Coordinator, having served in this role since 2005. She attends NCARB's IDP Coordinator Conference every year – most recently in July 2011 – to ensure that architecture students at the GSD receive accurate information about the program. Golden regularly receives updates from NCARB through a professional portal for IDP coordinators, and she sends a weekly e-newsletter to students including internship and career program notices. She also holds two or more presentation sessions each semester to familiarize groups of students with the IDP process. Students are encouraged to meet with the state IDP coordinator and NCARB representatives at our annual GSD Career Fair. Golden coordinates with the Registrar and the Chair of Architecture to make sure that completed IDP forms are submitted to NCARB. She offers a presentation for architecture students with very focused information.

In addition to seeking internships and employment with privately owned firms, GSD architecture students are encouraged to consider participating in the Community Service Fellowship Program. The program offers students opportunities to gain professional experience in a wide range of settings such as community and nonprofit organizations, and federal and state agencies. Several fellowships involve teaching design skills to diverse student populations. Recent fellowships awarded to GSD architecture students include the Asian Community Development Corporation; A Better City; the Beverly School for the Deaf; Youth Build Boston; and the United Teen Equality Center. See <http://www.gsd.harvard.edu/#/gsd-resources/career-resources/community-service-fellowship.html> for further information.

1.2.2. Administrative Structure & Governance

Administrative Structure: Harvard University

Harvard's leadership is responsible for the strategic vision for the University. President Drew Gilpin Faust leads Harvard, and is the 28th President of the University. President Faust is the Lincoln Professor of History in Harvard's Faculty of Arts and Sciences. The Office of the Provost fosters collaboration across the University and manages changes in policies and practices that affect the academic life of the university as a whole.

The Harvard Corporation – known formally as the President and Fellows of Harvard College – is the University's executive board. It is the smaller of Harvard's two governing boards; the other is the Board of Overseers. The Board of Overseers is elected by graduates of Harvard University and Radcliffe College. The Board relies on its Standing and Visiting Committees to keep informed about educational policies and practices of the University and each of its schools; these committees provide advice to, and approve important actions of, the Corporation (further information about the GSD's Visiting Committee appears later in this section). Both the Corporation and Overseers must approve major teaching and administrative appointments.

Administrative Structure: Graduate School of Design

The Graduate School of Design is one of twelve semi-independent graduate and professional schools within Harvard University. The faculty of each school is headed by a dean who is appointed by the President of the University and is responsible for overseeing all academic and administrative functions of the school, including fundraising, finances, and internal administration.

The Faculty of Design is organized into three academic departments: Architecture, Landscape Architecture, and Urban Planning and Design. Each department is headed by a member of the faculty who is appointed for a specific term to serve as Chair and is responsible to the Dean for advancing the respective academic field and addressing the needs of the field through attracting the most able faculty members and visiting design critics for instruction, scholarship and professional studies. The chairs have responsibility for courses of instruction and for faculty hiring and development. Each degree program has a Program Director. The Program Director in Architecture holds a faculty appointment in architecture and is responsible for coordinating the following: recruiting students, reviewing and admitting applicants, advising students, approving individual study plans and independent studies, recommending or requiring courses of study, coordinating instruction, acting on petitions for student leaves of absence, course substitutions or waivers, and recommending the award of degrees.

Each student at the Graduate School of Design is a candidate in one of the ten academic programs: M.Arch I and M.Arch II (administered by the Department of Architecture); MLA I and MLA II (administered by the Department of Landscape Architecture); MAUD, MLAUD, and MUP (administered by the Department of Urban Planning and Design); MDesS and DDes (administered by the Advanced Studies Program); and the PhD program (jointly administered by the GSD and the Faculty of Arts and Sciences). Two members of the architecture faculty co-chair the MDesS and Doctoral committees, assisted by faculty from each of the three departments.

The Dean's Executive Committee advises the Dean on all administrative policies and the operations of the School. Chaired by the Dean of the Faculty of Design, the Committee ordinarily includes the Department Chairs and MDesS and Doctoral co-chairs, as well as the administrative deans. The Executive Committee meets monthly to consider administrative policies for the School.

Members of the faculty holding positions as Professor and Professor in Practice serve as members of the Senior Faculty Council. Among its duties, the Council serves as the standing committee on appointments.

Governance and curriculum development

Several faculty committees have been established at the GSD on an *ad hoc* basis for review of curriculum over the years. Committees reviewing aspects of the Master in Architecture program report to and work with the Chair of the Architecture Department – also consulting with others, including students, as appropriate. The full voting faculty of the GSD must review and approve any curricular change proposed by the Department of Architecture or by other departments. Information on the work of recent committees for curriculum review and development in the M.Arch program are found in section 2.2.3 “Curriculum Review and Development”.

Several faculty committees exist to review cross-school issues. The Committee on Development and Outreach works to identify key investment priorities for the school and to evaluate outreach activities -- including publications, exhibitions, conferences, lectures -- as they relate to both the academic and financial objectives of the school. The Committee on Faculty Personnel, chaired by Prof. Antonio Jose Gomez-Ibanez, is looking at best practices for hiring and promotion, reviews, workload, reporting, norms for avoidance of conflicts of interest and commitment, and junior faculty development. The Committee on School-Wide Instructional and Curriculum Issues is charged with addressing studio instruction issues raised by the *Studio Study* (May 2004), as well as issues involving school-wide, rather than department-specific, instructional and curriculum matters raised at previous faculty and student-faculty meetings.

The Student Forum is the governance body elected by students that works with faculty and administration to address a variety of issues within the school. The Academic Affairs subcommittee is responsible for remaining in touch with students about concerns related to curriculum, course scheduling, and other academic matters. This group of students comprises the student membership of the Student Affairs Committee, which also includes the faculty program directors from each of the school’s programs, the assistant dean for academic services, the dean of students, and the executive dean. The agenda is set by the students and discussion centers on whatever issues they feel are most pressing. The Student Forum as a whole has lunch meetings monthly with the dean. They set the agenda and raise any administrative or academic issues that they wish. The administration takes these issues seriously and works with the Forum to implement agreed upon changes.

The structure of the GSD Student Forum is flexible, and has evolved over the years to reflect the primary interests of the student body. Today, the Student Forum is headed by nine elected officers who oversee the forum’s primary areas of initiative: academics, events, infrastructure, alumni relations, internal and external communications, and funding. In order to keep informed of students’ primary concerns, the Student Forum officers rely on volunteer class representatives from each of the GSD’s academic programs – Architecture, Landscape Architecture, Urban Design and Planning, Master in Design Studies (MDesS), and Doctor of Design (DDes). The Class Representatives determine the primary issues of their classmates, and set the agendas for meetings with departmental heads. The Student Forum Officers and Class Representatives come together to form committees centered on specific school-wide issues. These committees function sometimes as support for the Officers, and sometimes as “think tanks” for solving persistent issues such as the faculty advising system, student contact with alumni, and the lack of interdisciplinary courses at the GSD. The Student Forum committees are flexible, and can be formed and disbanded by the Officers depending on current student-wide interests.

In addition, every student is asked to complete an evaluation of each of his or her courses at the end of every term. These are collected by the departments, kept available (in summary form) for reference by students, and referred to by the department chair in consultation with faculty for improving teaching, and they are also considered in reappointments of visitors and in promotions of faculty members. (A sample course evaluation form is included in Appendix 10)

An Academic Affairs Committee is composed of students who serve on the Student Forum, the faculty program directors, and several administrators. Students set the agenda for these meetings and discuss whatever concerns they feel are appropriate. Regular meetings with the chairs and program directors give students the opportunity to voice their concerns in open discussions. Also, occasional Student Surveys are conducted. Focus groups have also provided students with opportunities for giving feedback.

Student representatives also meet annually with the Visiting Committee, and participate in faculty presentations on the curriculum to the Alumni/ae Council. Students do not sit on faculty search or other governance committees. To help the faculty remain cognizant of student opinion and perceptions, the chair schedules open discussions with students throughout the academic year.

GSD Visiting Committee

The Visiting Committee of the Graduate School of Design meets annually with the dean, faculty, senior staff, and students, and submits an evaluation to the University's Board of Overseers. It consists of approximately twenty design practitioners, academics, planners, developers, legal experts, critics, artists, or other professionals with an interest in the GSD and the design and planning fields. The Committee's visit generally includes discussion and review of the school's long-term goals and objectives; the current status of programs, faculty, students, and resources for support; in-depth focus groups on issues or programs of current concern; visits to studios; meetings with the chairmen and faculty of each department; a luncheon with members of the Student Forum; and a wrap-up meeting with the dean and chairmen. Recent meetings have focused on the core component of the professional degree programs, history and theory, building and environmental technology curriculum, information technology, and other subject areas of the professional programs. (The list of current Visiting Committee members is included in Appendix 8.)

Within the University administrative structure, the independence of the visitation process is particularly important. Visiting Committees answer directly neither to the Corporation nor to the administration. Visiting Committees may obtain and analyze any information they request about a school. The findings of a Visiting Committee are brought to the attention of the Overseers, though their powers are limited formally to calling these findings to the attention of the President and the deans of the Faculties, and it is up to these senior academic officers to determine how they are to be acted upon.

GSD Alumni/ae Council

The 32-member GSD Alumni/ae Council, which represents the approximately 7,500-alumni/ae body, meets semi-annually to learn about the school and its programs. The two-day program offers opportunities for discussion and informal feedback; it also provides a chance for current students to meet the Council members. At each meeting, the GSD Student Forum gives a presentation to the Council, which is followed by a lively discussion on ways that the Council can help in advising students on their career paths.

1.2.3. Physical Resources

General Description

Harvard is particularly strong in the physical and information resources it provides to its students and faculty. The immediate resources of the school are housed in the main classroom building Gund Hall (48 Quincy Street), an adjacent office building at 7 Sumner Road, and three recently acquired houses at 20 Sumner Road, 40 Kirkland Street, and 42 Kirkland Street. Floor plans for each of these buildings are provided in Appendix 11.

About Gund Hall

Designed by Australian architect and GSD graduate John Andrews, Gund Hall opened in 1972. Major gifts to finance the new building were received from the George Gund Foundation; the Gund family; John

L. Loeb, SB'24, LLD'71 (hon); GSD alumni/æ and friends; and the Office of Education of the United States Department of Health, Education, and Welfare.

Gund Hall offers students a stimulating environment in which to work, including studio and office areas for approximately 600 students and more than 100 faculty and staff; lecture and seminar rooms; computer facilities; a public exhibition gallery; a cafeteria; model, metal- and woodworking, and prototyping shops; robotic and other CNC fabrication laboratories; Piper Auditorium, which accommodates 400 people; and the Frances Loeb Library, containing one of the largest collections in the world of material relating to architecture, landscape architecture, planning, and the fine arts. The yard area is used for basketball, volleyball, and picnics; as an exhibition area for class projects and visiting artists; and as the setting for commencement ceremonies. The central studio space extends through five levels under a stepped, clear-span roof that admits natural light and provides views toward Boston. The dramatic facade and extensive glass surfaces make an eloquent statement about the design excellence and professional creativity for which the school is known. Some administrative offices and offices for doctoral students, as well as smaller seminar rooms, are located near Gund Hall on Sumner Road and Kirkland Street.

Recent Improvements to the Facilities:

- In September 2010 the school acquired approximately 23,000 square feet of space in three wood-frame houses located within a block of Gund Hall. Extensive renovation work took place over the summer of 2011 so that student spaces would be ready for the start of the fall 2011 semester. Doctoral students have workstations in 20 Sumner Road, and MDesS students are housed in 40 Kirkland Street. Each house also has two seminar rooms for small classes and meeting space. Faculty and staff offices may be added over the course of the next few years.
- A 7,000 square feet expansion of the lower level of Gund Hall took place in 2003 in order to increase space for the enhanced fabrication labs and support facilities. The space allocated to fabrication has more than doubled from the original shops' 2,400 square feet to 5,790 square feet. Robotic arms were added to the fabrication labs in 2008.
- Over the summer of 2011, the basement workshop and laboratory spaces were again renovated to update or improve the operation of the woodshop, the project room, welding and miscellaneous metals shop, and the CAD/CAM laboratory. The modernized space has new mechanical, lighting, and electrical, and plumbing systems. The new air handling unit and exhaust systems servicing this space use direct digital controls to monitor the airflow needed for various exhaust requirements. In addition, the woodshop has a dust collection system and the laser cutters have independent exhaust systems for particulate control. The GSD Fabrication Lab was updated with the purchase of a large, powerful CNC router with tool changer and vacuum bed, significantly increasing machining ability. Simultaneously, procedures for use of the various machines have been reviewed and updated.
- The studio furniture modernization project commenced in the summer of 2010, upgrading 163 student workstations to support the evolution from analog to digital media for architectural design and representation. This work included adding a kitchenette in the middle of the studio and an ADA accessible bathroom. After the initial installation, students and faculty were surveyed and slight modifications were made to the design of 193 new desks installed during the summer of 2011. The project to upgrade all student workstations in Gund Hall will continue in 2012.
- Relocation of Computer Resources to space renovated specifically for their purpose, which allowed for improved user support and created flexibility to respond to changing technology.
- The library group has made many modifications to its space to respond to students' needs for meeting and computer use space. During the summer of 2011, a new classroom space was carved out of the library's ground floor footprint to meet the increased demand for classroom, meeting, and review spaces. The basement Visual Resources Department has been reconfigured to incorporate the library's Materials Collection (which, though administered by the library, had previously been housed in a separate space and operated on a different schedule).

- Improvement to teaching spaces is an ongoing commitment. Most teaching spaces now contain a permanently mounted video projector. The largest classroom with fixed seating (Gund 111) provides electrical outlets throughout for students using laptops.
- In 2010 and 2011, the School replaced three of its six air handling units with more efficient units, in an effort to reduce energy and GHG emissions and to provide a higher quality interior climate. The remaining units are scheduled for replacement in 2012 and 2013.
- In recent years, under the guidance of Professor Christian Werthmann, the GSD has experimented with installing green roof plantings over 25% of its studio roof area.

Hardware, Software, Networks, and Other Computer Resources

The Computer Resources Group maintains an environment in which information technology is available and easily accessible to all members of the GSD community. It provides basic computers, advanced workstations, and a series of peripherals interconnected in a high-speed local area network (both wired and wireless) and to Harvard University's Internet backbone. Every member of the GSD community has access from his/her desk to the GSD network for communications, central disk storage and input/output facilities, and a wide range of software and services, including access to the Harvard On-Line Library System (HOLLIS) and other databases. The network supports hardware running primarily Windows and Macintosh operating systems.

The GSD maintains small number of clusters of publicly accessible computers, most of which are high-performance workstations for advanced graphics and intensive computing work. They are heavily used, so it is currently required that students provide their own laptop computers capable of running advanced computer aided design software. A separate color display monitor that can be permanently attached to the student's desk is strongly encouraged. Typical hardware recommendations and network connection requirements are published by the Computer Resource Group and are mailed annually to all students, both incoming and returning.

The GSD provides all members of the GSD community with free access to a wide range of software, including geometric modeling, rendering and animations, geographic information systems, qualitative and quantitative analysis, programming, database management, project management, word- and image-processing, and desktop publishing.

Public facilities, accessible 24 hours a day, include high-end workstations, digital video and multimedia equipment, a number of slide and flatbed scanners, large format color plotters, high-quality color printers, as well as computer-controlled cutting and milling machines in the CAD/CAM workshop facilities. All classrooms have network connections and large screens and overhead digital projectors for projecting directly from computers.

The Computer Resources Group maintains the network and GSD-owned hardware, installs software, and provides hardware and software support to the GSD community. The group also provides research capabilities in computer graphics and geometric modeling, geographic information systems, and computer-aided manufacturing. General technical support for GSD-owned software is provided by qualified students serving as software application assistants. These application assistants offer regularly scheduled instruction during the academic year to interested members of the GSD community.

GSD Model and Prototyping Shops – Fabrication Laboratory

The ability to test design ideas through accurate scale models and full-size prototypes of components is an essential part of our teaching philosophy. The shop-supported introduction of materials and technology begins in the core program, but is carried through during the entire course of study. It is present in all core and option studios as well as in the core technology courses. For more advanced

students the school also offers highly specialized courses in digitally controlled design and fabrication techniques.

The recent and ongoing expansion of the shop facilities is geared to support a wide range of fabrication techniques. The woodshop is equipped with state-of the art woodworking tools that support work in solid wood, wood-based materials as well as plastics. In the fall of 2005 the school opened a well- equipped metal shop to students, including welding facilities and machines for working with sheet metal and bar stock. A structural testing machine is available to test the mechanical properties of small specimens. The Fabrication Lab contains a wide range of computer-numerically controlled (CNC) equipment. A variety of digitizers and 3D scanners can aid students to capture the shape of complex three-dimensional objects. Six laser cutters and two rapid prototyping machines, including a new state-of-the-art ABS 3D printer, are used to produce high-quality models directly from computer files. Two large format CNC routers and a CNC milling machine are used to machine model and component shapes from sheet stock and solid blocks measuring up to 4 x 8 feet.

The GSD shop facilities are open to all students who have participated in one of the required machine-specific tutorials that are provided throughout the year. Hands-on assistance for students is provided by a shop supervisor and the large number of trained student monitors. The shop management is directed by a faculty committee, with committee members being directly involved in studio as well as technology courses that implement the pedagogical integration of the shops into the curriculum. Our extensive support system includes online tutorials and documentation, encouraging creative experimentation and exploration, as well as understanding materials, construction and structures from first-hand experience.

Safety, Accessibility, and Identification of Problems

Safety and accessibility are fundamental priorities for any educational facilities – even more so for an institution like the GSD, whose mission is to train future generations of building design professionals. All building areas within the GSD are in compliance with code as of the date of their most recent renovation. Code and regulatory review are included in all renovations to the physical plant. All but one of the nineteen teaching spaces comply with ADA regulations (adaptation of the non-compliant space is not readily achievable, as 7 Sumner Road does not have an elevator).

Formal and informal meetings between faculty, students, and technology staff occur regularly; the student government annually elects a designated ‘infrastructure representative’ to communicate directly with the Director of Computer Resources and Director of Building Services.

1.2.4. Financial Resources

Information on financial resources of the Department of Architecture appearing on the following page include (in columns from right to left):

- Actual data on Fiscal Year 2004-5 (the last year reported in our previous APR);
- Actual data on Fiscal Years 2009-10 and 2010-11 (the two past years);
- Budget for the current Fiscal Year 2011-12; and
- Forecast data for Fiscal Year 2012-13.

Sources of revenue and expenses are specific to the Department of Architecture and do not include information about School-wide financial resources. Tuition revenue is calculated only for students enrolled in M.Arch I, M.Arch I AP, and M.Arch II programs, and does not include tuition revenue from MDesS and DDes students (who are not assigned to one of the School’s three departments but represent a considerable portion of the enrollment of advanced electives taught by Architecture Faculty). The Department is eligible to benefit from a portion of the GSD’s Endowment Revenue; however, information about endowment revenue is not available at this time.

Department of Architecture
Accreditation Summary: Financial Resources

	FY13F	FY12B	FY11A	FY10A	FY05A
Revenue ⁽¹⁾					
Tuition	\$11,613,624	\$11,166,946	\$10,364,009	\$10,263,170	\$7,656,875
Sponsored	\$93,518	\$91,237	\$103,692	\$63,196	\$22,000
Gifts	\$128,125	\$125,000	\$243,570	\$138,250	\$229,804
Faculty Support from President & Provost	\$237,083	\$231,300	\$219,276	\$115,751	\$156,609
Other	\$0	\$0	\$0	\$654	\$811
Total Revenue	\$12,072,349	\$11,614,483	\$10,930,548	\$10,581,021	\$8,066,099
Expenses					
Teaching/Research (Dept. Faculty & Visitors)	\$4,300,458	\$3,932,483	\$4,110,226	\$4,113,160	\$2,915,651
Student Assistants					
Research Assistants	\$80,118	\$84,135	\$61,044	\$95,175	\$125,952
Teaching Fellows	\$106,939	\$87,614	\$108,969	\$122,051	\$100,161
Subtotal	\$4,487,515	\$4,104,232	\$4,280,239	\$4,330,387	\$3,141,764
Total Architecture Staff	\$299,732	\$291,002	\$273,317	\$258,891	\$210,385
Fringe Benefits on all Salaries	\$1,410,778	\$1,052,291	\$1,014,333	\$925,223	\$722,258
Total Salaries and Fringe Benefits	\$6,198,025	\$5,447,525	\$5,567,889	\$5,514,501	\$4,074,407
Other Department Expenses					
Financial Aid Grants	\$5,700,633	\$5,334,439	\$4,882,690	\$4,628,831	\$2,446,612
Supplies+Materials	\$77,578	\$74,594	\$49,002	\$58,195	\$60,082
Equipment, Furniture+Fixtures	\$8,620	\$8,288	\$15,089	\$8,250	\$23,622
Space, Operations and Utilities	\$123,037	\$118,305	\$744	\$1,546	\$0
Travel+Entertainment	\$765,800	\$736,346	\$771,560	\$720,119	\$533,575
Professional and Other Svcs	\$57,173	\$50,392	\$47,468	\$86,096	\$111,130
Telephones+ Telecommunications	\$20,852	\$20,050	\$21,516	\$22,295	\$15,467
Reproduction Costs	\$14,987	\$14,411	\$13,281	\$48,495	\$16,425
Miscellaneous Expenses	\$90,802	\$87,310	\$102,030	\$123,670	\$83,858
Subtotal Other Expenses	\$6,859,482	\$6,444,135	\$5,903,380	\$5,697,497	\$3,290,771
Total Department Expenses	\$13,057,507	\$11,891,660	\$11,471,269	\$11,211,997	\$7,365,177
Allocated Expenses (as a % of students)					
Space Operations + Maintenance	\$1,604,028	\$1,497,207	\$1,750,301	\$1,680,485	\$1,345,295
Frances Loeb Library	\$1,081,474	\$1,009,453	\$1,050,453	\$1,032,176	\$1,008,102
Computer Resources	\$750,153	\$700,196	\$711,768	\$761,829	\$786,749
Student Services	\$1,077,065	\$1,005,338	\$1,031,987	\$818,004	\$516,946
Academic + Admin. Services	\$5,267,305	\$4,938,593	\$4,000,996	\$2,920,719	\$3,148,272
Subtotal, Allocated Expenses	\$9,780,023	\$9,150,788	\$8,545,506	\$7,213,214	\$6,805,364
Total Dept. + Allocated Expenses	\$22,837,531	\$21,042,448	\$20,016,774	\$18,425,212	\$14,170,542
Arch Students FTTEs	312.1	292.4	275.6	284.1	260.3
GSD FTTEs	702.0	676.6	595.6	571.6	529.9
PhD Students	30.0	30.0	30.0	28.0	28.0
Total FTTEs, incl Phd	732.0	706.6	625.6	599.6	557.9
% Arch Student FTTEs/Total FTTEs	42.6%	41.4%	44.1%	47.4%	46.7%
Allocation - Per Architecture Student	\$73,174	\$71,955	\$72,630	\$64,855	\$54,439
Capital Expenditures (incl. acquisition in FY11)					
GSD Capital Expenses per Student	\$9,177	\$12,283	\$29,139	\$1,133	\$3,189
Total Expenditures per Architecture Student	\$82,350	\$84,237	\$101,769	\$65,988	\$57,628

(1) Endowment revenue available to the Architecture dept. is credited at the school-level and is not included here as a revenue source.

1.2.5. Information Resources

The Frances Loeb Library: Overview

The France Loeb Library (www.gsd.harvard.edu/library) is the library for the Graduate School of Design within Harvard University. The Library contains one of the finest collections in the world documenting the fields of architecture, landscape architecture, and urban planning and design. The library, which began in 1900, supports the educational programs, curriculum development and research activities of the Harvard Graduate School of Design as an integral component of the School's mission to prepare and advance individuals in professional and academic careers concerned with the making of built environments. The Library's strengths (twentieth-century architecture, city and regional planning, American domestic architecture, nineteenth-century U.S. park and cemetery design and twentieth century landscape design) are supplemented by subject areas that support past and current curriculum needs. Together with the resources distributed throughout the Harvard University Libraries, the Frances Loeb Library provides access to a comprehensive collection documenting the fields of architecture, landscape architecture, and urban planning and design.

Institutional Context and Administrative Structure

The library reports to the Dean of the GSD, but is also part of a network of libraries across the Harvard University campus that includes the Harvard College libraries, as well as the professional school libraries and numerous specialized collections across Harvard's campuses.

The Library is structured into the following departments:

- Collection Resources and Access, consisting of a Librarian for Collection Resources and Access, a Cataloger, an Acquisitions Assistant, a Serials Assistant, a Reserves Assistant, and a Billing and Reference Assistant; this unit oversees collections, acquisitions and cataloging, and access to the library's collections.
- Conservation, consisting of one Conservator; the unit provides conservation and preservation support for all the collections.
- Library Information Systems, consisting of a Head of Library Information Systems and Instructional Technology, and an Imaging Lab Coordinator/Photographer; the unit is responsible for the digitization of collections, computer support, and instructional technology for the school.
- Curriculum Integration, consisting of a Research and Instruction Services Librarian working in conjunction with other library staff; this unit supports the research of the faculty and students at the GSD.
- Special Collections/ Visual Resources/ Materials Collection, consisting of a Special Collections Librarian, and an Archivist, a Head of Visual Resources, a Visual Resources Cataloger, and a Materials Collection Assistant. This unit is responsible for the rare books, archival collections, visual collections, and the materials collections.

The above departments are overseen by the Librarian/Assistant Dean for Information Resources, with one staff assistant.

The Librarian reports to the Executive Dean of the Graduate School of Design. She is also the Assistant Dean for Information Services and a member of the GSD's senior administrative staff, who advise the Dean, the Executive Dean, and the Executive Council on administrative matters. The following professionals report to the librarian: Librarian for Collection Resources and Access; the Conservator; The

Head of LIS; the Head of Research and Instruction Services; the Head of Special Collections; and the Head of Visual Resources. The library's Administrative Assistant also reports to the Head librarian.

Library Staff

Since the arrival of Ann Whiteside as the new head Librarian in August 2010, the Library has been analyzing its strengths and identifying new areas of growth, including the staffing. In academic year 2010-11, Whiteside oversaw a staff reorganization, and she is assessing the staffing needs of the library at the time of this report. The staff reorganization involved merging some previously distinct departments of the library in order to provide better overall service to library users. The circulation, collections, and technical services departments are now one team (Collection Resources and Access); the Special Collections and Visual Resources Departments are now one unit that also combines the Materials Collection. Merging special and visual collections makes sense because much of the Library's visual content is more like special collections material, and the Materials Collection is more like archival materials than books and print journals. The Curriculum Integration Group is made up of the Librarian for Research and Instruction, with colleagues from LIS, Collections, and Special Collections/Visual Resources/Materials Collection. While we are in the midst of our own reorganization, the greater Harvard Library system is also undergoing a Provost-mandated transition that is intended to bring all the Harvard libraries together. The goals of this transition include a better understanding of shared services and collections.

The library has eight professional librarians (including the head librarian and the Head of Instructional Technology and Library Information Systems), one professionally trained conservator, and a support staff of seven library assistants. The library suffered staff cuts during a 2009 budget crisis, losing three positions (professional and support staff). All professional librarians have an MLS degree. Four of the support staff are also currently enrolled in an MLS degree program or have recently completed their degree. All jobs in the library have written job descriptions, which are reviewed on an annual basis, and performances are evaluated and goals for the coming year are set annually as well.

As with all professional librarians and support staff at Harvard, there are ample opportunities for professional development and continuing education. Working with the Human Resources Department at the GSD, professional librarians are able to receive funding each year for attendance at conferences and workshops. Salaries are commensurate with education and experience, and meet or exceed market expectations in the region.

Library Collections

The library's collections are multilingual and cover a wide range of geographic and topical subjects. The collections include books, periodicals and serials, visual materials (digital images, DVDs, videos, maps, photographs), rare books, archival collections, and a materials collection. The library is particularly strong in its coverage of twentieth-century architecture, city and regional planning, American domestic architecture, nineteenth-century U.S. park and cemetery design and twentieth-century landscape design. The library collects in its major areas at the comprehensive research level, and on related subjects at a study or basic level. The library's collections are complemented by holdings at other Harvard university collections, such as the Map Collection and the Fine Arts Library of the Harvard College Library, which covers pre-nineteenth-century architectural history and theory.

The library has an extensive Special Collections / Visual Resources / Materials Collection that includes analog and digital formats (noted above). The library holds fifty-seven archival collections, including the working library and photograph albums from H.H. Richardson's office, the papers of Josep Lluís Sert, the Hugh Stubbins Archives, a selection of projects from Edward Larrabee Barnes, the papers of developer Joseph Wasserman, and the collected papers of Alison and Peter Smithson (additional materials are listed online at www.gsd.harvard.edu/#/loeblibrary/collections/special-collections/collections.html). The Special Collections Department also holds the library's Le Corbusier Research Collection, GSD thesis documents, rare books, and other manuscript materials. An increasing portion of the library's special collections materials is housed at the Harvard Depository Library at Southborough, Massachusetts;

however, material can be delivered upon request within 24 hours. This group, in conjunction with Library Information Systems, is also responsible for coordinating the traditional archiving role of the library for electronic data created at the school.

The Visual Collections contains an impressive number of digital images of the built environment, photograph collections, both historical and contemporary, and selected maps and plans related to the curriculum at the GSD. The Materials Collection is a physical collection of material samples available for use in teaching and study in the context of research.

In addition to print and digital materials that the library acquires, the library provides access to a multitude of reference sources and access to thousands of databases in electronic form through the University's HOLLIS Plus website. The Avery Index to Architectural Periodicals, Art Abstracts, and Applied Science and Technology Abstracts are among the HOLLIS Plus resources sponsored by the library that are available to students and faculty at all times from any location.

The library catalogs books and other printed materials in OCLC, following current library standards such as AACR2 and The Library of Congress Classification System and LC Subject Headings. Visual materials and special collections materials are cataloged in several Harvard-wide systems: VIA catalog (Visual Information Access – see via.lib.harvard.edu/via/), a web-based union catalog of Harvard's visual collections from libraries, archives, and museums; OASIS (Archives and Manuscript Finding Aid Catalog – see oasis.lib.harvard.edu/oasis/), following national standards such as CCO, DACS, the AAT and LC Subject Headings. The Materials Collection is has its own database, which allows users to identify what materials we have on-site and that can be seen and used in their research (see www.gsd.harvard.edu/materials). Access to other types of online visual content is provided through various subscription databases.

Collection development for the library is performed by the professional librarians on the staff, guided by the Librarian for Collection Resources and Access. Acquisitions support current teaching as well as the research needs of the faculty at the GSD and the university as a whole. Suggestions for new acquisitions and input on collection development are sought out and welcomed from faculty and students. In addition, librarians regularly meet with individual faculty and department chairs to discuss curriculum issues and program development. The library takes advantage of several book approval plans to acquire materials, which allows librarians time to pursue publications that present acquisition challenges and to identify and fill gaps in the collection.

The number and variety of electronic resources available in the field of architecture continues to increase rapidly. Loeb Library works across the Harvard campus cooperatively to share the decision-making and costs of acquiring digital acquisitions that are available to the whole of the Harvard community. As electronic versions of publications formerly available only as print subscriptions become available, we work internally and across Harvard to identify those materials now available in full electronic versions and we cancel print versions as appropriate.

The Frances Loeb Library has a trained Collections conservator on its staff, and a small but extremely well equipped conservation laboratory. In addition, the Conservator has access to the university's conservation laboratory housed in the Weissman Preservation Center and its specialized equipment and expertise. We have a series of on-going preservation projects for specific collections within the Library, as well as routine conservation of the general collections. Additionally, the Conservator has participated in the work of the Exhibitions Department of the School by preparing works to be hung in major exhibitions.

Description of Services

The Frances Loeb Library is open 69 hours per week during the regular school term. This is a reduction of 10.5 hours per week from the last NAAB report and is due to the budget reductions undertaken in 2009. Compared to peer libraries, our current hours fall somewhere in the middle, between 103 hours per week and 63.5 hours per week.

Reference assistance is available between 9 a.m. and 6 p.m. Monday through Friday, either in the library, as private consultation appointments, or outside the library in other areas of the GSD. Online assistance is also available via the library website's "Ask a Librarian" service.

The library's book and serials holdings, as well as digital image holdings, and some special collections materials are represented by cataloging records in the online HOLLIS system. Automated circulation is part of the HOLLIS system and allows users to determine offsite if the items they need are on the shelves. The online catalog provides users the ability to renew and recall books from their desktop. We also offer a set of virtual services called "Get It" that allow library users the ability to request materials from other institutions via InterLibrary Loan; to obtain articles and book chapters from other Harvard libraries via PDFs; and we recently joined a sharing initiative called Borrow Direct that allows Harvard community members to borrow books from other Ivy Institutions. These services are available through the "Get It" web portal (<http://lib.harvard.edu/libraries/getit.html>).

In addition to the print reference collection, the library provides access to a multitude of reference resources in electronic form through the University's HOLLIS portal (<http://lib.harvard.edu/>). The Avery Index to Architectural Periodicals, ICONDA (International Construction Index), Art Abstracts, and Applied Science and Technology Abstracts are among thousands of resources sponsored by the library that are available to students and faculty at all times from any location. There are additional CD-ROM resources available for use in the reference area (though CD-ROMS are phasing out as online resources become available). These electronic resources are end-user services and require no library mediation once users know how to access and use the different resources.

The Frances Loeb Library serves as the information center for the teaching of design at the GSD. The Instructional Technology Group provides technological support to push both textual and visual information to students and faculty. The school uses the University's iCommons toolkit of online teaching tools (called "iSites"), and library staff work actively with faculty members and their teaching assistants to utilize the appropriate tools for their pedagogical goals. Working with the Special Collections/Visual Resources/Materials Collection, the group is also responsible for coordinating the traditional archiving role of the library for electronic data created at the school. The Library Information Systems staff works with the Curriculum Integration Group and directly with faculty to increase the use of technology in teaching. This is done through on-on-one collaboration with faculty and through Presidential Fellows grants from the University.

The Curriculum Integration Group also works with faculty to provide one-time targeted research instruction tailored to the needs of specific classes throughout the year. The CIG is developing a robust thesis preparation research methodology program for the Department of Architecture, as well as classes on specific tools used in research, such as RefWorks and online databases.

Library staff, particularly in Conservation and Special Collections/Visual Resources/Materials Collection, have begun increasing participation in the exhibitions life of the School. During the last two to three years, staff have been drawn into the curation and preparation aspects of major school exhibits. The library provides three exhibition spaces available as part of the School's public exhibition spaces – the Special Collections Reading Room, the wall just inside the entry of the library, and a new wall at the back of the first floor of the library (created in the summer of 2011 renovations).

Library Facilities

The library occupies approximately 27,000 square feet on two levels in Gund Hall. Space is adequate for most current and short-term future needs, though the Library is running short of space for physical collections, both in the general collections and for special collections. The library has previously used the Harvard Depository Library in Southborough, Massachusetts, to store some of its archival and visual material. During the last year, the Library has made the first move to send some of our circulating collections to the Depository in order to make room for newer materials coming in.

In the summer of 2011, the library also had the opportunity to reconfigure some space – the first level of the library and the Visual Resources space. In order to meet the increasing space demands of the GSD, a small portion of the first floor of the library was given over to the School to create a badly needed teaching space. This provided the opportunity to re-think how the first floor of the library can be used more effectively. We removed the reference desk, and now provide all services from a single service desk. Reference consultation can be done at the service desk, or it can move into an adjacent consultation room (reclaimed from a former staff office). The renovation also created two group study rooms, one with a MediaScape installation that allows people to study and work together virtually and physically. The Library also took the opportunity to create a new periodical display and seating area, new displays for new acquisitions, and a space in which to sell GSD publications.

During the last year, the Materials Collection has been brought physically into the library so that it is now integrated with the Visual Resources area. This necessitated the move of several major visual collections to the Depository – the 35mm slides and the historic photograph collections. Many maps were sent to the Harvard Map Collection or moved into special collections storage at the GSD. Moving the Materials Collection into the Visual Resources space has created a unified space in which people can study materials, find visual content, and work in a lab-like setting. The space also provides a large open area that will be used for teaching. A continuing concern is the lack of 24-hour temperature/humidity control for the circulating collections and the visual resources. Only the special collections department currently is provided with that stable monitored environment. A space study of the library will be conducted during 2011 focusing on the lower level of the library, in which all the collections sit. It is hoped that the study will result in plans for making better use of the entire floor and enabling a physical merge of the Special Collections/Visual Collections/Materials Collection unit.

The Library is equipped with a 3-M security system for the collections. Written emergency procedures and disaster plans are in place.

Library Equipment

- **Computers:** There are ten public computers in the Library (five require GSD account login, five are “kiosks” with no-login required). The library also hosts a computer cluster for the Computer Resources Group. This cluster contains eight computers that require a GSD login. The library upgrades all its computer equipment on a regular basis, with a three-year replacement cycle in effect for the past ten years.
- **Printers:** There are 3 printers in the Library. (All require GSD account login to use.)
- **Photocopiers:** Photocopy machines are available on the upper and lower levels for letter and ledger-sized reproductions and for reductions and enlargements.
- **Flatbed scanners:** There are two scanners on the upper level, and 4 on the lower level (part of the CRG computer cluster). These scanners are frequently in high demand and their use is limited to 15 minutes per patron.
- **High-speed scanner with a sheet feeder** (Library upper level - copy room)
- **Slide scanner:** Available in Visual Resources/Materials Collection; GSD-users can access their server space to save image files.
- **TV/DVD/VCR: Available in the Library copy stand room – one small VHS/DVD television set, with headphones, available to accommodate one to five film-watchers.**
- **Copystand: Available in** the Library copy stand room.
- **Caramates:** Available in the Library copy stand room – two caramates are available for use to rehearse slide presentations.

Budget and Operations

All aspects of budgeting and operations administration are managed by the Librarian. A budget is submitted each year by the unit heads to the Librarian, who then prepares the general library budget for GSD senior staff review. The budget is reviewed over the year on a monthly basis, and expenditures are managed within predetermined limits.

Working together as the leadership team within the library, the unit heads in the library work with the head librarian to establish goals for their units, and for the library as whole annually and review progress in completing action plans on a regular basis. The staff undertakes a yearly review of previous goals established and progress towards those goals, as well as the setting of new goals and priorities to reflect new developments in the school and the profession. Planning is considered to be an integral part of the management process of the library.

Resource Data

Departmental Library LCNA or 720-729 Collection	69,152
Total Architecture Collection in Departmental Library	288,310
University Library LCNA or 720-729 Collection	39,294
Total Architecture Collection in University Library	n/a
Departmental Library Architecture Slides	158,567
University Library Architecture Slides	270,000
Digital images	71,000
Departmental Library: Commercial Architecture Videos/ DVDs	812
Staff in Departmental Library	16
Number of Computer Stations	18
Amount Spent on Information Technology**	\$81,796
Annual Budget for Library Resources	\$407,321

**This number includes all expenses put towards IT in the library – student employees, computers hardware and software, and grants used for Instructional Technology

1.3. Institutional Characteristics

1.3.1. Statistical Reports

Program student characteristics.

Student Demographics

The tables below show the demographics of all M.Arch I and M.Arch I AP students enrolled in academic year 2011-2012.

I. Total Enrollment Compared to the Time of the Last Visit (full academic year)

M.Arch I, Academic Year 2011-2012						
Ethnicity	Full	Full	Full	Male	Female	Grand
	Time	Time	Time			
	Male	Female	Male	Female	Female	Total
	Total	Total	Total	Total	Total	Total
American Indian or Alaska Native	0	1	1	0	1	1
Asian	14	33	47	14	33	47
Native Hawaiian or other Pacific Islander	0	0	0	0	0	0
Black or African American	5	3	8	5	3	8
Hispanic/Latino	5	3	8	5	3	8
White	51	37	88	51	37	88
Two or more races	3	8	11	3	8	11
Nonresident alien	15	31	46	15	31	46
Race and ethnicity unknown	10	9	19	10	9	19
TOTAL	103	125	228	103	125	228

M.Arch I, AP, Academic Year 2011-2012						
Ethnicity	Full	Full	Full	Male	Female	Grand
	Time	Time	Time			
	Male	Female	Male	Female	Female	Total
	Total	Total	Total	Total	Total	Total
American Indian or Alaska Native	0	1	1	0	1	1
Asian	5	4	9	5	4	9
Native Hawaiian or other Pacific Islander	0	0	0	0	0	0
Black or African American	2	0	2	2	0	2
Hispanic/Latino	1	0	1	1	0	1
White	5	6	11	5	6	11
Two or more races	3	3	6	3	3	6
Nonresident alien	9	4	13	9	4	13
Race and ethnicity unknown	0	3	3	0	3	3
TOTAL	25	21	46	25	21	46

The table below shows demographics for the enrolled student body across all GSD programs for academic year 2011-2012.

All GSD, Academic Year 2011-2012						
Ethnicity	Full Time Male Total	Full Time Female Total	Full Time Total	Male Total	Female Total	Grand Total
American Indian or Alaska Native	0	2	2	0	2	2
Asian	31	56	87	31	56	87
Native Hawaiian or other Pacific Islander	0	0	0	0	0	0
Black or African American	13	8	21	13	8	21
Hispanic/Latino	13	8	21	13	8	21
White	137	125	262	137	125	262
Two or more races	17	20	37	17	20	37
Nonresident alien	139	133	272	139	133	272
Race and ethnicity unknown	25	23	48	25	23	48
TOTAL	375	375	750	375	375	750

The following table shows the demographics reported for the combined enrollment of M.Arch I and M.Arch I AP students during the academic year of the prior visit (2005-2006).

M.Arch I and M.Arch I AP, AY 2005-2006						
Ethnicity	Full Time Male Total	Full Time Female Total	Full Time Total	Male Total	Female Total	Grand Total
American Indian or Alaska Native	n/a	n/a	n/a	n/a	n/a	2
Asian	n/a	n/a	n/a	n/a	n/a	54
Native Hawaiian or other Pacific Islander	n/a	n/a	n/a	n/a	n/a	0
Black or African American	n/a	n/a	n/a	n/a	n/a	3
Hispanic/Latino	n/a	n/a	n/a	n/a	n/a	6
White	n/a	n/a	n/a	n/a	n/a	n/a
Two or more races	n/a	n/a	n/a	n/a	n/a	n/a
Nonresident alien	n/a	n/a	n/a	n/a	n/a	41
Race and ethnicity unknown	n/a	n/a	n/a	n/a	n/a	n/a
TOTAL	n/a	n/a	n/a	120	133	253

Student
 current academic year compared to academic year of prior visit (2005-2006)

Qualifications

II. Qualifications of Students Admitted	
<i>2011-2012</i>	
Graduate Record Examination	
Verbal (200-800)	573
Quantitative (200-800)	696
Analytical (0.0-6.0)	3.9
<i>2005-2006</i>	
Graduate Record Examination	
Verbal (200-800)	599
Quantitative (200-800)	702
Analytical (0.0-6.0)	4.9

Time to Graduation

The table below represents the time to graduation for matriculated students in the Master of Architecture (M.Arch I) degree program, since the last site visit in 2006. The numbers given are for students who should have completed their program during each of those academic years. "On time" program completion for M.Arch I students is considered to be within 4 years (8 semesters).

2006-2007 (entered 2003)	
6.45%	didn't graduate/withdrew
16.13%	graduated in 150% time
77.42%	graduated on time
2007-2008 (entered 2004)	
6.06%	didn't graduate/withdrew
12.12%	graduated in 150% time
81.81%	graduated on time
2008-2009 (entered 2005)	
6.78%	didn't graduate/withdrew
13.56%	graduated in 150% time
79.66%	graduated on time
2009-2010 (entered 2006)	
4.92%	didn't graduate/withdrew
14.75%	graduated in 150% time
80.33%	graduated on time
2010-2011 (entered 2007)	
5.77%	didn't graduate/withdrew
15.38%	graduated in 150% time
78.85%	graduated on time

The table below represents the time to graduation for matriculated students in the Master of Architecture degree program who entered with advanced placement (M.Arch I AP), since the last site visit in 2006. The numbers given are for students who should have completed their program during each of those academic years. "On time" program completion for M.Arch I AP students is considered to be within 3 years (6 semesters).

2006-2007 (entered 2004)	
100%	graduated on time
2007-2008 (entered 2005)	
17%	graduated in 150% time
83%	graduated on time
2008-2009 (entered 2006)	
100%	graduated on time
2009-2010 (entered 2007)	
24%	graduated in 150% time
76%	graduated on time
2010-2011 (entered 2008)	
10%	graduated in 150% time
90%	graduated on time

Faculty Characteristics

Demographics for non-visiting faculty since the previous visit can be found on the following page.

At the time of the previous visit, the demographics were reported as follows:

Of twenty-seven tenured faculty at the GSD, four (15%) are women, three in the Department of Architecture one in the Department of Urban Design and Planning. This is obviously a significant improvement since the accreditation visit of six years ago, when there were two. The dean has stated that he wishes to increase the number of senior women. Indeed, the dean is currently in negotiations with a woman who has been offered a tenured position in architecture. Six of the twenty-seven tenured faculty (22%) are members of underrepresented minority groups. For academic year 2005-2006, the twelve non-tenured senior faculty include four women (33%) and one minority (8%). There are 21 junior faculty in total, including five women (24%) and one minority (5%). One newly hired assistant professor is a woman; two women associate professors left at the end of this past academic year to take up positions elsewhere. One woman associate professor was promoted to tenure, effective July 1, 2005. One of the non-tenured senior faculty and none of the junior faculty is African American.

In the department of architecture, three of the 11 tenured faculty (27%) are women, and three are members of under-represented minority groups. The six non-tenured senior faculty include two women (33%). There are 13 junior faculty in architecture, including three women (23%) and one minority (7%).

Scheduled annual visiting faculty for 2005-2006 number 70, and include 22 women (26%) and 10 minorities (14%).

I. Full-time Instructional Faculty Compared to the Time of the Last Visit (full academic year)

Full time instructional Faculty - Architecture Department

Ethnicity	Professor		Assoc. Professor		Assoc. Professor		Assis. Professor		Assis. Professor		Instructor		Instructor		Grand Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Total	Total
American Indian or Alaska Native																
Asian		1		1											1	3
Native Hawaiian or other Pacific Islander																
Black or African American																
Hispanic/Latino	2	1		3											2	5
White																
Two or more races																
Nonresident alien																
Race and ethnicity unknown																
TOTAL																

Full time instructional Faculty -All GSD

Ethnicity	Professor		Assoc. Professor		Assoc. Professor		Assis. Professor		Assis. Professor		Instructor		Instructor		Grand Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Total	Total
American Indian or Alaska Native																
Asian		1		2		1									1	4
Native Hawaiian or other Pacific Islander																
Black or African American						1								1	1	2
Hispanic/Latino	3	3		6											3	9
White																
Two or more races																
Nonresident alien																
Race and ethnicity unknown																
TOTAL																

Faculty Promotions and Appointments

Since the last visit, 4 Architecture faculty were promoted from Assistant to Associate Professor, 1 in academic year 2007-2008, 1 in 2009-2010, and 2 in 2011-2012. Each of the other departments (LA, UPD) promoted one faculty member, Landscape Architecture in 2007-2008, and Urban Planning and Design in 2010-2011.

II. Faculty Promotions	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
<i>Faculty in the accredited program</i>						
Assistant to Associate Professor		1		1	2	
Associate to Full Professor						
<i>Faculty in the institution</i>						
Assistant to Associate Professor		2			3	
Associate to Full Professor						

Additionally, each of the academic departments made several appointments at the assistant, associate, and professor ranks. For more information, please see appendix 12.

Faculty Receiving Tenure

Since the last visit (Spring 2006), two faculty have received tenure. Martin Bechthold was elevated to the title of Professor in July 2008, and B. Mack Scogin was elevated to the title of Professor in Practice in January 2009. Just prior to the last visit, Farshid Moussavi was elevated to the title Professor in Practice in January 2006.

Since July 1, 2006, three Landscape Architecture and two Urban Planning and Design faculty received tenure.

III. Faculty Receiving Tenure	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
Faculty in the accredited program			2			
Faculty in the institution		1	2	2	1	1

For further details regarding faculty promotions and appointments, see appendix 12.

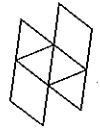
Faculty Licensure

Approximately 30% of the Architecture faculty maintain architectural licensure in one or more U.S. jurisdictions; others are licensed to practice architecture in Europe and elsewhere.

1.3.2. Annual Reports

A statement signed by Executive Dean Patricia Roberts, followed by the 2007 Annual Report and NAAB Response, can be found on the following pages.

Harvard Design School



September 8, 2011

NAAB
1735 New York Avenue, NW
Washington, DC 20006

Dear Sir/Madam:

This letter is to affirm that all data submitted to the NAAB through the Annual Report Submission system from the Harvard University Graduate School of Design since the last site visit in 2006 is accurate and consistent with reports sent to other national and regional agencies including the National Center for Education Statistics.

Please accept this letter as fulfilling the APR required submission from the Harvard University Graduate School of Design as part of our Spring 2012 accreditation requirements.

Sincerely,

Patricia Roberts

Harvard University
Graduate School of Design
George Gund Hall
48 Quincy Street
Cambridge, MA 02138
www.gsd.harvard.edu

Appendix H: Annual Report Statistics Form and Definitions

2006/2007

NAAB STATISTICAL REPORT

SCHOOL: Harvard CSD Completed by: Toohiko Mori

ACSA REGION: EC NE SE SW WC W (circle one)

PUBLIC or PRIVATE (circle one)

STUDENT DATA

For Accredited Programs Only

	4 Year *Pre/Prof	B.Arch Five-year	B.Arch **Post-Pre/Prof	B.Arch **Post-Pre/Prof	M.Arch Five-year	M.Arch **Post-Pre/Prof	M.Arch ***Post-Pre/Prof
Full-Time Students							274
Part-Time Students							0
FTE Students							274
Arch Design Studio Students							274
Students Working Part-Time							n/a
Outside Stud. Serv. by Dept.							0
African-American Students							3
Native American Students*							2
Asian/Pacific Isle Students							56
Hispanic Origin Students							8
Women Students							144
Foreign Students							50
Total Degrees Awarded							49
Grads. Fin. Estab. No. Yrs.							n/a
Degrees Awarded Women							26
Degrees Awarded Ath-Amer							0
Degrees Awarded Amer. Ind.							0
Degrees Awarded Asi/Pac. Isl.							9
Degrees Awarded Hispanics							3
Min Req. SAT/ACT/GRE Score							n/a
Number of Applicants							812
Number Accepted							155
Enrollment Target/Goal							110
Student Studio/Faculty Ratio							

*Include Eskimos and Aleuts

**Includes four-year program component of 4+1 yrs. B.Arch degree and 4+2 yrs. M. Arch degree.

***Non-Professional: baccalaureate degree that is not part of an accredited professional program.

FACILITY/RESOURCE DATA

Departmental Library LCNA or 720-729 Collection	72,161
Total Architecture Collection in Departmental Library	275,890
University Library LCNA or 720-729 Collection	39,994
Total Architecture Collection in University Library	n/a
Departmental Library Architecture Slides	160,207
University Library Architecture Slides	275,430
Departmental Library Architecture Videos	689
Staff in Dept. Library	19
Number of Computer Stations	16
Amount Spent on Information Technology	\$123,723
Annual Budget for Library Resources	\$347,702
Per-Capita Financial Support Received from University	n/a
Private Outside Monies Received by Source	n/a
Studio Area (Net Sq. ft.)	33,938
Total Area (Gross Sq. ft.)	179,000

2006/2007

SCHOOL: Harvard GSD Completed by: Toshiko Mori

FULL-TIME FACULTY SALARIES	Number	Minimum	Average	Maximum	Univ. Avg.
Professor	12	n/a	n/a	n/a	n/a
Associate Professor	7	82,436	88,800		
Assistant Professor	3	72,450	72,450		
Instructor	1				

FACULTY DATA	Department Total	NO. FULL-TIME FACULTY CREDENTIALS	
Full-Time Faculty	17	Ph.D.	9
Part-Time Faculty	15	D. Arch	1
Full-time Equivalent (FTE) Faculty	20.05	M.A. or S.	5
Tenured Faculty	12	Prof. M. Arch	7
Tenure-Track Positions	0	B. Arch	3
FTE Administrative Positions	2.5	Post Prof. Masters	0
Faculty Engaged in Service to Comm.	0	Other	0
Faculty Engaged in Service to Univ.	0		
FT Faculty who are U.S. Licensed Registered Architects	20		
PT Faculty who are U.S. Licensed Registered Architects	12		
Practicing Architects			
FTE Graduate TAs			
FT Faculty Avg. Contact Hrs/Wk			
PT Faculty Avg. Contact Hrs/Wk			

	FT	PT	Tenured	Prof.	Assoc.	Assist.
African-American Faculty						
Native American Faculty*						
Asian/Pacific Island Faculty	1		1	1		
Hispanic Origin Faculty	3	1	3	3		1
Women Faculty	5	1	3	3	2	1

*Include Eskimos and Aleuts

15 June 2006

Cassandra Pair
Accreditation Manager
The National Architectural Accrediting Board
1735 New York Avenue, N.W.
Washington, D.C. 20006-5209

Dear Ms. Pair,

Please find below our updated responses to Conditions not met from the 2006 *Visiting Team Report*. In addition, you will find attached the statistical reports for the 2005-2006 and 2006-2007 academic years

Condition 3.5 Studio Culture – Given the nature of the GSD and the Department of Architecture's place within it, such a policy would need to be school-wide, rather than coming from the Department of Architecture alone. That being said, we are continuing to work on development of the written policy.

Condition 3.13.15 Sustainable Design – Lecturer in Architecture Kenneth Kao has reviewed, analyzed, and revamped the syllabus for 6112M2: Energy, Technology, and Building, a required course for first semester Master in Architecture I students that focuses on environmental issues. The revised version of this course emphasizes environmental topics specifically related to design. We have hired Christoph Reinhart as Associate Professor of Environmental Technology. He will teach the required course 6205: Environmental Technologies in Buildings in Spring 2008. He will also continue to refine the content of environmental technology courses and work on integrating sustainable technologies in all areas of design.

Condition 3.13.16 Program Preparation – In academic year 2006-2007, Design Critic Timothy Hyde implemented a series of proseminars and follow-up exercises on Program Preparation for students about to enter their Thesis Preparation semester. He has been newly hired as Assistant Professor, and will be thesis coordinator. These thesis workshops will be required of all Master in Architecture I students in their Thesis Preparation semester.

Condition 3.13.25 Construction Cost Control – We will be integrating cost control exercises into our second year core design studio sequence.

If the team has any questions about the above or wish further information, please do not hesitate to let us know.

Sincerely,

A handwritten signature in black ink, appearing to read 'T. Mori', with a long horizontal flourish extending to the right.

Toshiko Mori
Robert P. Hubbard Professor in the Practice of Architecture
Chair, Department of Architecture

**NAAB RESPONSE TO HARVARD GRADUATE SCHOOL OF DESIGN
2007 ANNUAL REPORT**

Rec'd Date: 10/12/2007

Date of Visit: N/A

**Section One:
Checklist of required elements**

1. Statistical Report ¹	√Included	Not Included
2. Response to deficiencies identified in the most recent VTR	√Included	Not Included
3. Causes of Concern	√Included	Not Included
4. Changes in the accredited program	√Included	Not Included

**Section Two (A):
Assessment of response to deficiencies**

Condition 3.5: Studio Culture

Further information and/or evidence of progress are needed. The GSD did not provide additional information from the 2006-2007 academic year to document its progress toward the development of a Studio Culture policy that could be applied through the school. The 2008 Annual Report is expected to include an update on this condition.

Condition 3.13.15: Sustainable Design

Further information and/or evidence of progress are needed. Although the report identifies those courses in which the material is introduced and where it will be covered during the current academic year, no additional evidence or narrative is provided in the 2007 Annual Report to demonstrate that students have achieved the level of understanding for this criterion.

Condition 3.13.16: Program Preparation

Further information and/or evidence of progress are needed. Although the report identifies those courses in which the material is introduced and where it will be covered during the current academic year, no additional evidence or narrative is provided in the 2007 Annual Report to demonstrate that students have achieved the level of ability for this criterion.

Condition 3.13.25: Construction Cost Control

Further information and/or evidence of progress are needed. Although the report identifies those courses in which the material is introduced and where it will be covered during the current academic year, no additional evidence or narrative is provided in the 2007 Annual Report to demonstrate that students have achieved the level of understanding for this criterion.

**Section Two (B):
Assessment of response to causes of concern**

No response required; causes for concern were related to the Architecture Program Report and the composition of the Team Room for the 2006 visit.

**Section Three:
Changes to the accredited program**

None reported.

¹ The 2007 Annual Report included on the Statistical Report; no narrative was provided.

1.3.3. Faculty Credentials

Readers are referred to two additional sections of this report, where Faculty credentials such as professional experience; publications and areas of scholarly expertise; funded research projects; and teaching assignments within the M.Arch I program are addressed:

Section 1.2.1 “Human Resources and Human Resource Development” provides a matrix of tenured, full-time, adjunct, and (frequent) visiting faculty in the Department of Architecture, together with a summary of each one’s particular areas of expertise and courses taught in the past two academic years.

Part Four: Appendix 2 “Faculty Resumes” provides resumes for individual faculty members, where the professional practice and scholarly activities of each may be examined in detail.

1.4. Policy Review

The Master in Architecture degree program will provide the listed items at the time of the Team Visit in March/April 2012.

Part Two (II). Educational Outcomes and Curriculum

2.1.1. Student Performance Criteria

Program Overview: Master in Architecture (M.Arch I) Professional Degree

The program leading to the Master in Architecture as an accredited professional degree is intended for individuals who have completed the bachelor's degree with a major other than one of the design professions, or with a pre-professional undergraduate major in one of the design professions. The course of study is rigorous and comprehensive, preparing graduates for the full range of professional activities in the field of architecture. It provides a solid intellectual base of knowledge in history, theory, technology, the social environment, and professional practice. Particular emphasis is given to developing mastery of design through an intensive series of design studio courses. As part of the process of developing independent thinking and resolving design issues, students are required to prepare a design thesis to serve as a transition from graduate school to professional practice.

In order to attain registration for professional practice after completion of the degree, candidates must complete internships in professional architectural offices and pass registration examinations. Many students fulfill a portion of their internship requirements during summer breaks while in graduate school.

The first four semesters of the first professional degree program are an introduction to architectural design; history and theory of architecture; structural, environmental, and construction technologies; and visual studies and digital media. The introduction to architectural design consists of a sequence of four studio courses. These courses provide a broad overview of issues and skills commonly needed to solve most architectural design problems, so that the full potential of design is perceived and explored. Several design problems are given each semester – as separate, short-term exercises in the first year, and as targeted design studies within semester-long design projects in the second year. Design briefs range from studies of the organizational principles found in human habitat to buildings of a relatively complex technical nature. Concurrent with the design courses, students in the two-year core sequence are required to take fixed sequences of courses in visual studies, history and theory, and technology, as well as a required course in professional practice. Following four semesters of core studios and core courses, the final three semesters of the professional program provide design study at a more advanced level. Students in their fifth and sixth semesters may express preference from among a number of studio options. These studios offer a variety of topics and approaches to design, and placement is based on an optimization technique to give as many students as possible (typically averaging 85-90%) their first or second choice priorities. In addition to the studios offered in architecture, studios are occasionally given in which the faculty and students of two or more programs collaborate on design projects. All students commence thesis preparation at the end of fifth semester by finding a faculty member to serve as their thesis adviser in the following two semesters. Under the supervision of their advisers, students write an independent thesis preparation document in the sixth semester. Students complete the thesis work, which may be an independent design thesis or an academic research project, in the seventh semester. Concurrent with advanced design study (options studios and thesis), students are required to take a final case-study based course on applied technology as well as electives in advanced history, professional practice, and non-Western architecture (some individual students are able to fulfill these distributional requirements in earlier years).

Architecture Studios

It is important to note that within the GSD, the studio experience for each student in each semester is first and foremost an internal arena for the synthesis and distillation of the complex and wide-ranging issues that define the phenomenon of architecture. From the beginning and throughout the studio program, the students are designing architecture. They progress from the design of smaller projects with simple

programs and narrowly focused pedagogic objectives to larger, more complex projects with broad, ambitious intentions aimed at significant personal research in architectural design.

Within the context of the studios, one of the primary responsibilities of the faculty is to establish an open-ended yet structured and understandable discourse about the possibilities of present-day architecture. While this type of discourse often produces projects of great diversity and occasional true invention, its success can only be measured against the participants' acquired knowledge and understanding of time-tested, fundamental principles of design, building technique, and architectural practice, history, and theory. The rigor and discipline with which this knowledge and understanding is applied to each studio experience becomes the ultimate challenge to the strength of the program – as is true for the design of "real" projects in the "real" world outside the academy.

Commentary on Student Performance Criteria within the Master in Architecture Degree Program

Realm A: Critical Thinking and Representation

The requirements of this category of Student Performance Criteria are in some ways the most generally described, yet they also speak the core values of the GSD's design pedagogy. Critical thinking, all manner of communication skills, understanding of diverse histories and cultural identities, an ability to collect and analyze data from various sources, an ability to synthesize disparate requirements into one or more design solutions – these are the highest order of skills required in the design professions today. The fact that our students meet these challenges not only through their work in the core studios but also, variously, in their required courses in visual studies, history, and theory, highlights the ways in which the GSD's M.Arch I program prioritizes critical thinking and representation in our pedagogy.

A.1 Communication Skills. Public speaking, participation in class discussions, effective listening at desk crits and in jury reviews are fundamental skills that are fostered in all four core studios of the M.Arch I program (GSD-1101, 1102, 1201, 1202); on occasion, particularly when spontaneous speaking skills are lacking, students may be asked to write summaries about their design goals and steps they have taken to achieve them prior to a review. Core studios also assign a variety of readings that will foster a high level of conceptual discussion in class. Reading and writing forms the core of student work for required history classes (GSD-4121, 4122, 4223: Buildings, Texts, and Contexts), and both verbal presentations and written papers are required of students in Building Technology (GSD-6230). At the GSD, one limiting factor on the development of precise speaking and (in particular) writing skills is the high percentage of non-native English speakers in our programs, many without prior experience in academic writing outside their native languages. Most instructors make allowances for international students when possible, while at the same time steering them toward the School's language resources geared towards increasing fluency and confidence in English.

A.2 Design Thinking Skills. The ability to raise clear and precise questions, to interpret data, to consider alternatives, and argue for specific conclusions – these again are central skills to the development of architectural designers, and the carefully sequenced series of exercises introduced in four semesters of core studios are aimed at developing increasing skill and confidence in our students in this arena. Additionally, the two lecture courses on energy and environment (GSD-6122 and 6125), insofar as they require students to consider siting and other pre-design sustainability issues as fundamental to architecture, emphasize the development of such critical reasoning skills.

A.3 Visual Communication Skills. The GSD places a high value on students' graphic and representational skills. Perhaps even more so than in past generations, the ability to communicate one's design ideas in the form of diagrams, sketches, analytical drawings, rendered views, animated spatial

sequences, and so on will make the difference in our program graduates' ability to find employment, land commissions, persuade clients and constituencies, and inspire interest in the built environment. Visual communications skills are honed in each of the core studios (and option studios), as well as being the primary focus of the four required courses in visual studies: Visual Studies (freehand drawing, GSD-2121), Projective Representation in Architecture (GSD-2122), Digital Media I and II (GSD-6223 and 6224). In addition, courses in other subject areas – from Buildings, Texts and Contexts (GSD-4121, 4122, and 4223) to various technology courses (GSD-6121, 6123, 6227, 6229, and 6230) – all require students to submit coursework demonstrating fluency in visual communication. Virtually no course among the required M.Arch I curriculum is immune to such requirements.

A.4 Technical Documentation Skills. Where “technical documentation” refers to the development of drawings and specifications for construction assembly, the most demanding core courses in this area are two construction courses – Materials, Constructions and Processes (GSD-6123) and Building Technology (GSD-6230) – each of which structures its assignments in a way that asks students first to analyze precedents for similar kinds of constructions, then to synthesize their acquired knowledge into the design of original detail designs. The third-semester core studio (GSD-1201, which functions as the program's Comprehensive Design Studio) also requires students to provide technical drawings of critical details, such as exterior wall sections, in the fulfillment of studio goals.

A.5 Investigative Skills. The ability to gather, organize, and evaluate various kinds of information with that might impact or shape a design proposal is the basis of a student's learning to undertake research as part of architectural design activity. Though “Use of Precedents” and “Applied Research” are listed as separate Student Performance Criteria here, boundaries between these activities are fluid: precedent research is a primary form of architectural investigation, and investigative skills are critical to applied research. Both third- and fourth-semester studios (GSD-1201 and 1202) have an intensive research/investigative component during the early weeks of the project, related to precedent analysis, studies of urban context, ecological assessment of sites, and so on. Required history courses (GSD-4121, 4122, 4223) require a different set of investigative skills, having to do with collecting and analyzing textual data and forming conclusions based on a critical reading of those sources. A demonstration of investigative skills might also include analytical studies done by students in technology classes such as GSD-6122, 6125, 6227, and 6229, where the precise computational results of energy and/or structural testing can be provided to argue for specific design decisions.

A.6 Fundamental Design Skills. In distinguishing fundamental or basic design skills from those that are more advanced (without specification from the NAAB 2009 Conditions for Accreditation as to what those might be), the GSD's M.Arch I program must propose and defend the value system that has produced our first-year design curriculum. Fundamental design skills taught in the first-year studios (GSD-1101 and 1102) emphasize the need for students to learn to work iteratively, in sketch mode, as they synthesize demands of spatial organization and use, form and appearance, materials and tectonics, and site context. Representational technique and conceptual clarity in graphic and verbal presentations are the central focus of studio instructors' feedback on student projects. Fundamental inputs from non-studio courses during the first-year curriculum include descriptive and projective geometry; relationship to place, cultural context, and history; tectonics, constructability, and structural performance; considerations of siting, such as solar orientation for daylighting, energy efficiency, etc.; and other concerns for sustainability.

A.7 Use of Precedents. Research into and analysis of building precedents is one of the fundamental ways that students at the GSD learn to engage architectural history while developing their own design skills and sensibilities. Precedent study plays a fundamental role in each of the core studios, as well as forming the basis for creative assignments in Projective Geometry (GSD-2122) and analytical assignments in Buildings, Texts, and Contexts (GSD-4121, 4122, and 4223), Energy, Technology and

Buildings (GSD-6122), Materials, Constructions, and Processes (GSD-6123), and Environmental Technologies in Buildings (GSD-6125).

A.8 Ordering Systems Skills. Understanding the fundamentals of natural and formal ordering systems seems to describe the basis of any act of design, at least as design is understood in the context of the GSD's pedagogy. Geometrical analysis of simple and complex systems is so fundamental to the activities of the first-year design studios, for example, that the course Projective Representation in Architecture (GSD-2122) was designed and is constantly updated to give students the advanced 2-D and 3-D visualization skills they will need to analyze and produce architectural ordering systems at a variety of scales and degrees of abstraction or concretization. Digital Media courses (GSD-2223 and 2224) expand on students' understanding of ordering systems by unlocking the logic of complex rendering, fabrication, and scripting software. Graphic analysis of buildings, their proportions, and construction systems is also critically demanded in the required history courses (GSD-4121, 4122, and 4223) and in construction courses (GSD-6123 and 6230), where the ability to generate 3-D computer models that describe construction elements, sequences, and systems enhances students' ability to understand underlying order.

A.9 Historical Traditions and Global Culture. Architectural history courses at the GSD provide students the most direct means for understanding building traditions of both western and non-western cultures. The organization of the three required courses in architectural history under the title "Buildings, Texts, and Contexts" (GSD-4121, 4122, and 4223) alludes to the important role that historical writings on architecture and historical research on society and culture – in addition to images and physical artifacts – play in our pedagogy. There is no understanding a building without understanding the societies, customs, and traditions that formed it – as well as the conventions that were broken by innovative architectural proposals. To the extent that it requires students both to consider programmatic precedents and to confront a given urban site featuring existing buildings and public spaces to be interpreted, the third-semester core studio (GSD-1201) confronts historical traditions and culture within the studio context. In the previous set of NAAB Conditions for Accreditation, "global culture" was represented by a requirement that professional degree students receive exposure to non-western architecture; and the GSD's architecture program to some extent has retained the idea of exposure to non-western cultures as a positive feature of one's architectural education. Each of the required "Buildings, Texts, and Contexts" courses introduces one or more buildings in Asia, the Middle East, Africa, and/or Latin America among its topics of study; however, due to the pedagogical emphasis on historical texts, the emphasis of those courses falls squarely on examples from European and North American architectural history. In order to promote exposure to diverse cultural traditions, therefore, the Department of Architecture maintains a requirement that professional degree candidates complete at least one course in which non-western architecture (architectural history or contemporary culture) is central. The non-western distributional elective may be fulfilled by a studio traveling to China or by courses on Turkish modernism, East Asian urbanization, Japanese construction, and so on; because no single "non-western" course is required of all M.Arch I students, however, none of these electives are shown on the matrix.

A.10 Cultural Diversity. An understanding of cultural diversity is of increasing importance to architects of the future, many of whom will be called upon, in their designs, to navigate the complexities of identity politics in urban communities and to use design as a tool to increase social amenity and cohesion. The fourth-semester core studio (GSD-1202) is designed to introduce architecture students to a numerous challenges related to large-scale development in an urban context, among these an interpretation of social and spatial patterns in existing urban contexts. The final "Buildings, Texts, and Contexts" course, GSD-4223, which focuses on twentieth-century architecture and urbanism, introduces students to the social and political context in which nations, cities, and communities have become increasingly heterogeneous and globalized.

A.11 Applied Research. Both the third- and fourth-semester core studios emphasize various kinds of research (into building materials, precedents, urban built and social context, terrain and site ecology, etc.) in preparation for semester-long design projects. Applied research, in the form of understanding occupant behavior under various climate control systems, is also a component of student assignments in Environmental Systems in Building (GSD-6125). The most critical demonstration of a student's ability to undertake and apply research in a design setting is seen in the preparation and execution of the Independent Thesis in Satisfaction of the M.Arch Degree (GSD-9301), whose goals, requirements, and policies are detailed in greater length elsewhere in this report.

Realm B: Integrated Building Practices, Technical Skills and Knowledge

Student Performance Criteria in this realm encompass a wide variety of skills and sensibilities: students must acquire not only technical knowledge regarding the constructability and sustainability of their designs but also an understanding of accessibility and life safety that will justify the role they wish to play in society. The means by which students in the M.Arch I degree program demonstrate their ability and understanding in integrated building practice is seen both in the work of core design studios (particularly those of the second year) and in the analysis and design assignments of their technology and professional practice courses.

B.1 Pre-Design. The fourth-semester core studio (GSD-1202) is designed to introduce architecture students to a numerous challenges related to large-scale development in an urban context. Compared to previous studio briefs in which students are given a more fixed program and site, the final core studio challenges students to understand how the conditions of building design are determined – such as (in the case of large-scale urban projects) analysis of existing urban fabric, zoning and existing uses, needs of a community, social networks, political forces, potential financial incentives for development, and so on – prior to writing up programs. To the extent that a particular site's suitability for various uses is considered, students may also rely on skills acquired in two lecture courses on energy and environment, GSD-6122 and GSD-6125, to guide their understanding of pre-design.

B.2 Accessibility. Discussion of social equity, inclusivity, and accessibility occurs in nearly every GSD studio; but accessibility as an issue of code-compliance is formally incorporated only into the pedagogy of the third-semester core studio (GSD-1201). This studio provides guidelines for interpreting ADA regulations in building design and requires student to integrate these into their building designs.

B.3 Sustainability. The third- and fourth-semester core studios (GSD-1201 and 1202) challenge students to address different concerns within the spectrum of sustainability. The third-semester studio's focus on materialization and building envelope systems requires students to respond to issues of energy use in buildings, daylighting, material recyclability, and so on. The sustainability focus of the fourth-semester studio is focused primarily on the impacts of a large-scale project on its urban context and site ecology (see B.4 below). The two lecture courses dealing with energy and environment, GSD-6122 and GSD-6125, are geared to providing student with analytical tools for considering energy use, solar orientation, and other sustainability concerns, using software such as Ecotect, DIVA, and others.

B.4 Site Design. The fourth-semester core studio (GSD-1202) is designed to introduce architecture students to a numerous challenges related to large-scale development in an urban context. In recent years, the Department of Architecture has collaborated with the Department of Landscape Architecture in offering shared exercises between fourth-semester professional degree students (M.Arch and MLA) at the beginning of term, so that together they might share cross-disciplinary skills in the analysis of topography, watershed ecology, solar orientation, and so on. Prior to making proposals for building forms and programs on their urban sites, architecture students must present their findings on appropriate site

responses with regard to various sustainability concerns. The role that energy concerns play in site design is also intensively studied in two lecture courses dealing with energy and environment, GSD-6122 and GSD-6125.

B.5 Life Safety. The M.Arch I curriculum challenges students to understand and master life safety system design in two ways: first, in the design of a legally compliant egress system for the (programmatically complex) building they design in the Comprehensive Design Studio (GSD-1201, see below); and second, in considering alternatives to the fire safety and evacuation system proposed in one of the Building Technology (GSD-6230) case studies.

B.6 Comprehensive Design. The third-semester core studio (GSD-1201) is designed as the M.Arch I degree program's "Comprehensive Design" studio, in which students are required, through the design of an individual building on a given site, to demonstrate their ability to make intelligent design decisions across scales and implement technical skills across a wide range of criteria. As such, the third-semester core studio is a kind of "workhorse" that responds directly to numerous Student Performance Criteria specified by the NAAB. Because it has fulfilled this role within the accredited M.Arch I degree program for many years previously, the emphasis of the third-semester studio is particularly sensitive/responsive to changes in SPC for accreditation. The program brief varies year to year – past years have seen students designing library/media centers, performing arts centers, various forms of mass housing, and so on – but in each case, a methodically structured series of exercises requires students to incorporate responses to building site, circulation (egress and accessibility), structural system, building services and life safety, building envelope and material detailing into a holistic and thoroughly documented building design proposal.

B.7 Financial Considerations. No single course in the M.Arch I required curriculum covers all the aspects entailed in this SPC; instead, its component aspects are dealt with separately in at least two required courses. Acquisition costs, project funding, and operational costs are addressed in case studies assigned in Issues in Professional Practice (GSD-7212); students are challenged to estimate construction and operation costs, based on comparative data, in case studies assigned in Building Technology (GSD-6230). Among the lecture courses offered as professional practice distributional electives are Real Estate Finance and Development (GSD-5204), Real Estate Finance and Development Fundamentals (GSD-5492, jointly offered with the Kennedy School of Government), and Design and Development: from Concept to Implementation (GSD-7411) – each of which provides more substantial depth in this topic area. The Department of Architecture may consider narrowing its criteria for the professional practice distributional elective requirement in the future so that it may become more instrumental in helping students meet this and other SPC.

B.8 Environmental Systems. Two required lecture courses, GSD-6122: Energy, Technology and Building and GSD-6125: Environmental Technologies in Buildings provide students with fundamental and advanced knowledge of energy, thermal control, air quality, daylighting, and other environmental aspects of architecture – as well as introducing them to numerous software applications for testing the performance of both existing and projected buildings. Both Christoph Reinhart and Nico Kienzl, who teach these courses, are recognized experts in energy and sustainability, widely recognized for their scholarship and professional accomplishment. The third-semester core studio (GSD-1201) challenges students to synthesize their understanding of energy performance in the comprehensive design of a building.

B.9 Structural Systems. The GSD's M.Arch I program offers one of the most comprehensive courses of study in building structures found among North American architecture schools. Two sequential courses

on Structural Analysis and Design are required in the program's second year: GSD-6227 deals primarily with the analysis of discreet structural elements (columns, beams, trusses, etc.) as well as structural frames; GSD-6229 studies more complex structural behavior, including planar systems, shells, tensile structures, high-rise, kinetic and other advanced structures. In addition, the first-year technology curriculum (GSD-6121, GSD-6123) introduces students to principles of static equilibrium, framing, and other structural topics related to construction basics. As part of its holistic approach to building system integration, Building Technology (GSD-6230) requires students to construct structural models of case study buildings and analyze a variety of structural alternatives within a broader discussion of design goals. Structural learning is applied directly to core studio assignments in the second and third semester (GSD-1102 and 1201).

B.10 Building Envelope Systems. Technical, constructional, and design aspects related to building envelope receive considerable attention in the M.Arch I core curriculum. Energy performance and durability of building envelopes is a principal topic of study in Energy, Technology and Building (GSD-6122), Environmental Technologies in Buildings (GSD-6125), Building Technology (GSD-6230), and, to a lesser extent, Materials, Constructions, and Processes (GSD-6123). The former two courses emphasize thermal and daylighting aspects of building envelope systems; the latter two, durability, constructability, and maintenance issues. In the Comprehensive Design Studio (GSD-1201), students are challenged to synthesize their understanding of the various demands on building skins by producing detailed exterior wall sections consistent with their design goals.

B.11 Building Service Systems. Students are given an introduction to conventional and innovative heating and cooling systems in Energy, Technology and Building (GSD-6122). More comprehensive coverage of mechanical, electrical, fire safety, and vertical circulation systems is provided in Environmental Technologies in Buildings (GSD-6125). Building systems also play a role in case study assignments in Building Technology (GSD-6230).

B.12 Building Materials and Assemblies. Material properties, material selection, construction assemblies and building systems are principal topics of three courses – Materials and Construction (GSD-6121), Materials, Constructions, and Processes (GSD-6123), and Building Technology (6230) – corresponding to introductory, intermediate, and advanced courses in construction. The sequence of courses progresses from a primarily empirical mode (hands-on experimentation) to a speculative design mode (inventing construction details for small-scale constructions) to the analysis of complex detailing systems across a wide range of performance and design criteria (case study work). Material assembly also touches on the interests of the energy and environment lectures (GSD-6122 and 6125) and is engaged synthetically in the third-semester core studio (GSD-1201, also qualifying as the Comprehensive Design Studio).

Realm C: Leadership and Practice

The majority of Student Performance Criteria in this category are met by a single required course, Issues in Professional Practice (GSD-7212), taught by Maryann Thompson and Jay Wickersham. The goals of this course – to provide a comprehensive basis for graduates to consider a wide range of issues (legal, ethical, financial, strategic, etc.) facing the profession – are well aligned to the goals of NAAB in this section. Most or all of these topic areas are also covered (and in some cases, covered in greater depth) in other GSD courses that the students may use to fulfill the professional practice distributional elective requirement. A list of approved professional practice electives appears in Appendix 13. However, for the purposes of the SPC matrix, only required courses are listed and commented on here. As noted below, a number of other required courses, such as studios and technology courses, also contribute to rounding out students' understanding of professional collaboration, leadership, and practice issues.

C.1 Collaboration. Collaboration is an essential skill for architects to acquire during their educations, and the M.Arch I program teaches collaboration in various ways: by having students work together in collaborative teams within the studio context (most notably in the fourth-semester core studio, GSD-1202); by having students work together in collaborative teams to produce group projects, presentations, and reports (typical of many technology courses, among them GSD-6121, 6122, 6215, and 6230); and by asking student to analyze professional collaborative methods as the subject of case studies (such as collaborations between architects and engineers in GSD-6230).

C.2 Human Behavior. The relationship between human behavior and the natural and built environment comes under particular scrutiny in the fourth-semester core studio (GSD-1202), in the pre-design analysis of urban social dynamics; as well as in the two lecture courses related to energy and environment (GSD-6122 and 6125), in terms of conducting user satisfaction surveys related to climate control and other sociologically based studies of human interaction with architecture.

C.3 Client Role in Architecture. The professional role of the architect in eliciting, shaping, responding to, and representing client needs is a principal topic of study in the required course Issues in Professional Practice (GSD-7212). Case study assignments in the required course Building Technology (GSD-6230) require students to analyze client needs and priorities and to compare these with the results produced by the architects in each case.

C.4 Project Management. Obtaining commissions, building collaborative teams, maintaining project quality and direction, and so on are explicit topics of discussion and debate within the courses Building Technology (GSD-6230) and Issues in Professional Practice (GSD-7212).

C.5 Practice Management. Financial and personnel management, business planning, risk, negotiation/mediation, and other issues related to managing a professional practice are covered by GSD -7212: Issues in Professional Practice.

C.6 Leadership. Techniques of collaboration, negotiation, communication, and public advocacy are among the leadership skills analyzed in case studies within GSD -7212: Issues in Professional Practice.

C.7 Legal Responsibilities. GSD-7212: Issues in Professional Practice introduces students to legal aspects of the architectural profession, including registration laws, contract law, zoning and planning ordinances, preservation and accessibility, professional liability, and others. The teaching of legal aspects of professional design practice, based on case study methods, has long been considered a strength of the GSD's M.Arch I program.

C.8 Ethics and Professional Judgment. Ethical issues regarding social equity, competing constituencies in the public realm, conflicts of interest, and so on are covered by GSD-7212: Issues in Professional Practice.

C.9 Community and Social Responsibility. Issues in Professional Practice (GSD-7212) provides students with a solid understanding of the architect's responsibility to work in the public interest. Case study assignments require students to form judgments about historic preservation and NIMBYism, quality-of-life issues affecting local and global constituencies, and other arenas in which architects may find themselves

torn between the pros and cons of an architectural proposal. Similar topics of debate are problematized in the urban socio-spatial analysis phase of the fourth-semester core studio (GSD-1202).

Matrix of Student Performance Criteria within the M.Arch I Degree Program

See following page.

Cross-Referencing Information on Curriculum within this Report

The titles of required courses are presented by term in a later this section of the report (2.2.2 “Professional Degrees and Curriculum”); full course descriptions, including core courses and electives, are provided in the Appendices. Course titles and descriptions are organized according to the subject categories established by the Faculty of Design and documented in the *Official Register*. (Please note that, as a result of a University-wide initiative to standardize course-numbering conventions, several GSD courses required of the Master in Architecture students have been given new numbers beginning in Academic Year 2011-12. Both current and past course numbers are presented side-by-side in this report wherever possible, to avoid confusion.)

2.2. Curricular Framework

2.2.1. Regional Accreditation

Harvard University is accredited by the New England Association of Schools and Colleges (NEASC), whose most recent accreditation visit occurred in 2009 and whose next visit is scheduled for 2017. Confirmation of Harvard's regional accreditation is found online at the NEASC website: http://cihe.neasc.org/about_our_institutions/roster_of_institutions/details/17802.

2.2.2. Professional Degrees and Curriculum

The GSD's Department of Architecture offers the following professional degrees in architecture:

Master in Architecture, 140 units (105 graduate credit hours)

The Master in Architecture I program is intended for individuals who have completed a bachelor's degree with a major other than one of the design professions or with a pre-professional undergraduate major in one of the design professions. The three-and-one-half year course of study is rigorous and comprehensive, preparing graduates for the full range of professional activities in the field of architecture. It provides a solid intellectual base of knowledge in history, theory, technology, the social environment, and professional practice. Particular emphasis is given to developing mastery of design through an intensive series of design studio courses. As part of the process of developing independent thinking and resolving design issues, students are required to prepare a design thesis to serve as a transition from graduate school to professional practice.

Preference for admission is given to individuals who have completed a balanced undergraduate education that includes study in the arts, sciences, and humanities. A minimum of a one-semester, college-level course in calculus or higher-level mathematics and a one-semester, college-level course in physics, preferably in mechanics, is required. A minimum of two semesters of college-level survey courses in the history of art and/or architecture, preferably covering the ancient to modern periods, is also required. Applicants must achieve a grade of B or better in each of these prerequisite courses. Preparation in the visual arts is desirable and may include drawing, sculpture, graphic design, and/or digital media.

Master in Architecture, Advanced Placement, 100 units (75 graduate credit hours)

Individuals who have completed a pre-professional four-year Bachelor of Arts or Bachelor of Science degree with a major in architecture or environmental design may be eligible for admission with advanced standing, subject to the review of the admissions committee. Such applicants are considered for placement in the third term of the M.Arch I program, thus reducing the required course of study to two-and-one-half years. Applicants who are granted advanced standing must have completed the same preparation in college-level calculus, physics, and history as described in the previous paragraph, as well as undergraduate courses that are roughly analogous to the course of study of the first year of the graduate program, including architectural design studios where they have demonstrated high achievement, drawing and visual media, architectural history, and building technology.

M.Arch I degree candidates admitted with Advanced Placement enter the sequence in the third semester and proceed through; however, depending on their previous coursework, many are required in their fourth semester to take Environmental Technologies in Buildings (GSD-6125, formerly GSD-6205), while their counterparts who did not enter with advanced standing may take an elective at that time.

Note: In addition to the professional degrees M.Arch I and M.Arch I AP listed above, the GSD's

Department of Architecture also offers a three-semester post-professional Master in Architecture degree (M.Arch II) for students who already hold a professional degree in architecture, such as B.Arch or M.Arch from another institution. This program allows students to take up to three option studios as well as elective coursework; M.Arch II students bring a diversity of experience to our studios and classrooms, exposure to which benefits our professional degree candidates. The M.Arch II degree, however, is not the subject of this report, nor is it covered in detail here.

M.Arch I Degree Requirements

The requirements for the M.Arch I degree program include four semesters of core studios, two semesters of options studios, and a design thesis in the final semester. Other requirements consist of a precisely sequenced series of courses in visual studies and digital media, history and theory, structures, environmental and construction technology; distributional electives; and free electives. The curriculum consists entirely of graduate-level professional-content courses, as students are required to have completed their general studies as criteria for admission. Students in the M.Arch I AP degree program are waived from the requirements of the program's first year but otherwise must meet all the requirements of years two, three, and four. Degree candidates may choose from a list of approved courses each semester to fulfill their distributional elective requirements in professional practice, non-western, and advanced history.

For students entering without advanced standing, a minimum of seven terms of full-time study in residence, including thesis, is required. Individuals admitted with advanced standing begin with the third term of the program and must complete a minimum of five terms of full-time study in residence. The GSD assigns one course unit as the equivalent of ¾ credit hours of graduate study. The standard course load is 20 units (15 credit hours) per term, though some students choose to enroll in up to 24 units (18 credit hours) with the permission of the Program Director. A student must be enrolled in at least 16 units (12 credit hours) to be considered a full-time student. The standard program is seven semesters, though students may choose to split the requirements of their final semester into two semesters, extending the program to four years, with a reduced course load in the final two semesters.

The following outline represents the typical track for completing the M.Arch I program.**

First Semester		
1101	First Semester Core Studio	8 units
2121 (2101m1)	Visual Studies	2 units
2122 (2102m2)	Projective Representation in Architecture	2 units
4121 (4201m1, 4202m2)	Buildings, Texts, and Contexts I	4 units
6121 (6111m1)	Materials and Construction	2 units
6122 (6112m2)	Energy, Technology, and Building	2 units
Second Semester		
1102	Second Semester Core Studio	8 units
4122 (4203m3, 4204m4)	Buildings, Texts, and Contexts II	4 units
6123 (6203m3/m4)	Materials, Constructions, Processes	4 units
6125 (6205)	Environmental Technologies in Buildings	4 units
Third Semester		
1201	Third Semester Core Studio	8 units

2223 (2107m1)	Digital Media I	2 units
2224 (2107m2)	Digital Media II	2 units
4223 (4205m1, 4206m2)	Buildings, Texts, and Contexts III	4 units
6227 (6201)	Analysis and Design of Building Structures I	4 units
Fourth Semester		
1202	Fourth Semester Core Studio	8 units
6229 (6202)	Analysis and Design of Building Structures II	4 units
7212	Issues in Architectural Practice and Ethics	4 units
	Electives (Distributional or General)	4 units
Fifth Semester		
	Studio Option	8 units
6230 (6204)	Building Technology	4 units
	Electives (Distributional or General)	8 units
Sixth Semester		
	Studio Option	8 units
	Electives (Distributional or General)	12 units
Seventh Semester		
9301	Independent Design Thesis	12 units
	Electives (Distributional or General)	8 units

****Note:** In Academic Year 2011-12, the Graduate School of Design adopted a new Student Information System, which necessitated the re-numbering of many of our courses. Current course numbers are found below, with equivalent course numbers for prior years in parentheses. In addition, some courses previously offered as two half-semester “modules” have been combined into one semester-long course.

Minors and Concentrations

Though the M.Arch I degree program does not offer minors or concentrations in any formal sense, students may concentrate on particular areas of architectural study through the selection of elective courses and the structuring of research leading to the design thesis.

Professional Content

The curriculum of the M.Arch I program is entirely focused on professional content. The required coursework includes design studios, architectural history, visual studies, structures, environmental technology, in addition to electives that meet the distributional criteria of non-western, advanced history, and professional practice. See Appendix 13, 14, 15 for a list of courses that have been approved as fulfilling distributional elective requirements since 2006.

General Education

Candidates for the M.Arch I professional degree, including those who enter with Advanced Placement, are considered to have fulfilled the 45 credit hours of general education required for accreditation in

completing their B.A., B.S., or other undergraduate degree programs. See section 2.3.1 “Evaluation of Preparatory/Pre-Professional Education” for details of the M.Arch I Admissions process and requirements to be met by applicants to our professional programs.

Off-Campus Programs

As discussed in section 1.2.1, there are a variety of opportunities for architecture students to travel, both with GSD options studios, and with the newly added semester abroad programs in Paris (Fall 2011) and Tokyo (Spring 2012). In addition, a three-week workshop is offered each summer in Rome, led by artists Kelly Wilson and Jennifer Riley. This workshop, GSD-2308: Drawing in the City of Rome, is open to students who have completed the prerequisite history course 4321: Rome and St. Peter’s. During the workshop, students live in Rome for three weeks, taking part in walking tours to experience the streets, spaces, and specific buildings. Through large-format easel drawing in the streets of Rome, assisted by introductions to the city from resident historians and architects, students create knowledge useful for the evaluation of American urban form.

One additional opportunity for international exchange is the GSD’s decades-old exchange program with the Swiss Federal Institute of Technology (Eidgenössische Technische Hochschule, or ETH) in Zurich, Switzerland. Through this program, two GSD Architecture students are selected by a faculty committee to spend one spring semester in Zurich (students are eligible in either their fourth or sixth semester at the GSD). There, they take a studio and electives equivalent to a full-semester course load at the GSD. Students must find housing on their own, though student housing is available to them, and they receive a monthly stipend. Many of the ETH studios travel internationally as well. The two students who were on the exchange in spring 2011 were in the same studio, which travelled to Mumbai.

2.2.3. Curriculum Review and Development

The curriculum of the Master in Architecture program is rigorous and comprehensive, intended to prepare graduates for the full range of professional activities they will encounter in the field of Architecture. Particular emphasis is given to developing mastery of design through an intensive series of design studio courses. The Department Chair oversees instruction and faculty development, while the Program Director is responsible for the academic administration of the degree program. Together, the Chair, Program Director, and Faculty of the Architecture Department monitor the effectiveness of the program and, if necessary, recommend policy and degree requirement changes as needed. In recent years, the requirements of the thesis program were altered through a series of ongoing discussions at Department Faculty meetings, and meetings with the Thesis Coordinator. This group dynamic works well and allows everyone a voice and chance to weigh in on a subject.

Within the department, the coordinators of the four semesters of core design studios meet annually to develop the studio curriculum as a whole. Additionally, leaders of each specialized area of knowledge (including history, technology, and professional practice) meet with the Chair on an ongoing basis. A comprehensive review of each area is conducted every three years, with minor revisions discussed and implemented each year between.

As discussed in section 1.1.5, the Student Forum and Student Affairs Committee (SAC) are venues for curriculum review and feedback by students. Students bring their concerns to the Chair and Program Director. Outside of the SAC meetings, the Department Chair and Program Director meet with the Student Forum representatives on a formal basis a few times each year to discuss academic issues of interest or concern. The Chair and Program Director then discuss these issues and concerns with the Dean of Students, staff of the Student Services Office, and/or at monthly faculty meetings.

On the school-wide level, academic departments and various faculty committees advise the general faculty on matters relating to the academic life of the Graduate School of Design. Additionally, there are four curriculum platforms, covering the topics of: History and Theory, Media, Professional Practice, and

Technology. Each of platform committee is led by a full Professor with expertise in the area (see appendix 16). The committees meet on an ad-hoc basis to discuss course offerings in each of the platforms. These platforms provide a venue for cross-departmental discussion.

2.3. Evaluation of Preparatory/Pre-professional Education

Evaluation of Prior Education

When applying to the M.Arch I program, each applicant must provide a scan of his or her transcript, as well as a list of courses that meet the required prerequisites: physics, calculus, and history of architecture. After the committee decides to offer admission to a student, selected faculty then examine the students' files and determine which ones still have outstanding physics or calculus prerequisites to be completed before entering in the fall. Prerequisite courses in the history of architecture are reviewed by doctoral students who serve as instructors for our pre-semester intensive survey courses in Architectural History. Those students who have not fully satisfied the prerequisites are granted conditional admission, and must complete that coursework before the start of the term. If there is any question regarding the content of any course, the committee will request more information in the form of a course description or syllabus.

Evaluation of Prior Education for Advanced Placement Applicants

Students who wish to be considered for the M.Arch I Advanced Placement (AP) program may indicate that preference on their application. Those applications are carefully screened by the admissions committee. If the committee determines that the candidate is not an appropriate fit for the Advanced Placement program, they will be considered for admission into the regular track of the M.Arch I. Conditions for admission into the AP program are outlined in Appendix 17, and include completion of a Bachelor of Arts or Bachelor of Science degree with a major in Architecture or Environmental Design, successful completion of three or more advanced architectural design studios, and coursework comparable to the first year of the graduate program.

Of particular importance for Advanced Placement applicants is the portfolio. The documentation of design projects is the best indication of undergraduate design curriculum and its value towards advanced placement in the graduate program. Specific requirements are given to applicants regarding what the portfolio and should include, and what should be shown for specific project documentation. Advanced Placement students are admitted directly into the third semester of the program, and may also be able to waive some requirements in the second year of the program if their prior coursework fulfilled those requirements.

2.4. Public Information

Introduction and Disclaimer

The world is increasingly reliant on the Internet as a primary source of public information, and the GSD maintains a strong commitment to publishing and updating information about its programs, events, research activities, and other topics of interest via its website, <http://www.gsd.harvard.edu>. As seen in the following sections of this report, nearly all of the Public Information required for NAAB accreditation, as well as other information available to our students for advancing their education and their careers, is found online.

During Academic Year 2010-11, recognizing that our model of web organization was becoming outdated – that more efficient linkages were possible between our website and the University's student information and coursewares systems, our School's own intranet of data services, and external social media – the GSD engaged the web-design firm Pentagram to complete a comprehensive redesign of its website. The

new website came online during the first week of September 2011, in time for the beginning of the new academic year. At the time of this Architecture Program Report's writing, however, some bugs are still being worked out, and we ask readers' forgiveness if not every URL or link below is active at the time of the APR submission. Our team is striving to update and reconnect all pages and links as soon as possible, and updates will be provided to the Visiting Team as necessary.

2.4.1. Statement on NAAB-Accredited Degrees

The *Guide to Gund* is a manual for all constituents of the Graduate School of Design; it outlines policies and requirements for each of the degree programs and departments. The 2009 Statement on NAAB-Accredited Degrees can be found in both the current print version of the *Guide* (p 99), as well as on the website (http://www.gsd.harvard.edu/images/content/5/0/500005/guide_to_gund.pdf, p 99). All faculty, students, and department offices receive a copy of the new *Guide* each fall, and it is linked directly on our website in the "Information for Current Students" section (<http://www.gsd.harvard.edu/#/information-for/current-students.html>). The 2009 Statement on NAAB-Accredited Degrees also appears in its entirety on the Department of Architecture's M.Arch I Degree Program main webpage: <http://www.gsd.harvard.edu/#/academic-programs/architecture/march-i/index.html>.

2.4.2. Access to NAAB Conditions and Procedures

The GSD website provides online access to NAAB's "2009 Conditions for Accreditation" and "2010 Procedures for Accreditation" via links to the NAAB website at <http://www.gsd.harvard.edu/#/academic-programs/architecture/march-i/index.html>. The "2009 Conditions for Accreditation" and "2010 Procedures for Accreditation" are also available in hard copy to all of the GSD's students, faculty, and staff in the Architecture Department's Faculty Resource Room, which is open each day during office hours. There they are housed together with other reference materials about the Master in Architecture program, including course evaluations from past years.

2.4.3. Access to Career Development Information

Career Services for Architecture Students

The GSD Career Services offers a comprehensive set of programs and opportunities for architecture students. An important priority is to provide students with access to job opportunities and alumni contacts. All students have a personal account in our career management system (e-Recruiting), which includes a database of over 3,000 employers. Students can view internship and job postings; employer descriptions; and GSD alumni contacts through this system.

The Career Services (http://www.gsd.harvard.edu/professional/career_services) includes both internal links to GSD-sponsored internships and fellowships and external links to organizations such as NCARB, IDP, AIA, AIAS, ACSA, e-Architect, ArchVoices, and many others; students are encouraged to explore these resources on matters of licensure and career planning. A full listing of architecture career resources linked to the GSD Career Services may be found at http://inside.gsd.harvard.edu/professional/career_services/students/field_arch.html.

2.4.4. Public Access to APRs and VTRs

In order to promote transparency in the process of accreditation of its Master in Architecture degree program, the GSD's Department of Architecture currently makes the following documents available to the public:

- the most recent Architecture Program Report (currently both 2005 and 2011 APRs are available);
- the final edition of the most recent *Visiting Team Report (2006)*, including attachments and addenda;
- the final decision letter from NAAB (2006); and
- all *Annual Reports* since the previous accreditation visit and NAAB responses to the *Annual Reports*.

Printed copies of all these documents are available in the Architecture Department's Faculty Resource Room, which is open each day during office hours. Documents are organized in clearly labeled binders and stored together with other reference materials about the M.Arch program.

2.4.5. ARE Pass Rates

The National Council of Architectural Registration Boards annually publishes pass rates for graduates of accredited architecture programs, by institution, for each section of the Architect Registration Examination. Over the years, since NCARB began publishing this data, graduates of the GSD's Master in Architecture program have maintained consistently high pass rates for all sections of the ARE, and we are pleased to have this information available to students, prospective students, parents and prospective employers. The GSD website provides several links to the NCARB website, where up-to-date statistics are available. See http://inside.gsd.harvard.edu/professional/career_services/students/field_arch.html.

Part Three. Progress Since Last Site Visit

1. Summary of Responses to the Team Findings [2006]

A. Conditions Not Met, 2006 VTR

Condition 3.5	Studio Culture
Condition 3.13.15	Sustainable Design
Condition 3.13.16	Program Preparation
Condition 3.13.25	Construction Cost Control

3.5 Studio Culture

Condition:

The school is expected to demonstrate a positive and respectful learning environment through the encouragement of the fundamental values of optimism, respect, sharing, engagement, and innovation between and among the members of its faculty, student body, administration, and staff. The school should encourage students and faculty to appreciate these values as guiding principles of professional conduct throughout their careers.

Comment from 2006 VTR:

The architecture Program and the GSD have begun to look at the issues of studio culture, and have recently conducted a survey and studio study, the results of which have been distributed to the students and faculty. Yet while these steps have been taken, which include important suggestions that have had some impact on studio behavior(s), there is still no formal policy or set of procedures developed for implementing the policy. We encourage the School to complete this process that has been started and develop a written studio culture policy.

Response (2011):

A written Studio Culture Policy has been established at the GSD as the result of a school-wide study headed by the Dean of Students (Laura Snowdon) in conjunction with the Student Forum. The Policy is elaborated in section 1.1.2 "Learning Culture and Social Equity". Portions of the policy related to the duties of instructors are distributed to all GSD and visiting faculty; student-related portions can be found in the *Guide to Gund* (student handbook).

13.15 Sustainable Design

Condition:

Understanding of the principles of sustainability in making architecture and urban design decisions that conserve natural and built resources, including culturally important buildings and sites, and in the creation of healthful buildings and communities

Comment from 2006 VTR:

This condition is still Not Met. The department has recently refocused the curriculum to assure an understanding of the science and principles of sustainability (energy conservation) with the goal of inculcating the culture of sustainability throughout the

program and especially in the studios. Unfortunately, this program has not yet matured and evidence of principles of sustainability could not be found in the student work.

Response (2011):

Per the 2009 NAAB response to the Annual Report, this condition required no additional reporting, following the revision of lecture and assignment content within two required courses: Energy, Technology, and Buildings (6122, formerly 6112m2) and Environmental Technologies in Buildings (6125, formerly 6205). Syllabi for these courses are included in Appendix 1.

13.16 Program Preparation

Condition:

Ability to prepare a comprehensive program for an architectural project, including assessment of client and user needs, a critical review of appropriate precedents, an inventory of space and equipment requirements, an analysis of site conditions, a review of the relevant laws and standards and assessment of their implication for the project, and a definition of site selection and design assessment criteria

Comment from 2006 VTR:

No evidence of the student's ability to prepare a comprehensive architectural program was found in the material presented.

Response (2011):

Over the past several years, the curriculum covering Program Preparation has grown and evolved. In 2009 and 2010 exercises in building programming were incorporated into the 3rd semester core studio (1201). Since the spring of 2011, students are required to undertake Program Preparation and other aspects of SPC-B.1 Pre-Design in the 4th semester core studio (1202).

13.25 Construction Cost Control

Condition

Understanding of the fundamentals of building cost, life-cycle cost, and construction estimating.

Comment from 2006 VTR:

In the prior team visit, the team could not find evidence to satisfy the then criteria of "awareness." This team could not find evidence that would qualify for "understanding" of the fundamentals of building cost, life cycle cost and construction estimating. The Program should provide the students with an overview of all aspects of the subject with appropriate student response that demonstrates a level of "understanding."

Response (2011):

Over the past several years, the Department's curricular approach to addressing Construction Cost Control has evolved. Previous attempts to incorporate project finance and cost estimating into the 3rd semester core studio (1201) were considered unsuccessful and not suitable for the overall goals of that studio (which, as the Comprehensive Design Studio, already carried a large load of SPC requirements). Currently SPC-B.7 Financial Considerations are covered in the Building Technology (6230) and Issues in the Practice of Architecture (7212) courses.

B. Responses to Causes of Concern

Causes of Concern

The NAAB Team Visit

The rich faculty, student and physical resources were not well represented in the Architectural Program Report and the exhibits in the on-site Team Room. The APR relied too heavily on the overall attributes of the GSD and did not focus on the qualities of the M.Arch I Program under review. The Team Room initially presented only reductions of student work without the benefit of additional materials and the integration of supplementary written materials or physical models. The matrix and the course syllabi did not provide a concise summary of where evidence of conformance with the Conditions of Accreditation could be found. Considerable supplemental information was provided during the actual visit, which greatly aided the review. The Program could benefit by sending representatives to courses in APR and Team Room preparation that are offered regularly by the NAAB.

Response from Program

The 2011 APR has been prepared with great detail and a focus on the M.Arch I program. The Team should find all required information within, and it will be supplemented in great detail through examples of student work in all forms during the visit.

2. Summary of Responses to Changes in the NAAB Conditions

Detailed responses to changes in the 2009 Conditions of Accreditation, compared those in effect during the previous accreditation visit, are incorporated into texts accompanying the Student Performance Criteria Matrix in section 2.1. Broader responses to those changes -- and to the professional trends and societal forces motivating them -- are found throughout this *APR*, from the Program's Mission Statement in section 1.1.1 to the development of Learning and Studio Culture Policies in section 1.1.2 to discussions of Curriculum Review and Development in section 2.2.3. The Department of Architecture looks forward to a lively discussion of these changes and their impact on the evolution of our M.Arch program during the Accreditation Team's visit in spring 2012.

Appendix 1

Required Course Syllabi from Prior 2 Academic Years

1. Fall 2009
 - a. 1201: 3rd semester core studio
 - b. 2101m1: Visual Studies
 - c. 2102m2: Projective and Topological Geometry in Architecture
 - d. 4201-4202: Buildings, Texts, and Contexts
 - e. 4205m1: Buildings Texts, and Contexts
 - f. 6111m1: Materials and Construction
 - g. 6112m2: Energy, Technology, and Buildings
 - h. 6201: Analysis and Design of Building Structures I
 - i. 6204: Building Technology

2. Spring 2010
 - a. 1102: Second Semester Core: Introduction to Design and Visual Studies in Architecture
 - b. 1202: Fourth Semester Core: Urban Frameworks, Public Architecture, and the Environment
 - c. 4203m3: Buildings, Texts, Contexts
 - d. 4204m4: Buildings, Texts, and Contexts III, Nineteenth-Century Architecture
 - e. 6202: Analysis & Design of Building Structures II
 - f. 6203m3: City of Wood
 - g. 6203m4: Materials, Constructions, Processes
 - h. 6205: Environmental Technologies in Buildings
 - i. 7212: Issues in the Practice of Architecture

3. Fall 2010
 - a. 1201: 3rd Semester Core Studio: City and Self
 - b. 2101m1: Visual Studies
 - c. 2102m2: Projective Representation in Architecture
 - d. 2107m1: Digital Media I: Topics in Parametric and Generative Geometry and Modeling
 - e. 2107m2: Digital Media 2: Developing Dynamic Content through Still and Moving Image
 - f. 4201m1: Buildings, Texts, and Contexts
 - g. 4202m2: Buildings, Texts, and Contexts
 - h. 4205m1: Buildings, Texts, and Contexts, Modernity and Architecture 1900-1945
 - i. 4206m2: Buildings, Texts, and Contexts, Discourse and Practices of Postwar Architecture
 - j. 6111m1: Materials and Construction, An Introduction to Techniques, Composition, and Strategies
 - k. 6112m2: Energy, Technology, and Building
 - l. 6201: Analysis and Design of Building Structures I
 - m. 6204: Building Technology

4. Spring 2011
 - a. 1102: Second Semester Core: Introduction to Design and Visual Studies in Architecture
 - b. 1202: Fourth Semester Core: City/Code
 - c. 4203m3: Buildings, Texts, Contexts, Principles of Architecture: Renaissance Italy
 - d. 4204m4: Buildings, Texts, and Contexts III, Nineteenth-Century Architecture

- e. 6202: Analysis & Design of Building Structures II
- f. 6203m3: City of Wood
- g. 6203m4: Materials, Constructions, Processes
- h. 6205: Environmental Technologies in Buildings
- i. 7212: Issues in Architectural Practice & Ethics

Fall 2009 Syllabi

GSD 1201
3rd Semester Core Studio
Fall 2009

Instructors:
Nathaniel Belcher
John Hong
Timothy Hyde
Mariana Ibanez
Florian Idenburg
Jonathan Levi (coordinator)

“Housing and the New University”

Housing Today



The design of housing has been among the most persistent topics in the pedagogies of schools of architecture dating from the rise of 20th c. modernism as the dominant ideology in academia. Why housing? To begin, housing is at the core of the architect's commitment to the discipline as an arena of action going beyond the, perhaps merely, 'aesthetic', to function at the level of cultural and even political service. Building on its original meaning as a corrective to the damaging effects of industrialization, housing has come to be closely associated with the framing of the architectural project within the larger subject of the city. Housing fabric is the basic stuff of cities and lies at the fundamental intersection between the architectural and urban scales.

The problem for American schools of architecture has been that on the domestic scene, since the collapse of the post WW II public initiative, there has been largely no 'housing' *per se*. Housing here is a private affair and, except as the result of coarse zoning and financial tools, proffers little collective design intent and little coordination with the overall intent of the city. So the pursuit of large groupings of aggregated residences today is a somewhat esoteric exercise better related to the needs of other times and other places. There is, however, at least one prominent exception. That is in the current large scale movement among places of higher education to more fully house their student and faculty populations. This is a massive historical event resulting in the creation of many thousands of residential 'beds' requiring not just isolated building but also the restructuring of cities through the means of campus development.

The American University and its 'Campus'

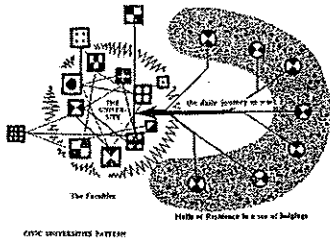
The author of this watershed movement in both housing and education is the American college and university – a unique phenomenon that today occupies an unassailable position of dominance on the world stage of higher education and research. Derived from English precedents at Oxford and Cambridge, the American College's primary feature – its residential life – is also a function of our predominantly single family housing situation. Whereas the urban universities of Europe house their students in surrounding stocks of apartments; U. S. colleges, surrounded by owner occupied residences, must attract and host students with institutional housing.

Thus provided, the housing has helped cultivate an intimate tutorial quality of intellectual

community that has come to typify our mode of higher learning. So, the 'campus' itself – the terrain of the academic collective – has been instrumental in transcending the rote transmission of information to support the creative discourses underlying the American college's capacity for intellectual innovation. This is a capacity which ultimately supported the development of the vastly productive American research university with its many links between abstract enterprises and concrete realizations.

Residential Imperatives

What exactly is the value of eschewing the European model of commuting to the place of discourse in favor of creating a specialized form of dwelling? In the case of an academic community, "dwelling" is a form of existence with a purposeful continuity of intent. In that place, few boundaries exist between experience and achievement. The acquisition, propagation and advancement of knowledge cannot be limited to formal divisions between living, pleasure and labor. There are not empty spaces in between them. The penetration of an idea or the mysterious arousal of original thought are invited by seemingly arbitrary moments of beauty and through chance spirited encounters between individuals. Learning and invention are formal and informal, conscious and unconscious, expected and unexpected. They arise out of a culture of contemplation and discourse where seemingly unrelated experiences can intersect and become aligned into structures of significance and truth.



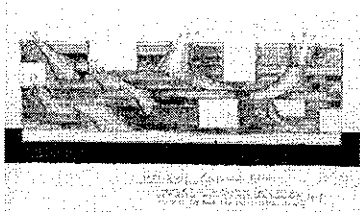
Influences on the Future

As successful as the American college and university has been, major internal forces are today at work calling into question the stability of this success and the relevance of its constituent parts to the future. Forming the backdrop to these forces are two larger organizational trends. First, there is the globalization of higher education. For decades in the United States this has taken the form of importing students to our shores with little major effect on the make-up of host institutions. Today, we are exporting our teaching faculties and, at an increasing scale, exporting whole physical plants to facilitate the delivery of American education to foreign populations at their homes. Second, within our own country, the largest group of institutions – the public universities and community colleges – are consolidating their claims on educational excellence by shifting away from a commuter model to a campus based residential one.

Interacting with these trends are several internal developments which are fundamentally altering the way knowledge is created, transmitted and conserved. These include:

- Differentiated teaching preparation of matriculants
- Student focused education
- Web-based learning
- Web-based socialization
- Collaborative group learning
- Interdisciplinary research and study
- Problem-based discourses

In short, the discourse format, the nature of the content and the nature of the recipient student him or herself are all in a state of profound flux. The student being the product of a preparatory pedagogy which acknowledges 'multiple intelligences' has come to expect a versatile form of education directed to his or her individual needs and aptitudes. Together



simmons hall, mit

with the market driven process of institutions competing ever more vigorously for student applicants, this has caused a movement away from the needs of faculty and administration bodies as the primary drivers of institutional goals. The faculty, representing their respective fields of knowledge, are also at the threshold of a major reorganization as the boundaries between disciplines begin to erode and the constitution of traditional departments becomes more an obstacle to the progress of knowledge than an asset. Overarching all is the evolution in human communication and, it could be argued, in human consciousness, caused by our contemporary simultaneous occupation of both the physical and virtual worlds.

Harvard in the Moment

Locally, our own university is contemplating the transformation of its own housing stock - essentially in two phases. Ultimately, in concert with the expansion of the campus across the river into Allston, there will be a new vision of university life and, necessarily, a new vision of the interactivity of housing with intellectual work. Associated with this new vision there will be new housing, or more accurately, multi-functional undergraduate 'houses' likely along the Allston riverfront.

The need for these houses is three-fold: first, to relieve overcrowding in the existing houses. Second, to provide swing space during the much needed extensive renovations of the old Cambridge houses. Third, and most idealistically, to expand the undergraduate population to allow greater access to a Harvard education by an ever increasing pool of highly qualified domestic and international students.

However, with recent changes in the university's financial outlook, the construction of these new houses will be postponed and the pressing need for transforming the existing housing will need to be accommodated more modestly on the Cambridge side of the river. For the most part, the immediate changes will be renovations of the existing houses, including reprogramming, 'mining' of underutilized spaces, and simple modernization. However, none of these approaches will adequately address overcrowding or the need for swing space. There will need to be new 'beds' and the locations for these will need to be threaded into the existing campus context.

Course Project

The purpose of this studio will be to study housing through the vehicle of the institutional question which is raised by the addition of new housing to the existing Harvard campus fabric. We will look at housing from the finest scale of human occupation to the arrangement of groupings in relation to the organization of campus and city. We will consider the individual and we will consider the grouping of individuals in relation to the institutional mission of intellectual exchange.

The specific project will be the creation of new *academic* housing to be located within two study areas in and around campus. The housing may be in the form of a separate 13th house or it may in the form of strategic additions to existing houses. An undergraduate house is both housing and an admixture of academic, cultural, social and athletic components. While the studio will be guided by the functions, needs and values of existing Harvard houses, our goal will be to espouse models of physical planning that provide for the future - not just the present or the past. Therefore, as to the nature of the activities provided for, we will need to carefully account for the currents that are pressuring the university today and try to anticipate the forces that are upcoming. Failing to do so is to fail to understand the nature

of institutions which are inherently long term enterprises.

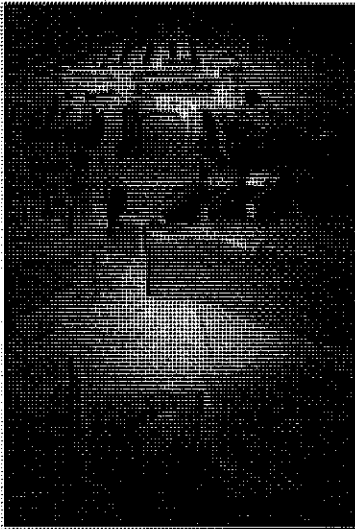
Course Organization

The course will be organized into two streams of parallel but mutually relevant work. In the first there will be a series of three study exercises spread through the first half of the semester, targeting areas of key interest but not necessarily directly incorporable into the main project. The study subjects will be issued at the beginning of class on Tuesdays to be completed and presented the following Thursday in a limited two hour pin-up at the beginning of studio. Also, on Tuesdays there will be a senior faculty studio lecture series drawing on the enormous wealth of knowledge residing here at the GSD relating to our subject.

The second stream consists of the pursuit of a primarily individual semester long project for a housing project based on group feasibility study work. The individual project will be supported by intervals of collaborative studio section work that will focus on the creation of the shared urban context, program and campus connections.

Attachments

Course Schedule
Section Assignments
First Group Review Deliverables
Feasibility study zones plan



Student proposal from addition to existing houses

Syllabus for 2101-MI: Visual Studies; Freehand Drawing
Fall Semester 2009
 Harvard University School of Architecture
 Adjunct Associate Prof. T. Kelly Wilson

Three Sections: **Section 1:** Monday, 9:00 - 1:00 - rm402, 7 Sumner Road, **Section 2:** Tuesday, 2:00 - 6:00 - rm402, 7 Sumner Road, **Section 3:** Thursday, 2:30 - 6:30 - rm402, 7 Sumner Road, **All Sections Lecture:** Thursday, 1:15 - 2:00 - III Gund Hall.

Week One	Workshop:	Site Drawing Architecture 1: Freehand Drawing of the Plan, Section and Perspective: West Hill Place.	
	Assignment #1	The Architectural Visual Essay 1	
	Lecture #1	The Role of Freehand Drawing for the Architect: Perception and Thinking	Critical
Week Two	Workshop:	Studio Drawing Construction 1: Measurement, Scale, Angle and Foreshortening.	
	Assignment #2	Studio Practice: Drawing Relationships: Measurement, Scale, Angle and Foreshortening.	
	Lecture #2	Touch, Narrative, and Structure: three primary issues of Drawing.	
Week Three	Workshop:	Site Drawing Architecture 2: Freehand Drawing the Plan, Section, Perspective: Boston Public Library Stair Sequence.	
	Assignment #3	The Architectural Visual Essay 2	
	Lecture #3	What Drawings Say, from the Plan to the Perspective.	
Week Four	Workshop	Studio Drawing Construction 2: Measurement, Scale, Angle and Foreshortening combined with Gesture.	
	Assignment #4	Studio Practice: Drawing Relationships, Measurement, Scale, Angle and Foreshortening with Gesture.	
	Lecture #4	Perceptual Ordering in Architecture: The Pantheon, and the Villa Farnesina.	Villa Julia,
Week Five	Workshop	Site Drawing Architecture 3: Freehand Drawing the Plan, Section and Perspective. Uncovering the Perceptual and Architectural Orderings of Aalto's Baker Dormitory Cafeteria Pavilion.	
	Assignment #5	The Architectural Visual Essay 3	
	Lecture #5	The Structure of Spatial Movement in Drawing: A comparative analysis of Piranesi's Carceri and the stage set designs of Bibeana.	

Week Six

Workshop

Perceptual Ordering of Space; The Tape Drawings.

Assignment #6

Tape Drawing: Spatial Expansion and Spatial Compression in Actual Architectural Space.

Lecture #6

The Advancing Wall of Modernism: A visual analysis of the watercolor 'North Gallery at Night' of J. M. W. Turner.

of the

Oct. 23

Review

All Assignments expected to take a minimum of 4 hours work.

Recommended Reading

The Art of Drawing, by Bernard Chaet, Holt, Rinehart and Winston. Chapters One through 14 available at the Harvard Coop

Projective and Topological Geometry in ArchitectureFall 2009
~~Fall 2008~~**Preston Scott Cohen, Cameron Wu****GSD 2102M2; Tuesday 2:00-5:00, GSD room 111
(additional workshop sessions TBA)****Teaching assistants: Ted Baab and Kent Gould**

Historically, certain kinds of reciprocity between geometry and architecture have been used to bring about rational causes and practical means of formal innovation. Today, the digital medium is having unanticipated effects on this reciprocity. The results are profound innovations not only in the realm of form as such, but also in the process of translating abstract geometric concepts into building construction principles.

Between the excesses of curved geometries and the economic constraints of building construction lies a seemingly incommensurable disparity. On the one hand, the digital medium affords the architect a means to model three dimensional forms that are entirely free of planarity. On the other hand, it aids the ongoing industrial production of materials according to the geometric extrusion of linear and flat components and surfaces. To operate in this breach, it is necessary to acquire a geometric vocabulary that operates between oblique and curved forms and the economically determined mechanical constraints of building assembly. This vocabulary, derived from projective and topological geometry, constitutes an auxiliary system of order, one which can ultimately serve to discretize curved surfaces into flat units, and thus translate complex surfaces into forms constructible at an architectural scale. Such an application of geometry produces a continually expanding repertoire of three-dimensional architectural form. Among the most far reaching effects is the recalibration of the long standing relationship between the part and the whole in architecture.

Lectures tracing historical and theoretical lineages and technical bases of orthographic and perspective projection, projective geometry and topology will provide the foundations for the development of a vocabulary. Workshop exercises will apply these principles to particular problems of surface redefinition. The rendition of curvatures according to the logic of different patterns will demand critical assessment. The overall course objective is to provide the tools and critical instruments to imagine and represent with precision, dexterity, and virtuosity, a continually expanding repertoire of three-dimensional architectural form.

Structure and Requirements of the Course

Throughout the course, lectures and demonstrations will provide the background and technical knowledge for the short weekly assignments. TAs will occasionally hold sessions during which basic computer modeling skills are provided.

Basis of grade: 60%: Development of assignments and attendance.
 40%: Final Project

October
28

Lecture 1:

Introduction: Projection as a basis for Representation and Tectonics

Technique:

1. Systems and planes of projection: Mongean collapse of 3-space.
2. Basic double projection Descriptive Geometry: line + plane typologies.
3. Construction of an oblique-plane volume.

Reference:

Booker, Peter J., *A History of Engineering Drawing*, London, 1963. (Chapters 1 and 5)

Roeber, William H., *The Mongean Method of Descriptive Geometry*, MacMillan Co. NY 1933, (pp. 1-11)

Alberti, Leon Battista, *On Painting*, 1434-36, Trans. J. Spencer, Yale, 1966.

Exercise 1:

Construction of a six-sided volume with oblique planar boundaries using techniques or Mongean double-projection.

Due date: November 04

November
04

Lecture 2:

Perspective and Anamorphosis; Introduction to Projective Geometry: Desargues Theorem

Painterly Anamorphosis vs. Architectural Oscillation - Case Studies: Villa Tauro; Sacristy San Carlo ai Catinari

Technique:

1. Desargues' Theorem
2. Brook Taylor's Perspective Method
3. "Elastic" projection space of Desargues and Taylor.

Reference:

Paul B. Yale. *Geometry and Symmetry*

Evans, Robin, "Translations From Drawing to Building", *AA Files* no. 12, Summer 1986. (also in *Translations From Drawing to Building and Other Essays*, MIT Press, 1997)

Cohen, Preston Scott, "Regular Anomalies: The Case of the Tubular Embrasure at the Sacristy of San Carlo ai Catinari", *AA Files* 41, Fall 2000

Exercise 2:

Model based on theorem of Desargues or Pascal. At least two pyramids or cones sharing intersections or planes. Requires conversion of two dimensional diagram of Desargues or Pascal into three dimensional model.

Due date: November 11

November

11:

Technique:

1. Blaise Pascal's Hexagonal Theorem and Conics:
 - a. circles and ellipses generated by a collection of points and tangent lines
2. Generation of cones:
 - a. surface produced by a generatrix and a directrix
3. Conic Sections:
 - a. ellipse
 - b. parabola
 - c. hyperbola
 - d. hyperbolic Paraboloid

Conics

1. Curve Fields (Isoparm curve field)
2. Swept and Ruled Surfaces
 - a. Definition
 - b. Hyperbolic Paraboloid
 - c. Hyperboloid of revolution
 - d. Right Helicoid

Reference:

Paul B. Yale. *Geometry and Symmetry*
Evans, Robin, "Translations From Drawing to Building", *AA Files* no. 12, Summer 1986. (also in "*Translations From Drawing to Building and Other Essays*", MIT Press, 1997)

Review: Exercise 02

November

18

Lecture:

Guest Lecturer: Antoine Picon
Secrecy and Innovation in the Architecture of Philibert Delorme

Technique:

1. Blaise Pascal's Hexagonal Theorem and Conics:
 - b. circles and ellipses generated by a collection of points and tangent lines
2. Generation of cones:
 - a. surface produced by a generatrix and a directrix
3. Conic Sections:
 - e. ellipse
 - f. parabola
 - g. hyperbola
 - h. hyperbolic Paraboloid

Conics

1. Curve Fields (Isoparm curve field)
2. Swept and Ruled Surfaces
 - e. Definition
 - f. Hyperbolic Paraboloid
 - g. Hyperboloid of revolution
 - h. Right Helicoid

Reference:

Paul B. Yale. *Geometry and Symmetry*
Evans, Robin, "Translations From Drawing to Building", *AA Files* no. 12, Summer 1986. (also in "*Translations From Drawing to Building and Other Essays*", MIT Press, 1997)

Review: Exercise 02

November 25

Lecture:

Case Studies of Geometric Problems in 20TH Century Architecture; Ruled Surfaces: Candella, Nervi, Belluschi; Patches: Utzon, Foster

Technique:

1. Developable surfaces
 - a. Definitions
 - i. Gaussian curvature
 - ii. Developability
 - b. Cone, piecewise unrolled
 - c. Extrusions
 - d. Combined patches of cones/extrusions
 - e. Surfaces from piecewise curves
 - f. Developable NURBS surface
2. Folded plates (this was accidentally left off syllabus when it was given out in 06)
3. Reflection Line Curve Fields and Conjugate Lines
 - i. Unifacial surface (mobius)
 - j. Focal line scroll

Review: Exercise 03

December 02

Lecture:

Guest Lecturer: George L. LeGendre, ijp corporation (London, UK)
Parametric Geometries and Modulations

Technique:

1. NURBS
 - a. Definitions, b-spline, control points,
 - b. Construction of NURBS curves (De Cateljau's algorithm)
 - c. Construction of NURBS Surfaces (Greg)
2. Braids, Knots, and spanning surfaces
 - a. Definitions, closed curves
 - b. Construction of spanning surfaces
 - c. Mobius surface

Reference:

Louis Kauffman, *On Knots*
Heirich W. Guggenheimer, *Differential Geometry*
Michael Henle, *A Combinatorial Introduction to Topology*

December 09

Lecture:

Case Study:
Miguel Fisac and the Tel Aviv Museum

Technique:

1. Discretization methods: Pre-rational and emergent surface behavior
 - a. Folded Plates
 - b. Ruled discretization (TAMA method)
 - c. Developable discretization by generatrix
 - d. Swept discretization
2. Discretization methods: Post-rationalization
 - a. Tangent planes + singularities
 - b. Discretization with deviation (Novartis)
 - c. Patches (Foster, Utzon)
 - d. Regions
3. Vorinoi spaces (combinatory topologies)

Reference:

- Alexandrov, P.S., *Combinatorial Topology*, New York, Dover, 1998
Carter, J. Scott, *How Surfaces Intersect in Space*.
Guggenheimer, Heirich W., *Differential Geometry*, 1977

GSD 4201-4202 BUILDINGS, TEXTS, AND CONTEXTS
Architecture Between History and Theory
Fall 2009

Instructor: Michael Hays, Erika Naginski
Teaching Fellows: Jana Cephas, Olga Touloumi
Tuesdays and Thursdays 10:00 – 11:30, Piper Auditorium

The two-module sequence 4201-4202 will be taught as a single semester-long course for Fall 2008. This course is structured as a dialogue between historical and theoretical frameworks that affect our understanding of architecture and its genesis. The organizing principle here is syncretic as opposed to chronological, and synoptic rather than merely factual. We treat a selected range of concepts developed by philosophers, historians, and theorists to explain the production and experience of architecture. We move back and forth between projects from the early modern to the (almost) contemporary periods by means of one or several theoretical intertexts, which we use to open up a historical narrative across examples.

We set the stage by means of the persistent dilemma of theoretical-historical thought, inaugurated here by concepts from Kant and Hegel: is art an autonomous form or is it determined by its historical context? We then turn to Classicism, its emergence as aesthetic doctrine during the Renaissance, its association with concepts of order and universality, its historiographic legacy, and its complex relation to Modernism. From there, we move to the interaction of ideology and representation; we discuss the symbolics of perspective, architectural metaphors of power in the Baroque period, and the discursive development and transformation of ideology in Althusser and Jameson. Deleuze is the major interlocutor in the next sections, which focus on the diagrammatic imagination, its philosophical roots in Leibniz, its use as a materialist social critique, and its implications for architectural design. Deleuze's elaboration of the diagram also serves as stepping stone first for a discussion of the Sublime in Enlightenment and Postmodernist contexts, and second for the key concepts of utopia, dystopia, and heterotopia, respectively. We conclude with the persistence of the Dialectic from Marx to Adorno to the present in order to address the production of space, the problem of abstraction, and the contemporary status of immanent critique.

Structure:

The module sequence is comprised of two lectures plus one discussion section per week. *All readings listed here are required.* These readings serve as the crucial background for class lectures and sections, and should be completed *before* each class. Further readings will also be suggested in class. Basis of grade: written assignments and participation in section discussions.

Assignments:

In addition to eight 1-2 pp. weekly responses to readings, there are three short written assignments as follows:

1. Critical Reading: 7-8 pp., a close analysis of one of the readings (TBA).

Assigned: Sept. 29

Due: Oct. 13

2. Short Prospectus and Bibliography: 3-5 pp., a compilation of primary and secondary references on an architectural project of your choice.

Assigned: Oct. 27

Due: Nov. 12

3. Manifesto: 5-6 pp., a short essay bringing some of the historical and theoretical frameworks addressed throughout the term to bear on your sense of what it means to practice design.

Assigned: Nov. 17

Due: Dec. 1

PROVISIONAL SCHEDULE OF READINGS AND LECTURE TOPICS

Introduction (3 Sept.)

Week 1 (8, 10 Sept.) Form or History?

- Immanuel Kant, *Critique of Judgment* (1790), trans. Werner S. Pluhar, (Indianapolis: Hackett, 1987), 98-144
- G. W. F. Hegel, *Introductory Lectures on Aesthetics* (London: Penguin Classics, 1993), 82-97
- Karl Marx, "Estranged Labor" section of "Economic and Philosophic Manuscripts of 1844," in *The Marx-Engels Reader* (Norton, 1978), 70-81

Week 2 (15, 17 Sept.) Classicism, Universality, Modernism

- Jacob Burckhardt, excerpt from "The Revival of Antiquity," *The Civilization of the Renaissance in Italy* (New York: Modern Library Paperbacks, 2002), 121-31
- Michel Foucault, "The Prose of the World," *The Order of Things: An Archaeology of the Human Sciences* (New York: Vintage Books 1994), 17-45

Week 3 (22, 24 Sept.) Ideology and Representation (I)

- Erwin Panofsky, excerpt from *Perspective as Symbolic Form* (New York: Zone Books, 1991), 27-45
- Louis Marin, "Classical, Baroque: Versailles, or the Architecture of the Prince," *Yale French Studies* 80 (1991): 167-182

Week 4 (29 Sept., 1 Oct.) Ideology and Representation (II)

- Louis Althusser, "Ideology and Ideological State Apparatuses" (1969), in *Lenin and Philosophy, and Other Essays* (New York: Monthly Review Press, 1971), 127-183
- Fredric Jameson, "Postmodernism, Or, The Cultural Logic of Late Capitalism," *New Left Review* 146 (July-Aug. 1984): 59-92

Week 5 (6, 8 Oct.) The Diagram and the Point of View

- Gottfried Wilhelm Leibniz, "The Monadology," *Discourse on Metaphysics and the Monadology* (New York: Prometheus Books, 1992), 67-88
- Gilles Deleuze, "The Fold," *Yale French Studies* 80 (1991): 227-247

Week 6 (13, 15 Oct.) The Diagram and the City

- Gilles Deleuze and Félix Guattari, "Rhizome versus Trees," in Constantin V. Boundas, ed., *The Deleuze Reader* (New York: Columbia University Press, 1993), 27-36
- Gilles Deleuze, "A New Cartographer," *Foucault* (Minneapolis: University of Minnesota Press, 1993), 23-44
- Catherine Ingraham, "Initial Properties: Architecture and the Space of Line," *Sexuality and Space* (New York: Princeton Architectural Press, 1992)

Week 7 (20, 22 Oct.) The Vicissitudes of the Sublime

- Edmund Burke, "Part II," *A Philosophical Enquiry into the Origin of our Ideas of the Sublime and the Beautiful* (Oxford: Oxford University Press, 1990), 53-79
- Jean-François Lyotard, "An Answer to the Question, What Is the Postmodern?" in *The Postmodern Explained* (Minneapolis: University of Minnesota Press, 1992), 1-16

Week 8 (27, 29 Oct.) Utopia, Dystopia, Heterotopia

- Manfredo Tafuri, "Reason's Adventures: Naturalism and the City in the Century of the Enlightenment," *Architecture and Utopia: Design and Capitalist Development* (Cambridge: The MIT Press, 1979), 1-40
- Michel Foucault, "Of Other Spaces" (1967), *Diacritics* 16 (Spring 1986): 22-27

Week 9 (3,5 Nov.) Dialectics and Space

- Henri Lefebvre, "Plan of the Present Work," *The Production of Space* (Oxford: Blackwell, 1991), 1-67
- Michel de Certeau, "Walking in the City," *The Practice of Everyday Life* (Berkeley: University Of California Press, 2002)
- Georg Simmel, "The Metropolis and Mental Life" (1903), in *The Sociology of Georg Simmel*, trans. and ed. Kurt H. Wolff (New York 1950)

Week 10 (10, 12 Nov.) Aura and Allegory

- Theodor Adorno, "On the Fetish Character of Music and the Regression of Listening" (1938), in A. Arato and E. Gebhardt, eds., *The Essential Frankfurt School Reader* (New York: Continuum, 1969), 270-299
- Walter Benjamin, "The Work of Art in the Age of Mechanical Reproduction" (1936), in *Illuminations* (New York: Schocken, 1969), 217-251

Week 11 (17, 19 Nov.) Mythologies

- Roland Barthes, "The Eiffel Tower," *The Eiffel Tower and Other Mythologies* (Berkeley: University of California Press, 1997), 3-17

Thanksgiving Week (24 Nov.)

Film Showing: Blade Runner

Week 12 (1 Dec.) Ways of Worldmaking: Open Dialogue

DISCOURSE AND PRACTICES OF POSTWAR ARCHITECTURE
GSD 4205M1: BUILDINGS, TEXTS, & CONTEXTS **Fall 2009**

Instructor: Timothy Hyde
 MW 10:00-11:30
 Piper Auditorium

Teaching Fellows: Brian Goldstein, Fallon Samuels

COURSE DESCRIPTION

The atomic bomb, spring break, existentialism, jet travel, the polio vaccine, the United Nations, the transistor radio, abstract expressionism, India and Pakistan, LSD, ISO containers, Pop Art, nylon, structuralism—these are some of the inventions that exemplify the extremity of political, economic, aesthetic, and cultural change that took place during the three decades following World War Two. Postwar architectural discourse showed a keen awareness of the importance of these changes, and postwar architectural practices consisted of concomitant attempts to accommodate them. This module explores these repercussions in architecture by following the broad transformations, extensions, and reorientations of architectural modernism. By 1945, the discursive center of gravity had shifted from continental Europe to the United States and Great Britain, and modernism was soon diffused through Latin America and parts of Asia as well. Though new works by the prewar masters—Le Corbusier, Mies van der Rohe, Walter Gropius, and Frank Lloyd Wright—continued to have a profound influence, diverse and different practices soon emerged in mainstream and peripheral architectural culture as parts of a broad reaction to the consolidated inheritance of prewar modernism. The lectures of this module will consider this reaction as a consequence of the postwar situation, in which the erosion of modernism's authority and legitimacy—the erosion of the 'grounds' of architecture—provoked varied attempts to reestablish the legitimacy of architectural practice. Several prominent themes of postwar architectural discourse will be presented, bound together by the conceit that postwar architecture was fundamentally a serial (and perhaps hopeless) attempt to recuperate a lost ground of architectural authenticity.

REQUIREMENTS

- 1) Attendance & Readings: Attendance at all lectures and all weekly section meetings with the Teaching Fellows is mandatory. Assigned readings should be completed before lectures, and reading notes prepared in advance of section meetings to facilitate your participation in discussion. The course reader will be available from Gnomon Copy, and the first week's readings are available on the course website. (This course assumes prior knowledge of the major architectural movements of the postwar period; for a general review see William Curtis, *Modern Architecture Since 1900*, chapters 26-30.)
- 2) Exhibition Visit: Students will be required to attend a gallery talk for the exhibition *Utopia Across Scales* at a date to be announced.
- 2) Site Visit: Prior to the end of the module, each student must visit one significant postwar building in the Boston area. A list of buildings will be provided.
- 3) Manifesto: Each student will be required to write a research paper 500-2000 words in length, on one selected postwar architectural project. The paper, to be conceptualized and written in the form of a manifesto, will be based on historical research and theoretical reflection upon the architectural concepts that the project sustains. A list of projects from which to select will be provided along with more detailed explanation of the manifesto format.

SCHEDULE OF READINGS AND LECTURE TOPICS

Week 1: Allegories of the Postwar: Modernism as Nationalism (Sept 2 & 9)

Giedion, Sigfried, Fernand Léger, and Jose Luis Sert. "Nine Points on Monumentality." [1943] In *Architecture Culture 1943-1968: A Documentary Anthology*, edited by Joan Ockman and Edward Eigen, 27-30. New York: Rizzoli, 1993.

Belluschi, Pietro. "The Meaning of Regionalism in Architecture." *Architectural Record* (December, 1955): 131-39.

Harris, Harwell Hamilton. "Regionalism and Nationalism." [1954] *Student Publication of the School of Design North Carolina State* 14, no. 5 (1965): 25-33.

Fanon, Frantz. "On National Culture" [1959] in *The Wretched of the Earth*. New York: Grove Weidenfeld, 1991.

Week 2: Philip Johnson's Glass House: Modernism as History (Sept 14 & 16)

Johnson, Philip. "House at New Canaan, Connecticut." *Architectural Review* 108, no. 645 (1950): 152-59.

Johnson, Philip. "The Seven Crutches of Modern Architecture," [1954] in *Philip Johnson: Writings*, 136-40. New York: Oxford University Press, 1979.

Rowe, Colin. "Neo-'Classicism' and Modern Architecture I," [1956] in *The Mathematics of the Ideal Villa*, 119-38. Cambridge: MIT Press, 1976.

Kubler, George. "The Classing of Things" in *The Shape of Time: Remarks on the History of Things*. New Haven: Yale University Press, 1962.

Week 3: Geniuses and Bureaucrats: Modernism as Expertise (Sep 21 & Sep 23)

Hitchcock, Henry-Russell. "The Architecture of Bureaucracy and the Architecture of Genius." *Architectural Review* 101, no. 601 (1947): 3-6.

Johnson, Philip. "A Symposium on How to Combine Architecture, Painting and Sculpture." *Interiors CX*, no. 10 (May, 1951): 100-05.

Fuller, Buckminster. "The Cardboard House." *Perspecta* 2 (1953): 28-35.

Adorno, Theodor W., and Max Horkheimer. "The Culture Industry: Enlightenment as Mass Deception," [1947] in *Dialectic of Enlightenment*, 120-131. New York: Continuum, 2000.

Wiener, Norbert. "Progress and Entropy" in *The Human Use of Human Beings: Cybernetics and Society*. Boston: Houghton Mifflin, 1950.

Week 4: Fact Follows Fiction: Modernism as Reality
(Sep 28 & 30)

"Doom Manifesto." In *Architecture Culture 1943-1968: A Documentary Anthology*, edited by Joan Ockman and Edward Eigen, 181-83. New York: Rizzoli, 1993.

Banham, Reyner. "The New Brutalism." *Architectural Review* (December, 1955): 355-62.

"Grouping of Dwellings" in *Team 10 Primer*, edited by Alison Smithson, 74-95. Cambridge: MIT Press, 1968.

Williams, Raymond. "Culture is Ordinary" [1958] in *Resources of Hope: Culture, Democracy, Socialism*. London: Verso, 1989.

Week 5: The Image of Architecture: Modernism as Communication
(Oct 5 & 7)

Anderson, Stanford. "Architecture and Tradition That Isn't 'Trad, Dad'." In *The History, Theory and Criticism of Architecture*, edited by Marcus Whiffen, 71-89. Cambridge: MIT Press, 1965.

Colquhoun, Alan. "Typology and Design Method." [1967] In *Essays in Architectural Criticism: Modern Architecture and Historical Change*, 43-50. Cambridge: MIT Press, 1981.

Venturi, Robert, and Denise Scott Brown. "A Significance for A&P Parking Lots, or, Learning from Las Vegas." *Architectural Forum* 128, no. 2 (March, 1968): 36-43.

Barthes, Roland. "The Rhetoric of the Image" [1964] in Gray, Ann, and Jim McGuigan, eds. *Studying Culture: An Introductory Reader*. London: E. Arnold, 1993.

Week 6: "Architecture is a Hoax": Modernism as Environment
(Oct 14)

Banham, Reyner. "Epilogue: The Meaning of Megastructure." In *Megastructure: Urban Futures of the Recent Past*, 196-216. London: Thames and Hudson, 1976.

Soleri, Paolo. "Arcology" and "The Characteristics of Arcology" in *Arcology: The City in the Image of Man*. Cambridge: MIT Press, 1969.

Hollein, Hans. "Everything Is Architecture." [1968] In *Architecture Culture 1943-1968: A Documentary Anthology*, edited by Joan Ockman and Edward Eigen, 459-62. New York: Rizzoli, 1993.

McLuhan, Marshall. "The Invisible Environment: The Future of an Erosion." *Perspecta* 11 (1967): 163-167.

DISCOURSE AND PRACTICES OF POSTWAR ARCHITECTURE
GSD 4205M1: BUILDINGS, TEXTS & CONTEXTS Fall 2009

SITE VISIT: Each student is required to visit one of the buildings listed below in category B or C. (You should visit all of the buildings in Category A at some point, but they do not count to fulfill this assignment.) You may visit at any time that is convenient to you, but you must email one photo of yourself standing in front of the building to your TF prior to the end of the module (October 16th). No grade will be assigned for the course until the photo has been received.

Category A

- *Peabody Terrace Housing: José Luis Sert
- *Holyoke Center: José Luis Sert
- *Science Center: José Luis Sert
- *Design Research: Ben Thompson [now the Crate&Barrel store]
- 44 Brattle: José Luis Sert
- TAC Office: The Architects' Collaborative (TAC) [behind 44 Brattle]
- *Carpenter Center: Le Corbusier
- *Harvard Graduate Housing: Walter Gropius/The Architects' Collaborative (TAC)
- *MIT Chapel and Kresge Auditorium: Eero Saarinen
- Baker House Dormitory: Alvar Aalto

Category B

- *First Unitarian/Universalist Church: Paul Rudolph (Marlborough St. & Berkeley)
- Blue Cross/Blue Shield Building: Paul Rudolph (Federal St. & Milton Place)
- *Health Services Building: Paul Rudolph (Cambridge St. & Sudbury St.)
- *Christian Science World Headquarters: I.M. Pei (Huntington Ave & Mass. Ave)
- *Boston Public Library Addition: Philip Johnson (Boylston St & Exeter)
- *Boston City Hall: Kallman, McKinnell (Government Center)
- *Putterham Branch Library [Brookline]: Walter Gropius/(TAC) (959 West Roxbury Parkway)
- *Jewett Arts Center [Wellesley College]: Paul Rudolph
- Academic Quad [Brandeis Univ.]: Walter Gropius/(TAC) (Olin-Sang Building on campus map)
- Dormitories [Brandeis Univ.]: Walter Gropius/(TAC) (Hassenfeld/East Quad on campus map)
- Six Moon Hill [Lexington]: TAC (development of private houses by the members of TAC)

Category C

Worcester, MA:

- Goddard Library, Clark University: John Johansen
- Dormitory, Clark University: Walter Gropius/(TAC)

Williamstown, MA:

- *The Folly at Field Farm: Ulrich Franzen

Dartmouth, MA:

- *UMass Campus: Paul Rudolph

New Canaan, CT:

- *Glass House: Philip Johnson

New Haven, CT:

- *Art & Architecture Building: Paul Rudolph
- *Yale Art Gallery: Louis Kahn
- *British Art Center: Louis Kahn
- Morse & Stiles Colleges: Eero Saarinen
- *Ingalls Rink: Eero Saarinen
- Kline Biology Tower: Philip Johnson

Exeter, NH:

- *Exeter Library: Louis Kahn

*Access to all or part of the building is public, or at least relatively easy to obtain. It may be more difficult or impossible for you to get inside the buildings not marked with an asterisk.

DISCOURSE AND PRACTICES OF POSTWAR ARCHITECTURE
GSD 4205M1: BUILDINGS, TEXTS & CONTEXTS Fall 2009

MANIFESTO: Each student is required to write a manifesto for one of the projects on the attached list of postwar architecture. The manifesto must be based upon research into the concept, history, and realization of the project, as well as theoretical reflection upon the architectural concepts that the project sustains. In your research, you should take into account the larger context of the architect's other work and the disciplinary and discursive settings in which he/she/they practiced. This research, although it will not be explicitly presented in the text of the manifesto, will be the proof upon which the declarations of the manifesto rest. The primary purpose of this assignment is to attempt the construction of a polemical argument on architectural principles. In this case, the principles will be those you discern within a postwar architectural project. They will not necessarily accord with your own—nor should they because you must be able to articulate those principles in terms of the actual postwar historical context and intentions of the project—but the style and method of argumentation should be entirely your own creation.

Format: Architects have frequently made recourse to the genre of the manifesto, which could in a sense be regarded as the progeny of the architectural treatise. Modernist architects (and artists) were especially quick to adopt the form—think of the writings of Adolph Loos, Le Corbusier, Hannes Meyer, de Stijl, and Frank Lloyd Wright. In brief, declarative texts they enunciated the basic principles of the new architecture and denounced the limitations of the lingering influence of the nineteenth century. The essential intent of a manifesto is polemic. It advances claims, stakes out principles, and defines its real or imagined opposition. In the most powerful examples, the character of the text itself—its grammar, vocabulary, and phrasing—clarifies and reinforces the argument. (The staccato rhythm of Hannes Meyer's "On Building" is a good example.) This assignment will require you to pay careful attention to the form and style of your writing, from the choice of words, to the length of sentences, to the depth and detail of description. You may choose to write in the first person. Emphasis should be placed less upon the presentation of historical *information* and more upon the compelling argumentation for a historical *position*. The manifesto should be between 500 and 2000 words, written in a manner that reinforces the polemical thrust of the text. Illustrations are not permitted. For example manifestos and manifesto formats, you may examine texts in Joan Ockman, Ed., *Architecture Culture 1943-1968: A Documentary Anthology* or Ulrich Conrads, *Programs and Manifestoes on 20th-Century Architecture*.

Deadlines:

Wednesday, October 7th – Draft and bibliography of sources [*Due in lecture. There will be no extensions to this deadline. Late drafts will not be accepted.*]

Wednesday, October 14th – TFs will return your drafts with comments

Wednesday, October 21st – Revised, final version of Manifesto [*due in TF mailbox at 12pm*]

Project List for Manifesto:

Alvar Aalto: Town Hall, Säynätsalo, Finland (1949-52)
John Andrews: Scarborough College, Toronto, Canada (1964-66)
Atelier 5: Siedlung Halen, Berne, Switzerland (1961)
Jacob Bakema & Johannes van den Broek: Church, Nagele, Holland (1960)
Lina Bo Bardi: Museu de Arte de São Paulo, SP Brazil (1962)
Edward Larrabee Barnes: Walker Art Center, Minneapolis, Minnesota (1968-71)
Edward Larrabee Barnes: Haystack Mountain School, Deer Isle (1959-60)
Pietro Belluschi: Central Lutheran Church, Portland, Oregon (1950-51)
Ricardo Bofill: Walden 7, Barcelona (1970-74)
Gottfried Böhm: Pilgrimage Church, Neviges, Germany (1965-68)
Marcel Breuer: Whitney Museum of American Art, New York (1963-66)
Felix Candela: Cosmic Ray Pavilion, Mexico City (1950-51)
Felix Candela: Iglesia de la Virgen Milagrosa, Mexico City (1954-55)
Eladio Dieste: Church of Atlántida, Uruguay (1958)
Giancarlo de Carlo: Free University, Urbino, Italy (1962-65)
Ralph Erskine: Byker Redevelopment Housing, Newcastle-on-Tyne (1969-82)
Bruce Goff: Ford House, Aurora, Illinois (1947)
Bertram Goldberg: Marina City, Chicago (1960-64)
Herb Greene: House on the Prairie, Oklahoma (1961)
Charles Gwathmey: Gwathmey House, Amagansett (1965-67)
John Johansen: Mummers Theatre, Oklahoma City (1966-70)
Kiyonori Kikutake: Miyakonojo Civic Center, Japan (1965-66)
Henry Klumb: Universidad de Puerto Rico Student's Center, Rio Piedras, PR (1948-1957)
Kisho Kurokawa: Nakagin Capsule Tower, Tokyo (1970-72)
Denis Lasdun: National Theatre, London (1967-76)
Sigurd Lewerentz: Markuskyrka, Sweden (1960)
Charles Moore, Lyndon, Turnbull, Whitaker: Sea Ranch Condominiums, Sea Ranch, CA (1963-65)
Juan O'Gorman: University Library, University City, Mexico City (1950-53)
Claude Parent & Paul Virilio: St Bernadette of Banlay Church, France (1964-66)
William Pereira: Central Library, University of California San Diego (1966-70)
Gio Ponti: Denver Art Museum, Denver (1971)
Jean Prouvé: Meudon Houses, Meudon, France (1949-50)
Ralph Rapson: Guthrie Theater, Minneapolis, Minnesota (1963)
Ernesto Rogers (BBPR): Torre Velasca, Milan (1956-58)
Paul Rudolph: Milam House, Jacksonville, Florida (1960-62)
Eero Saarinen: Morse and Stiles Colleges, Yale University (1958-62)
Moshe Safdie: Habitat, Montreal (1967)
Hans Scharoun: Berlin Philharmonie Concert Hall, Berlin (1956-63)
José Luis Sert: US Embassy, Baghdad (1955-59)
Carlo Scarpa: Castelvecchio Museum, Verona (1956-64)
Skidmore, Owings & Merrill (SOM): U.S. Air Force Academy (1954-62)
Roland Simounet: Djenan-el-Hasan Housing, Algeria (1956-58)
James Stirling: History Faculty Building, Cambridge University, UK (1964-66)
Edward Durrell Stone: 2 Columbus Circle, New York (1962)
Kenzo Tange: Kurashiki City Hall, Kurashiki, Japan (1958-60)
Kenzo Tange: Yamanashi Press and Radio Center, Kofu, Japan (1961-67)
Clorindo Testa: Bank of London and South America, Buenos Aires (1960-66)
O.M. Ungers: Unger House, Cologne (1959)
Jørn Utzon: Sydney Opera House, Sydney (1957-73)
Jørn Utzon: Kingohusene housing project, Elsinore, Denmark (1960)
Aldo Van Eyck: Orphanage, Amsterdam (1957-62)
Minoru Yamasaki: Woodrow Wilson School, Princeton NJ (1961-65)

GSD-6111-M1: Materials and Construction
An Introduction to Techniques, Composition and Strategies
<http://isites.harvard.edu/icb/icb.do?keyword=k62975>

FALL 2009 SYLLABUS

Course description

This modular course introduces students to fundamental properties and behaviors of buildings and other structures. Principles of design and construction are discussed in a comprehensive manner involving conceptual, historical, and technical analyses. Students learn to evaluate empirically various types of constructs and use analytical skills to enhance their design capabilities. Lectures will cover fundamental statics; types of loads and reactions; material properties and fabrication; issues of joinery; classifying types of construction; and related topics. Abstract and architectonic exercises involving both intuitive and analytical design approaches will take place in a workshop format, with students working both individually and in teams.

The title "Materials and Construction" describes a fundamentally reciprocal relationship between these two terms as they are used in architecture. Just as there can be no meaningful discussion of construction systems without simultaneously considering the materials to be deployed, similarly, the inherent structural and expressive qualities of specific materials (such as wood, brick, steel, concrete, glass, or plastic) have been tested and are best exemplified by their use in the built environment. As the introductory course within a five-semester series of technology-focused courses in the M.Arch-1 program, "Materials and Construction" provides an overview of structural and constructive systems in use today as well as in earlier times. Lecture topics build from a fundamental, non-quantitative understanding of static behavior to describe generic structural approaches to a variety of formal challenges. Structural principles are progressively introduced and paired with instances of related construction or building types. Class assignments (see below) challenge students to engage lecture material in a hands-on manner, relying both on analytical and creative modes of thinking.

Class meetings

Tuesdays and Thursdays, 11:30am to 1:00pm, room 111.
 Additional workshop hours may occasionally be scheduled.

Instructors

Michael Meredith meredith@gsd.harvard.edu
 office: 219a Gund Hall
 office hours: Wednesdays, 9:00 to 11:00am

Mark Mulligan mulligan@gsd.harvard.edu
 office: 215b Gund Hall
 office hours: Wednesdays, 10:30am to 12:00 noon

Teaching assistants

Justin Fowler	jfowler@gsd.harvard.edu	Yael Erel studio
Sophia Lau	slau@gsd.harvard.edu	Danielle Etzler studio
Almin Prsic	prsic@gsd.harvard.edu	Eric Howeler studio
Stephen Saude	ssaude@gsd.harvard.edu	Ingeborg Rocker studio
Ming Thompson	mthomps@gsd.harvard.edu	Elizabeth Whittaker studio
Nellie Yang	nyang@gsd.harvard.edu	Cameron Wu studio

As noted above, one teaching assistant will be assigned to each of the six studio groups in first-year M.Arch-1 core; TAs will be available to mentor students with their assignments, in the studio or in the workshops, during regularly scheduled hours outside of class (to be announced).

Assignments

There will be three assignments over the course of the module's seven weeks, due at regular intervals (roughly every two weeks). Assignments are designed to encourage students to develop a hands-on, empirical approach to form-making through the sequential assemblage of elements; these are intended to challenge and improve students' skills in fabricating components for and constructing objects and structures in real scale. By working iteratively, students should learn to anticipate certain behaviors and incorporate structural concepts in their designs.

The first exercise (due Tuesday 15 September) asks students to investigate the physical properties – and other design qualities – of a few simple materials in the making of a performative object. Working in teams of three, students should produce a sculptural apparatus that must perform in a specific manner – predictable according to theoretical laws as well as iterative, empirical testing – while simultaneously expressing the diverse structural roles of its components by shaping. The second assignment (due Sunday 27 September), to be completed on an individual basis, involves plan and section analysis of a variety of buildings – real and hypothetical – and imagining proposals for structural solutions. The third and final assignment (due Tuesday 13 October) asks students, working in teams, to design and build a full-scale, semi-enclosed structure using commonly found, lightweight materials; structures must contend with all the forces commonly found in an exterior environment, such as wind and rain. Further specifications for each assignment will be announced in the project brief.

Readings

Readings are assigned on a scheduled basis, to coincide with and reinforce material introduced in lectures. These readings are drawn from a variety of sources, rather than from a single textbook. While diverse in perspective and tone, the readings share an essentially non-quantitative, empirical approach to the understanding of statics, construction, and materials. All required readings can be found online and downloaded in PDF format. Students interested in suggestions for further reading on individual topics are urged to consult the course bibliography.

Grading

Final grades for the module will be based on the quality of work evident in individual and team assignments, as well as class participation, according to the following weights:

1 st assignment (team):	20%
2 nd assignment (individual):	20%
3 rd assignment (team):	40%
Class participation:	20%

GSD-6111-M1: Materials and Construction

An Introduction to Techniques, Composition and Strategies

FALL 2009

Michael Meredith and Mark Mulligan

CLASS SCHEDULE AND TOPICS

1. Th 3 Sept: Course overview

Introduction to architectural technology and its role within the practice of design. Structure, construction, and tectonics. Empirical and intuitive approaches to reading structure. Overview of technology-related courses within the M.Arch-1 program, as well as the relationship between technology courses and core studios. Quiz (survey). First assignment: "tectonic equilibrium".

2. Tu 8 Sept: Equilibrium

Quiz discussion: answers and statistics. Equilibrium: gravity and balance in simple objects and complex assemblages; centers of gravity. Forces modeled as vectors: action-and-reaction. Gravity, uplift, and lateral loads; dead, live, and dynamic loads; point and distributed loads. Tension, compression, overturning, shear, bending, and torsion. Material considerations: tension-only and compression-only structures. Structure in sculpture. Workshop tours to be scheduled by section, outside of class time.

3. Th 10 Sept: Form-active structures

Relationships between loads, stresses and forms. Funicular structures in tension and compression. Tension cables; catenary and parabolic curves; suspension bridges. Compression structures: walls, arches, vaults, and domes. Outward thrust + stabilization. Funicular modeling techniques. Masonry construction in brick, stone, rammed earth, and adobe.

4. Tu 15 Sept: PROJECT REVIEW: "Tectonic Equilibrium"

5. Th 17 Sept: Horizontal spans 1

Linear spanning members: trusses and beams. Truss: definition and method of analysis (via joints and vectors). Truss configurations. Bending and shear in beams. Structural hierarchy in spanning members: horizontal load paths. Spanning between masonry walls: examples.

6. Tu 22 Sept: Columns, walls, and lateral stability

Short and long columns and their modes of failure. The influence of joinery on column shaping and behavior. Bracing cables, shear walls and other modes of providing lateral stability. Timber construction methods: heavy timber-frame, balloon frame, platform frame, and others construction typologies.

7. Th 24 Sept: Frames

Rigid and hinged joints. Framing and load paths: plan-section analyses (demonstration within different building types. Steel frame construction: low- and high-rise typologies. Glass houses and other lightweight constructions. Weekend analysis assignment: "framing between the planes" – due to be submitted online Sunday evening, 27 September.

8. Tu 29 Sept: REVIEW OF WEEKEND ASSIGNMENTS

Announcement of final project assignment: "inflatable canopy". Construction workshop, with how-to manual.

9. Th 1 Oct: Horizontal spans 2

Two-way spanning structures: reinforced concrete slabs (flat, ribbed, waffle, and other). The role of steel in reinforced concrete construction: rebar, pre- and post-tensioning. Long-span, surface-active structures: concrete shells and domes, tensile fabric, and tensegrity structures and associated building types.

10. Tu 6 Oct: Workshop

In-class presentation and discussion of final project sketches and models.

11. Th 8 Oct: Site considerations

Externalities: site, geography, soils and climate. Shallow and deep foundation systems. Problems of structural movement and settlement. Contingencies on "pure" structure; ramifications for building enclosure and non-structural detailing.

12. Tu 13 Oct (tentative): PROJECT REVIEW: "Inflatable Canopy"

GSD-6111-M1: Materials and Construction

An Introduction to Techniques, Composition and Strategies

FALL 2009

Michael Meredith and Mark Mulligan

READINGS

Th 3 September: Course overview

1. Eduard F. Sekler, "Structure, Construction, Tectonics" in *Structure in Art and in Science*, Gyorgy Kepes, editor (New York: George Braziller, Inc. 1965), pp 89-95.

Tu 8 September: Equilibrium

1. Daniel Schodek, "Force, Moment, and Equilibrium", "Stability and Balance", and "Sculptures with Balancing Elements: Real and Illusory Balance" = Chapters 4, 5, and 6 in *Structure in Sculpture* (Cambridge: MIT Press, 1993), pp. 42-85.
2. Mario Salvadori, "The Message of Structure" = Chapter 17 in *Why Buildings Stand Up: The Strength of Architecture* (New York: W.W. Norton & Co., 1980), pp.288-302.

Th 10 September: Form-active structures

1. Mario Salvadori, "Bridges" = Chapter 9 in *Why Buildings Stand Up*, pp. 144-164.
2. Akos Moravanszky, "Masonry" in *Constructing Architecture: Materials, Processes, Structures: A Handbook*, 2nd Edition (Basel: Birkhäuser, 2008), Andrea Deplazes, ed., pp. 22-55.

See also for reference:

Heino Engel, "Form-active Structure Systems" = Chapter 1 in *Structure Systems* (New York: Van Nostrand Reinhold Co., 1997), pp. 56-131.

Tu 15 September: PROJECT REVIEW

No readings

Th 17 September: Horizontal spans 1

1. Mario Salvadori, "Beams and Columns" = Chapter 5 in *Why Buildings Stand Up*, pp. 72-89.

See also for reference:

Heino Engel, "Vector-active Structure Systems" and "Section-active Structure Systems" = Chapters 2 and 3 in *Structure Systems*, pp. 132-209.

Tu 22 September: Columns, walls + lateral stability

1. Andrea Deplazes, "Timber" in *Constructing Architecture*, pp. 77-112.
2. Josef Kolb, "Construction Systems" (excerpts online) in *Systems in Timber Engineering* (Basel: Birkhauser, 2008), pp. 36-41, 54-61.

Th 24 September: Frames

1. Alois Diethelm, "Steel" in *Constructing Architecture*, pp. 113-138.

Tu 29 September: ANALYSIS PIN-UP

No readings

Th 1 October: Horizontal spans 2

1. Mario Salvadori, "Form-resistant Structures" = Chapter 11 in *Why Buildings Stand Up*, pp. 179-205.
2. Andrea Deplazes, "Concrete" in *Constructing Architecture*, pp. 56-76.

Recommended but not required:

Heino Engel, "Surface-active Structure Systems" = Chapter 4 in *Structure Systems*, pp. 210-265.

R. Buckminster Fuller, "Conceptuality of Fundamental Structures" in *Structure in Art and in Science*, pp 66-88.

Cyril Stanley Smith, "Structure, Substructure, and Superstructure" in *A Search for Structure Selected Essays on Science, Art, and History* (Cambridge: MIT Press, 1981), pp. 54-68.

Tu 6 October: WORKSHOP

1. Mario Salvadori, "Tents and Balloons" = Chapter 15 in *Why Buildings Stand Up*, pp. 259-277.
2. Antfarm, "Inflatocookbook" (Inflatable Manifesto), self-published pamphlet, 1971.

Th 8 October: Site considerations

1. Alois Diethelm, "Foundation – Plinth" in *Constructing Architecture*, pp. 169-185.
2. Carles Vallhonrat, "Tectonics Considered: Between Presence and Absence of Artifice" in *Perspecta 24* (New York: Rizzoli, 1988), pp. 122-135

ANNOTATED BIBLIOGRAPHY

Allen, Edward. *Fundamentals of Building Construction: Materials and Methods*, 5th Edition. New York: John Wiley & Sons, 2008.

Comprehensive reference on contemporary American construction methods at small and large scales. Focus on principles and process, with many diagrams and construction photos.

Bechthold, Martin. *Innovative Surface Structures: Technologies and Applications*. London: Taylor & Francis, 2008.

State-of-the-art reference on surface structures and recent computational innovations revolutionizing their design. Though the main text assumes readers already understand structural and computational principles at an advanced level, the book's introductory section (on the history and fundamentals of shell structures) is recommended for all interested students.

Deplazes, Andrea, ed. *Constructing Architecture: Materials, Processes, Structures: A Handbook*, 2nd Edition. Basel: Birkhäuser, 2008.

Excellent new reference on construction methods, focusing on the relationship between material, structure, and architectural forms; examples mostly from European architecture.

Engel, Heino. *Structure Systems*. New York: Van Nostrand Reinhold Co., 1997.

An elaborate visual catalog of structural approaches; mainly illustrations, with brief texts to explain the essential aspects of each configuration.

Fitchen, John. *Building Construction Before Mechanization*. Cambridge: MIT Press, 1986.

Thoughtful exploration of pre-modern building techniques based on historical texts and contemporary research. Useful for understanding the relationship between structure and form in older buildings.

Guthrie, Pat. *The Architect's Portable Handbook: First-Step Rules of Thumb for Building Design*, 3rd Edition. New York: McGraw-Hill, 2003. (Revised 4th edition due out in March 2010).

Concise, professionally-oriented reference book, providing rule-of-thumb solutions for typical design problems; the chapter on structural systems may be a useful reference for this course.

Kolb, Josef. *Systems in Timber Building*. Basel: Birkhauser, 2008.

As the title suggests, an overview of timber systems in contemporary building, with heavy focus on European construction.

Salvadori, Mario. *Why Buildings Stand Up: The Strength of Architecture*. New York: W.W. Norton & Co., 1980.

Popular text on structural behavior in buildings from ancient times to today; explains structural principles in simple, visual, non-quantitative manner.

Schodek, Daniel L. and Martin Bechthold. *Structures*, 6th Edition. Englewood Cliffs, NJ: Prentice-Hall, Inc., 2007.

The classic textbook on structures used in architecture schools around the world (including the GSD – this is the textbook for GSD-6201 and 6202). The book gives in-depth, mathematically derived explanations for physical behavior of buildings and building elements and introduces analytical tools for advanced structural design; a useful (though advanced) reference for this course.

Schodek, Daniel L. *Structure in Sculpture*. Cambridge: MIT Press, 1993.

Excellent guide to structural behavior in non-architectural constructs, focusing on empirical readings of bodies in equilibrium. Our first exercise is inspired by this book's main premise.

Zalewski, Wacław and Edward Allen. *Shaping Structures: Statics*. New York, John Wiley & Sons, 1998.

Classic reference text on the subject of correlating stress analysis and form-making in structures. Well illustrated with freehand sketches and mathematical and graphic analyses.

Catalogue Code: 6112.m2

Department: Architecture

Energy, Technology and BuildingsTerm: ~~Fall 2008~~
Fall 2009

Instructor:

Christoph Reinhart (reinhart@gsd.harvard.edu)

Teaching Assistants:

Diego Ibarra (dibarra@gsd.harvard.edu)

Kera Lagios (klagios@gsd.harvard.edu)

Holly Wasilowski (hwasilow@gsd.harvard.edu)

Time & Location:

Fridays 8:30 - 10:00, Piper

Wednesdays (Oct 28, Nov 11, Nov 18, Nov 25)

Prerequisites:

None

Course Description

This is a required two-credit course for all MArch I students that is closely linked to the GSD's new cross-departmental course '6212: Sustainability for Planning and Design'. Students enrolled in 6112.m2 are not required to enrol in 6212 but will be required to attend all lectures offered through 6212 as well as a series of additional tutorials. These tutorials will take place on four Wednesdays (October 28, November 11th, November 18th and November 25th(not required)) from 1 PM to 2 PM in Room 111. There will also be a fifth, mandatory tutorial on the use of HOBO data loggers on Monday, November 2nd, from 6 PM to 8 PM also in Room 111. A description of the tutorials and related 6212 lectures is provided below.

Requirements

Attendance of all 6212 lectures and 6212.m2 tutorials. Unexcused absence from more than two lectures/tutorials will lead to a failing grade. Students will also have to complete a series of assignments that will deepen their understanding of what has been discussed in the lectures and/or tutorials. Grades will be determined based on the quality of the submitted assignments as well as participation in class discussions.

Please submit your assignments in time! Late assignment will not be accepted.

Date	Type and Title	Description
Oct 28	Tutorial: My Energy	Following a brief course introduction, this tutorial will deal with societal and personal energy use, the concept of primary and secondary energy and its relevance for buildings.
Oct 30	Lecture: Microclimate	This class will discuss how local climatic conditions (solar radiation, wind, temperature and relative humidity) are measured, their effect on the human body, the sensation of thermal comfort, and how basic building design principles can help to mediate between ambient and indoor environmental conditions.
Nov 2	Tutorial: HOBO data loggers	This tutorial will teach you how to use Onset HOBO data loggers to measure temperature and relative humidity over time.
Nov 11	Tutorial: Site Analysis	This tutorial will expose you to the Ecotect Weather Tool and explain several ways of how to use local climate data to influence building design decisions.
Nov 13	Lecture: Light	This class will introduce the basic phenomena of light (natural and electric light) as well as the availability and constantly changing quality of daylight throughout the year. We will then discuss visual comfort and glare and review recent medical findings on the relationship between daily light exposure and human health.
Nov 18	Tutorial: Daylight Plug-In for Rhino	This tutorial will introduce you to a new Plug-In for Rhino that is being developed at the GSD and that allows you to calculate daylight factor distributions and other daylighting metrics.
Nov 25	Tutorial: Daylight Plug-In for Rhino and Grasshopper	Attendance of this tutorial is voluntary. We will teach you how to combine the earlier introduced Daylighting Plug-In for Rhino to carry out parametric runs of the daylighting performance of your designs (see also www.gsd.harvard.edu/research/gsdsquare/ABPS.html).

Bibliography

All course information required for completing the assignments will be provided through the lecture and tutorial notes. However, the following textbooks are recommended for additional reading. An overview of the different books will be provided in class.

- Alison G Kwok, Walter T Grondzik, *The Green Studio Handbook* (1st edition) Elsevier Ltd., ISBN 0-7506-8022-9 (paperback), 2007.
- Norbert Lechner, *Heating, Cooling, Lighting: Design Methods for Architects* (2nd edition), John Wiley & Sons, ISBN: 0-471-24143-1 (hardcover), 2001 (~\$85)
- Stephen Szokolay, *Introduction to architectural science* (1st edition) Elsevier Ltd., ISBN 0-7506-5849-5 (paperback), 2004 (~\$40)
- G. Z. Brown and Mark DeKay, *Sun, Wind & Light: Architectural Design Strategies* (2nd edition), John Wiley & Sons, ISBN: 0-471-34877-5 (paperback), 2001 (\$65)

Syllabus

Course Description

This course introduces students to the analysis and design of building structures. The fundamental principles of statics, structural loads and rigid body equilibrium are considered first. The course continues with the analysis and design of steel and timber beams, columns and trusses, using analytical methods and a computer program. The quantitative understanding of inner forces and moment, stresses and deformations are integral part of the learning process. The course also introduces students to the design principles of structural systems, and specifically addresses the design of systems to resistance lateral loads.

The following course offered in the spring term (GSD 6202 Analysis and Design of Building Structures II) addresses the analysis and design of structural elements such as 3-D trusses, arches, cable structures, continuous beams, rigid and braced frames, shear walls and plates. It also introduces advanced topics such as shells and tensile structures, seismic design and high-rise buildings. The use of structural elements in a building context and simplified methods of analysis of indeterminate structures are considered. In addition to timber and steel systems GSD 6202 introduces structural reinforced concrete (beams, columns) and considers the concept of pre-stressing. Issues of lateral load resistance are considered in continuation of GSD 6201.

In both of these courses, simplified methods of quantitative analysis will be introduced. Students are expected to have completed all prerequisites in mathematics and physics. Material for the review of this necessary background material will be provided because it will not be reviewed in class. Computer-based structural analysis programs will be introduced during the course. Together with its second part, GSD 6202, this course:

- Provides an understanding of the behavior of most structural systems.
- Gives students an exposure to basic structural concepts, simple calculations and the use of computer tools applicable in the early stages of the design process in order to select and size the most appropriate structural systems.
- Teaches the engineering language in an effort to improve the communication with the engineers in the design team

Topics:

- Statics: Forces and Moments (vector manipulation, moment calculation, graphical and numerical methods)
- Equilibrium and Reactions (rotational and translational equilibrium)
- Loads and loads modeling (types of loads, flow of forces, load calculations)
- 2-D Trusses (Truss stability, method of joints, method of sections)
- Internal Forces and Moments (Axial, Shear and Bending Moment Diagrams)
- Mechanical Properties of Materials (Stress, Strain, Elasticity, Plasticity, Temperature Effects, also Embodied Energy and Carbon)
- Elastic Design of Steel and Timber Beams for Bending and Deflections (moment of inertia, allowable strength design)
- Shearing, Torsion and Bearing Stresses in Beams
- Column Design: Long and Short Columns in Steel and Timber
- System Design
- Lateral Stability: Design for Lateral Forces

Prerequisites:

GSD first semester building technology courses

Class Format:

The class is divided into 3 phases:

Phase 1 covers the fundamentals without addressing specific structural systems.

Phase 2 gives an overview over structural systems, and introduces the detailed design and analysis of trusses, beams and columns.

Phase 3 introduces general design principles of structural systems and is centered on the design workshop.

The class is structured in a weekly cycle, typically beginning on Friday with the lecture and homework assignment and ending on Wednesday afternoon in class. On Monday morning there will be an optional review session for the group homework, case study, or to answer any other questions. Here students are also encouraged to bring studio projects and discuss general structural issues with the instructor. The homework assignment (posted online on Friday) is due the following Tuesday at noon (place of submittal tbd). The answers to the homework will be posted online at 1 pm on Tuesdays. No submissions of homework will be accepted after that time – late submissions (other than for medical reasons) receive a 0 grade.

Attendance is required on Fridays and Wednesdays as well as on selected Mondays. Studying in advance is essential for the Wednesday session since a weekly quiz will be held in class.

Teaching Resources

Prof. Martin Bechthold (office: 334c Gund Hall Email: mbechthold@gsd.harvard.edu.). The instructor will be available for questions immediately after each class. He will also hold regular hours (Wednesday 9 – 11 am) during which anyone is encouraged to come and discuss the course or other matters of interest. Additional times to meet can be arranged via email.

Teaching Assistants: Elizabeth Bacon, Andrew Domnitz, Annie Kountz, Laura Viklund and will be the TAs for the course. The TAs will hold regular office hours to help you with the content of the course, the homework, the project and the exam. The office hours will be posted on the course web site.

Textbook: The required textbook is: Schodek, D., Bechthold, M., *Structures*, Prentice Hall, New York, 2008, 6th edition. The book is available at the Harvard Coop, or at online booksellers. Several additional texts on the covered subjects are available in the Loeb Library and collateral reading is highly recommended. The reserve readings are posted on the course web site.

Web Site: The web site is http://isites.harvard.edu/icb/icb.do?keyword=k62751&pageid=icb_page269918. Homework assignments, case studies and quiz solutions will be posted here, as well as an anonymous overview of current student grades in the class. Additional problem sets, examples and lectures are available at the Interactive Structures Modules on the CD that is part of the book.

Study Groups: Groups should form at the end of the 9/2 Wednesday class session. Each group will prepare one case study for class discussion, complete the homework, study and discuss the assigned readings. Please note that we will not monitor study groups. The maximum number of students in a group is 4.

Case studies: Parts of the Wednesday class meetings will center on the discussion of case studies. A study group will present one case each week using PowerPoint or PDF. The group has to make sure that any material used from books or other sources is properly credited and referenced. All students should prepare in advance for the assigned case study. Students should be ready to make opening statements and debate the issues addressed in the questions accompanying each case. Students may be randomly called with specific questions relating to the case studies. Cases need to be uploaded to the web site before class. To prevent the risk of computer infection through malicious files the instructor will not allow the use of student memory sticks on his computer.

Homework: Problem sets will usually be assigned on a weekly basis. Each group will submit one problem set for grading each week and the same grade will be assigned to all group members. Extra credit problems are to be submitted by individuals only, not by groups. Homework assignments are due at noon on Tuesdays. The answers are posted at 1 pm, and all assignments submitted after that point will receive a 0 grade.

Use of Computers: Use of computers is a required part of the course. You will be expected to perform case study analyses using computers, and to present your case studies etc. to the class using PowerPoint/PDF. **Multiframe – 3 D** will be the main computer program that we will use for the class. There will be a required lab on Multiframe in Rm 516 Gund Hall (pass/fail), date tbd. Please note that although you are encouraged to use computers, evidence that you know how to do the work by hand is absolutely necessary in order to pass the course. You will have no access to computers for the quizzes or during the final exam.

Exams, Quizzes and Grades

There will be 9 quizzes during the course of the term, and a final examination at the end of the term – all closed books, but with one page of notes (one side of one sheet 8.5 x 11) permitted for each quiz and two pages for the final exam. Each quiz will be graded and returned to you. A warning will be issued if several quiz grades are fail/not take. In this case you may be required to do remedial work in order to pass the course. There is no midterm exam. The final examination *must be taken on the date established by the school!* Please do not even ask if you can take the exam at some other time, before or after. This is strictly against GSD's policy. Incomplete grades may be given only on the basis of medical reasons.

Grading: The final grade is based upon the instructor's estimate of the student's comprehension of the material, at the end of the course. The quizzes are weighed 45%, class participation, homework and the case study 20%, the design workshop 10%, and the final exam carries 25% of the grade. Your lowest quiz grade will be dropped before computing the final quiz average. Missed quizzes (without valid medical excuse before or immediately after the missed quiz) will not be dropped, and will be factored as a zero into your final grade.

Design Project

The structural design project allows students to apply the topics of the course in the design context of a more complex system. The problem is handed out on Friday, November 6. It is due on Wednesday, December 2.

Schedule

GSD 6201 Fall 2009 Analysis and Design of Building Structures I					
Date	Day	Topic	Case Studies	Quiz	
09/02/09	Wed	Course Introduction and System Overview			phase 1
1 09/04/09	Fri	Lecture: Statics and Equilibrium			
09/09/09	Wed	Case, Quiz	1 Case	x	
2 09/11/09	Fri	Lecture: Loads and Load Modeling			phase 2
09/16/09	Wed	Case, Quiz	1 Case	x	
3 09/18/09	Fri	Lecture: Material Properties			
09/21/09	Mon	Case	1 Case		phase 2
4 09/23/09	Wed	Lecture: 2 D Trusses			
09/25/09	Fri	no class			
09/30/09	Wed	no class			phase 2
10/02/09	Fri	Case, Quiz	1 Case	x	
5 10/07/09	Wed	Lecture: Internal Forces and Moments			
10/09/09	Fri	Case, Quiz	1 Case	x	phase 2
10/14/09	Wed	Multiframe Pass/Fail Session			
6 10/16/09	Fri	Lecture: Beams (Steel/Timber): Bending, Deflections			
10/21/09	Wed	Case, Quiz	2 Cases	x	phase 2
7 10/23/09	Fri	Lecture: Beams (Steel/Timber): Shearing, Bearing, Torsion			
10/28/09	Wed	Case, Quiz	1 Case	x	
8 10/30/09	Fri	Lecture: Steel and Timber Columns			phase 2
11/04/09	Wed	Case, Quiz	1 Case	x	
9 11/06/09	Fri	Lecture: Lateral Stability	Start structural design workshop		
11/11/09	Wed	Case, Quiz	2 Cases	x	
10 11/13/09	Fri	Lecture: System Design			
11/18/09	Wed	Design Workshop - Interim Presentations			phase 3
11/20/09	Fri	In-Class Workshop			
11/25/09	Wed	Thanksgiving Break			
11/27/09	Fri	Thanksgiving Break			phase 3
12/02/09	Wed	Final Presentation	Submit structural design workshop		

GSD 6204: Building Technology

<http://isites.harvard.edu/icb/icb.do?keyword=k64038>

Fall 2009 syllabus

Prerequisites

GSD 6202, 6203 and 6205; or equivalent

Course description

As the final component in the required sequence of technology courses in the MArch I program, this professionally oriented course develops an integral understanding of the design and construction of buildings and their related technologies – structural, constructional, and environmental. Building on fundamentals covered in *GSD 6203M3 and M4: Science and Technology* (formerly *GSD 6203: Building Construction*), the course looks in detail at examples of innovative construction techniques in wood, steel, and concrete structures. Construction details are investigated as a means by which aesthetic expression and the logic of problem-solving achieve synthesis in design. The course also looks at the context in which technological innovation takes place by exploring the relationship of the various design and construction participants. Class meetings alternate between lectures designed to build understanding of construction techniques and a series of case studies focusing on innovative detail design.

Case studies build on the issues covered in earlier lectures and are designed to provide students with a chance to test their conceptual understanding of broader construction issues while dealing with the specific conditions of each building under scrutiny. Each case study presents assignments for students to prepare for discussion in the following class meeting.

Class meetings: Mondays and Wednesdays from 8:30 to 10:00 a.m. in Room 111, Gund Hall.

Instructor:

Mark Mulligan mulligan@gsd.harvard.edu
 office: 215b Gund Hall
 office hours: Wednesdays 10:30 a.m. – 12:00 noon

The instructor will be available for questions immediately after each class, outside the classroom. Students are also encouraged to come and discuss the course or other matters of interest during regular office hours, as listed above.

Teaching assistants:

Arash Adel aadelahm@gsd.harvard.edu M.Arch-2
 Yu Inamoto yinamoto@gsd.harvard.edu MAUD
 Mar Ferrer Saenz mferrers@gsd.harvard.edu MDesS
 TAs will attend all class meetings and will hold regular office hours as posted on the web.

Assignments

Students are asked to form **case study discussion groups** of 3-4 persons each. Case study assignments will be prepared and presented in these groups. In all but exceptional cases, the same project grade will be assigned to all members of each team. Discussion topics to be researched and presented in class are found at the conclusion of each case study reading. Individual study groups will be assigned to prepare one topic each for presentation in the following class meeting. Presentations will require analysis drawings, models, and other visual aids to be prepared. Further specifications for presentation format will be announced in class as appropriate. Groups will be asked to present in class on a rotating basis throughout the semester so that each group has sufficient opportunity to make presentations and to comment on the findings of others. The instructor and the TAs may provide additional comments on assignments by email. **Each group, whether presenting or not, is required to submit assignments electronically by 7 p.m. the day previous to the scheduled discussion.** Further submission guidelines will be provided in class and on the course website.

Guest lectures

Alex Anmahian (principal of Anmahian Winton Architects in Cambridge) has kindly agreed to speak with us about the design and construction of his recently completed boathouse for Community Rowing in Boston on Monday, 28 September. The innovative steel, wood, and glass structure is located nearby (20 Nonantum Road, Brighton, along the Charles River) and publicly accessible inside and out; students are encouraged to visit before and after in order to take maximum benefit from Alex's lecture. An additional guest lecture (TBA) is planned for later in the term.

Workshops

Three class meetings over the course of the semester are scheduled as detailing workshops. Students will be given a sketch assignment to be completed during the class period; a portion of the following class meeting will be devoted to a discussion of student solutions. Each workshop is intended to allow students to respond as designers, subjectively and synthetically, to the issues raised in lectures and case study discussions. The workshop is not intended as a quiz and does not require separate study to prepare; participation is mandatory, however, and missing more than one workshop will automatically result in a reduced semester grade.

Term project

A term project is due at the completion of the course. The intention is to provide a vehicle for studying in greater depth a topic covered in the course (it may be a thematic study of a specific building or an investigation of a building technique or use of a new material, for example). The paper should be based on a clear thesis or argument, developed synthetically from a detailed analysis of design objectives and construction technique. The subject should be of your own choosing and should be carried out as follows:

1. Students are encouraged to work together with their case study groups formed during the semester; however, pending approval from the instructor, new collaborative teams or individual projects may also be proposed. In most cases, where teamwork is equally shared, the same project grade will be assigned to all members of a team.
2. A written proposal (approximately 200 words) must be submitted by Monday 23 November 2009, at the beginning of class or electronically by 5pm the same day. The proposal shall include both the subject of study and a critical framework for your argument.
3. Upon the proposal's approval, you will prepare a final paper, due by 5pm, Friday 18 December 2009.
4. The paper should be at least 1500 words in length per group member (e.g., if four students are working on one paper, the text should be at least 6000 words in length) and **include original analytical drawings and diagrams created by the students**, as well as supplementary photographs, plans, and other images as necessary to illustrate the subject.
5. Students are requested to submit both an electronic version of the paper (PDF format is preferred) and a printed copy for the instructor to return with written comments.
6. Additional guidelines will be discussed later in class.

Grading

The final grade is based upon the instructors' estimate of the student's comprehension of the material at the end of the course. Group assignments and class participation in case study discussion are weighed 70% and the final project, 30%. Incomplete grades may be given only on the basis of medical reasons and not because of conflicts with other academic coursework or travel plans – please plan accordingly.

Required readings

Students are assigned required readings at three points during the course of the semester as noted on the schedule. These readings complement rather than duplicating the lectures and provide a basis for comparing different design approaches in the case studies. Readings are available both on reserve in the Loeb Library and online in PDF.

Edward Allen's *Fundamentals of Building Construction* (Wiley & Sons: New York, 2004 = 4th edition) may be used throughout the term as a valuable reference. Edward Ford's *The Details of Modern Architecture*, Vols. I and II, (MIT Press, Cambridge, 1990 and 1996) is a very useful reference as well, not only for the examples of modern architecture it highlights, but also for its exemplary axonometric drawing technique of presentation. Although these texts are available at the Loeb Library, copies are limited; therefore it is highly recommended that students purchase their own copies if possible.

GSD 6204: Building Technology **Fall 2009 Schedule**

Introduction: technology and the design process. Technological innovation and collaborative design. Construction detailing: approaches, constraints, paradigms. Design development. Structural strategies, structural expression. Case study 1: the Linn Factory by Richard Rogers.

1. Wednesday 2 September Course overview + administration
Lecture: "Innovation: evolution or revolution?"

NOTE: There will be NO CLASS MEETING on MONDAY 7 SEPTEMBER due to the Labor Day Holiday

2. Wednesday 9 September Lecture: "Design development: principles and approaches"
Case study introduction: Alpha Technology
Case Study 1 assignment due next meeting
3. Monday 14 September Case study 1 presentation: Alpha Technology (Linn Factory)
Reading 1 due next meeting
4. Wednesday 16 September Case 1 continuation
Discussion of reading assignment 1
Reading 2 due next meeting

Wood construction. Traditional European, Asian, and American approaches to wood construction. Paradigms of material efficiency. Structure and skin -- rethinking the building envelope. Case study 2: Forestry Stations by Burkhalter + Sumi. Building foundations. Detail sketch workshop.

5. Monday 21 September Lecture: "New wooden construction: approaches to layering + sustainability"
Case study introduction: Burkhalter + Sumi's Forestry Stations
Case study 2 assignment due next meeting
6. Wednesday 23 September Case study 2 presentation: Forestry Stations
7. Monday 28 September Guest lecture: Alex Anmahian (Anmahian Winton Architects, Cambridge)
"A Pavilion for Community Rowing, Boston"
8. Wednesday 30 September Lecture: "Foundations: engineering and architectural aspects"
9. Monday 5 October Detail workshop (1): in-class sketch assignment
10. Wednesday 7 October Sketch workshop discussion
Reading 3 due next meeting

NOTE: There will be NO CLASS MEETING on MONDAY 12 OCTOBER due to the Columbus Day Holiday

Facade and cladding systems. The building envelope in masonry, concrete and steel construction. Properties of stone and problems of heterogeneous construction. Construction modules. Case studies 3 and 4: The East Wing of the National Gallery by I. M. Pei, and the Getty Center by Richard Meier.

11. Wednesday 14 October Lecture: "Stone construction/ stone cladding"
Case study introductions: East Wing, National Gallery of Art/ Getty Center

Case study 3 assignment due next meeting

- 12. Monday 19 October Case study 3 presentation: East Wing, National Gallery of Art
Case study 4 assignment due next meeting
- 13. Wednesday 21 October Case study 4 presentation: Getty Center

Interior construction. Tactile architecture and personalized space: an environmental approach to materials. Stability concerns at a detail scale. Detail sketch workshop.

- 14. Monday 26 October Lecture: "Interior finishes and construction"
- 15. Wednesday 28 October Lecture: "Special problems of interiors"
- 16. Monday 2 November Detail workshop (2): in-class sketch assignment
- 17. Wednesday 4 November Sketch workshop discussion
Reading 4 due next meeting

Glass in construction. Transparency and translucency in buildings: special properties of glass and constraints in detailing. Innovative structural approaches to glazed surfaces. Production and processing of glass materials. Case study 5: The Toledo Museum of Art's Glass Pavilion by SANAA.

- 18. Monday 9 November Lecture: "Innovation in glass technology"
Case study 5 assignment due next meeting

NOTE: *There will be NO CLASS MEETING on WEDNESDAY 11 NOVEMBER due to the Veterans Day Holiday*

- 19. Monday 16 November Case study 5 presentation: Glass Pavilion at the Toledo Museum of Art
- 20. Wednesday 18 November Guest Lecture: TBA
Final project proposals due next meeting

Roof construction. Flat and sloped roofs – detailing strategies. Weather protection, water-shedding, and architectural expression. Glass membranes and innovative applications. Case study 6: the Kimmel Performing Arts Center of Philadelphia by Rafael Viñoly. Detail sketch workshop..

- 21. Monday 23 November Lecture: "Roof construction and expression"
Final project proposals to be submitted in class or electronically by 5:00 pm
Case study 6 assignment due next meeting
- 22. Wednesday 25 November Case study 6 presentation: Kimmel Center

*** THANKSGIVING HOLIDAY WEEKEND ***

- 23. Monday 30 November Detail workshop (3): in-class sketch assignment
- 24. Wednesday 2 December Sketch workshop discussion
Conclusions

Final projects due Friday 18 December 2009 (5 p.m.)

GSD 6204: Building Technology

Fall 2009

Reading assignments

- Reading 1 Mostafavi, Mohsen and Leatherbarrow, David. *On Weathering*. MIT Press, Cambridge, 1993.
- Riley, Terence. "Light Construction" (essay) from *Light Construction*. The Museum of Modern Art, New York, 1995, pp. 9-32.
- Reading 2 Ford, Edward R. *The Details of Modern Architecture*. MIT Press, Cambridge, 1990.
 Chapter 10: Residential Construction in America;
 Chapter 11: Frank Lloyd Wright: The Usonian Period, pp. 289-349.
- Reading 3 Ulrich Knaack, Tillman Klein, Marcel Bilow, and Thomas Auer. *Façades: Principles of Construction*. Birkhäuser, Basel, 2007.
 Chapter 3: Principles of Construction, pp. 36-51.
 Chapter 4: Detailing and Tolerances, pp. 52-69.
- Reading 4 Wiggington, Michael. *Glass in Architecture*. Phaidon Press Ltd., London, 1996.
 Chapter 2: Glass Technology, pp. 60-81
- Lang, Werner and Thomas Herzog. "Using multiple skins to clad buildings"
 Architectural Record, July 2000, pp. 171-182.

General reading assignments for GSD 6204: Building Technology are now found online. To view them, please go to the course iCommons website's "readings" page. Readings in PDF format may be accessed directly from this page. Case study texts are found under "case study texts + materials" on the website, along with links to related construction drawings and photos.

Spring 2010 Syllabi

01102: Second Semester Core: Introduction to Design and Visual Studies in Architecture

Spring 2010

Architecture

Core Studio - 8 credits

Monday Wednesday Friday 2:00 - 6:00

INSTRUCTOR(S)

Michael Meredith, Danielle Etzler, Eric Howeler, Mariana Ibanez, Thomas Schroepfer, Cameron Wu

COURSE DESCRIPTION

The second of a four-semester sequence of design studios continues examination of the issues raised in the first semester and begins investigation of more complex issues related to building fabric.

Prerequisites: GSD 1101

Second Nature:

Urban Frameworks, Public Architecture, and the Environment

GSD 1202: Fourth Semester Core

Felipe Correa

John Hong (coordinator)

Florian Idenburg

Cynthia Ottchen

Ingeborg Rocker

Maryann Thompson

Summary

The studio will focus on the design of urban frameworks and the reciprocal integration of the large-scale public building within this framework. The role of nature and the environment, with all of its emerging questions of social and performance criteria will form the underlay of the studies. Collaboration with the Landscape Architecture Core Studio GSD1212, in the form of shared lectures and team exercises, will generate cross-disciplinary knowledge for both Architecture and Landscape students to draw from. The coursework will follow the general modules below and individual instructors will create their own specific agendas and inflections within this larger effort.

1. Urban Frameworks: Conceptualizing the site
2. Public architecture and the Urban Framework: Designing reciprocal relationships between city and building.
3. Structure, Envelopes, and Building Systems: Integrating building design with environmental concepts.
4. Synthetic Natures: Feedback with previous work, synthesis into a cohesive urban and building proposal.

Introduction

The history of urbanism has witnessed at its core, synthetic definitions of nature and public life in relation to city form. The Vitruvian 'wind rose' for example was not only an environmental template for the layout of streets, but a cosmological tool to organize social relationships. With the onset of the industrial revolution, newly intensified debates of the role of nature became central: The negotiation of unprecedented density and systems of mobility, programmatic aggregations, and socio-political organizations created the need for new theoretical frameworks. As Ebenezer Howard's Garden City began to look systematically at these alliances between urban density, the environment, and public program, Modernism continued this trajectory through a more severe dialectic between machine and nature. Falling on the other side of the urban/technological debate, the works of Lewis Mumford and the Situationists found common ground if only briefly with the idea of cities as social ecologies that transcend Cartesian mappings.

Through the lineage of these continuing debates, the role of nature can be understood as a kind of 'second nature,' a highly constructed philosophical framework that is *naturalized* rather than actually being a pre-existing, uncultivated condition. In the urban context then, the idea of nature has merged with notions of the public sphere and all of its armatures including infrastructures, streets, and open spaces. In this way the role of public architecture becomes an inextricable extension to this relationship between nature and the city. The broader aspirations of the public building has figured prominently as a visceral and emblematic materialization of the way larger conceptions of the urban and the ecological intersect.

Within the current context of the pressing environmental crises, we must now enter into a new debate about the role of nature and the city. Several overlapping trajectories that align it with issues of urban sustainability have emerged including:

- Nature as urban infrastructure.
- Nature as technological panacea.

- Nature as biomorphic urban generator.
- Nature as history, memory, and nostalgia.
- Nature as performative datascape.
- Nature as productive landscape.

At this historical crossroads where nothing short of revolutionary propositions will do, we are now in the privileged position to create our own thesis about nature and the city. Through critiquing, re-reading, and synthesizing these trajectories with our own notions, we can propose more radical and necessary shifts in the urban habits and development patterns that are essentially unsustainable.

Site

The site is an approximately 170 acre catchment area called Willets Point in Corona, Queens. Although it has rich adjacencies to waterfront, transportation, airport infrastructures, and Citifield (formerly Shea Stadium), it has become a provisional urban zone of temporary industrial buildings and polluted ground and waterways. Nicknamed the 'iron triangle,' there are no sidewalks and sewers in the area and Mayor Bloomberg has called it 'another euphemism for blight.' There have been decades of urban renewal plans including the most recent bid to transform the area into a site for the 2012 Olympic games. All of these plans have fallen by the wayside or have been abandoned. Adding to its atmospheric quality of potential is its adjacency to the Corona Park where the 1939 World's Fair was held, the largest of its kind with themes that seem even more significant today in light of the sustainable dilemma including transportation, communication, food, and robotics.

The site's proximity to the stadium and the vast amounts of asphalt that surround it compound the problems of both urban heat island and water runoff. The impermeable parking lots that adjacent to the site drain vast amounts of polluted waters into the overburdened Flushing Bay. The microclimate is hotter than other areas of the city because of the high asphalt to ground ratio. Meanwhile, the environmental, cultural, and infrastructural potential of the site are many: its waterfront status and proximity to vital urban zones call for a focused and radical urban design that can benefit the entire region. As the onset of the current recession has stalled the inevitable development pressures that will nonetheless bring density and urban renewal to the area in the near future, we now have the time to imagine an alternate future.

Module 1: Urban Frameworks (2.5 weeks)

How can new conceptions of the role of the environment and ecological processes reformulate our ideas of urban infrastructure, programmatic relationships, open space networks, social constructs, and site history? What role can the public building play as a vital component to this larger urban framework? Through a multi-scalar and multi-directional approach, students will be introduced to the underpinnings of urban design and will formulate their own synthetic pre-conceptions of the site.

Architecture and Landscape students as well as faculty will be organized into collaborative teams: Two architecture students will be working with one landscape architecture student as a group. Organizationally, two architecture critics will likewise be teamed with one landscape critic and sections will be pooled for design exercises, lectures, and critiques/workshops.

EXERCISES AND SCHEDULE

- **Introduction and Joint Presentations [Tues, 26 January]**
The collaborative structure, methods, and exercises will be presented.
 - Scott Cohen and Charles Waldheim - Introductory comments

- John Hong and Chris Reed - Coordination summary of studio and brief site summary, introduction of faculty.
- Mohsen Mostafavi - Introductory comments
- Felipe Correa – Lecture, Urban Design primer
- Meeting with individual teams and instructors: introduce assignments
- **Urban precedent research [Thurs, 28 January]**

From a list of precedents (see separate precedent document), teams will present an analysis of urban design examples. All analysis should be formatted within the given template so that precedents can be compared across studios and included in the final studio reference. Analysis should include:

 - Data for cover page: Project name, year, location with basic climate data (temperature, precipitation), size/scale, author, density given in site FAR (list surrounding density for open spaces projects), constituencies, bibliography.
 - Core diagrams: figure ground (figure/field for open spaces) showing surrounding urban fabric, circulation/transportation networks, daylight/shadow analysis, hydrology (canals, rivers, tides, stormwater), program, habitat, topography/geography, section, and phasing (if applicable).
 - Synthetic diagrams (3 minimum per group): the keywords (or combination of keywords) in the precedent package should be used as a starting place to analyze the conceptual strategies for each project. For instance, in diagram form, the following should be answered:
 - What is the dominant strategy in the project?
 - What tactics are deployed to achieve this strategy?
 - If the strategy is hierarchical, what element is dominant?
 - If the strategy is non-hierarchical, how is synthesis achieved?
 - In what way does the project relate to its context (social, formal, economic, eco-systemic)?
 - Site Overlay: The final page will be the precedent overlaid at the correct scale over the project site to understand scale.
 - Lecture, River ecologies + Site Histories: Chris Reed + Susannah Drake
- **Site Visit and Documentation [Sat, 30 January]**

The teams will visit the site and document according to criteria set up by each studio group.

 - Site Documentation Strategies: Prior to the site visit, each group will devise a specific 'mission plan' to document the site. Alternative means of documentation beyond planometric diagrams can be explored. However the base drawings should include similar diagrams to precedent research. In addition to this, additional criteria include: nearby urban fabrics, water flows, winds, catalog of horizon photographs.
 - A bus will be provided for departing Saturday morning from the GSD at 630am and will leave New York at 9pm. The dropoff location will be the Queens Museum at Flushing Meadows Corona Park, and the pickup location will be in front of the New Museum, 235 Bowery in the Lower East Side. Students may elect to stay an extra day on their own, but transportation will only be available on Saturday.
- **Site analysis / urban framework team meetings [Tues, 2 February]**

Studio groups will meet to discuss site analysis research in relationship to beginning ideas of urban framework agendas.

 - Lecture, Charles Waldheim: Landscape Urbanism
- **Team deskcrit / discussion [Thursday, 4 February]**

Discussion of the urban framework with individual groups will be conducted.

- **Final pinup and studio selection [Tuesday, 9 February]**

Each team of three will present their Urban Framework and there will be larger discussion/debate around emerging themes for further development.

- Each team will produce an Urban Framework 'primer' as a kind of mini-thesis / reference for the 4th semester studios at large. This will be assembled into a single studio-wide document. It should include precedents, site research, and design explorations.
- Instructors will identify a select group of framework strategies that can be used as a basis for students to move forward with.
- After the review, departments will split up and individual instructors will present short 5-minute presentations on their own studio agendas and methods of pedagogy.
- Students will make studio selections.

Module 2: Public Architecture and the Urban Framework (4 weeks)

What role does the public building play in the larger environmental agenda of the city? Through the reciprocal exploration between site and building, the studio will focus on the scale architectural scale with the idea that it can impact the urbanism of the larger site. As an open ended program that bridges landscape and architecture in the interest of the public good, the athletic facility in New York has taken on many faces including community center and gymnasium. In its expanded role, it can also house after school programs, elderly care centers, job training, etc. Each studio will start with a basic 'core' program, and through site explorations expand upon this with their own inflections and specificities.

The goals of the effort will be to depart from the model of urban analysis and subsequent building design in favor of a more simultaneous generation of both the urban framework and the public building in a reciprocal process. For instance while the urban framework can be devised and the recreational building sited within it, simultaneously the building can be thought of as generating the urban framework. Through this inside-out /outside-in feedback, the polarities between subject/object, urban/nature, and city/building can be questioned. Urban scale performance parameters from the Environmental Technology class such as daylight feasibility will be used to give generative information.

ACTIVITIES (see schedule matrix for timeline)

- **Joint gallery pinup with landscape studios**

Work will be pinned up in a gallery format and several trajectories will be selected for further discussion. The purpose of a joint gallery review is for students in architecture and landscape to gain insight into incorporating elements from each respective discipline. For instance, ideas about the public building as it impacts the urban frame might be incorporated by a landscape student's proposal, or proposals concerning ecological corridors and landscape infrastructure might be incorporated into an architecture student's proposal.

- **Mid-review**

Presentation requirements (each studio to have additional specific requirements):

1. Urban framework site model with massing studies of building .
2. Site diagrams describing the thesis: networks, infrastructures, open space, etc.
3. Conceptually framed Programmatic/zoning studies at the urban scale.
4. Conceptually framed Programmatic studies/zoning at the building scale.
5. Urban scale ground floor plan examining relationship of building to larger urban block structures at 1:30" scale.
6. Site section with building examining relationship of building to the urban street and infrastructures at 1/16"
7. Ground and upper level plan (2 minimum) at 1/16" scale.

8. Building sections at 1/16" scale.
9. Two perspectives describing relationship between urban frame and building.
10. One interior perspective
11. Urban and building analyses from environmental technology class.
12. 500 words thesis statement.

Module 3: Envelopes, Structures, and Building Systems (3 weeks)

How can the role of the envelope be broadened to negotiate alliances between landscape, interiors, urban conditions of publicity and privacy, and environmental performance? Can structural systems become synthetic so that they are inseparable from the spatial concepts? Contemporary discussions on the envelope have expanded its modernist territory of a compositional 'skin' (as opposed to the bones of the domino frame) to now include other expanded topics such as structure, effect, energy, kinetics, and ornament. All of these explorations put more emphasis on the importance of specific material and fabrication techniques. Likewise, the role of structure has taken on more theoretical prospects that include flows, fractals and folds, all of which contribute to the larger programmatic and spatial intentions. This module will address envelope, structure, and building systems as supporting the conceptual argument of the urban and architectural scale intentions.

ACTIVITIES (see schedule matrix for timeline)

- **Lecture, Structures – TBA**

Structural concepts for large span spaces and how these are integrated into program and envelope will be presented.

- **Lecture, Envelopes – TBA**

Emerging tectonics and techniques for envelopes will be presented.

- **Review, Structures**

Outside structural engineer critics will be invited for a review.

Presentation requirements (each studio to have other specific requirements):

1. Axonometric of structure.
2. Structural concept diagrams and how they are related to the spatial and programmatic solution.
3. Diagrammatic structural model.
4. General plans and sections with structure clearly described.

- **Review, Building Integration**

The integration of envelopes, structures, program, and circulation strategies will be reviewed Presentation requirements (each studio to have other specific requirements):

1. Plans 1/16"
2. Building sections 1/16" scale
3. Elevations.
4. Diagrams of circulation networks solving conceptual frameworks, program, egress, and accessibility.
5. 2 exterior perspectives describing envelope in terms of daylighting, materiality, and other phenomenon.
6. 1 interior perspective describing envelope in terms of daylighting, materiality, and other phenomenon.
7. Environmental strategy including analyses from environmental technology class.
8. Previous structural studies.

Exercise 4: Synthetic Natures (3.5 weeks)

As the previous exercises will have produced fragments of research that span across scales, the latter part of the semester will look at the idea of feedback of the previous exercises as they interrelate across scales. For instance, programmatic

development could project back onto the urban framework to refine relationships in the city. Likewise ideas about the ground could re-inform the envelope. The purpose of this phase is to refine a cohesive thesis argument that defines the position on the nature and the city and how the public building is the pivotal artifact that brings to light the philosophical urban premise at the scale of architecture.

ACTIVITIES (see schedule matrix for timeline)

- **Actar Workshop**
- **Final Review**
- **Roundtable discussion with landscape and architecture**

PRECEDENTS

Correa/Thompson/Gilles-Smith:

1. *Waterfronts: Void*

Parc Andre Citroen (1992) Gilles Clement and Alain Provost

2. *Waterfronts: Infill*

Greenwich Peninsula, London (1997-2000) Richard Rogers, Desvigne + Dalnoky

3. *Urban Piecemeal (choose 3 out of 4)*

Rockefeller Center, NYC (1931) Raymond Hood

Kentlands, Maryland (1989) Duany Plater-Zyberk

Massena, Paris (1995-2009) Christian de Portzamparc

BedZED, London (2000-2002) BioRegional, Bill Dunster, and Arup

4. *Infrastructural Transformations*

Emerald Necklace/Boston Fens (1878-1896) Olmsted

5. *Fine Grain Open Space*

Robin Hood Gardens, (1972) Alison and Peter Smithson

Millennium Park, Chicago (1998-2004) SOM

6. *Regional Masterplans*

Garden City (1902) Ebenezer Howard

7. *City Blocks (choose 3 out of 4)*

Beijing, First Ring Road

Quito, Historic Core (Palacio Presidencial)

Boston, Back Bay

Berlin, Charlottenburg

Idenburg/Rocker/Drake:

1. Waterfronts: Void

Fresh Kills, Staten Island (2003) Field Operations/James Corner

2. Waterfronts: Infill

Porto Waterfront (2001) Manuel de Sola Morales

3. Urban Piecemeal (choose 3 out of 4)

Lafayette Park, Detroit (1963) Mies, Hilberseimer

Borneo-Sporenburg (1993-1996) West 8 / KNSM (1990s) Jo Coenen / Java Island (1990s) Sjoerd Soeters

Paju Book City (1999) Seung H-Sang, Florian Beigel, ARU

Les Halles Competition (2004) OMA, MVRDV, Nouvel, etc.

4. Infrastructural Transformations

Lille Masterplan (1994) OMA

5. Fine Grain Open Space

Parc de La Villette competition, Paris (1982) Tschumi, OMA, Krier, etc.

Olympic Sculpture Park, Seattle (2001-2006) Weiss Manfredi

6. Regional Masterplans

Radiant City (1935) Le Corbusier

7. City Blocks (choose 3 out of 4)

San Francisco, Geary Boulevard

Marrakesh

Jaipur

New York 1 (Upper West Side, Upper East Side, West Village, Brooklyn Heights)

Hong/Ottchen/Waugh:

1. Waterfronts: Void

Governor's Island competition, NYC (2006) REX/Desvigne, DS+R/West 8, Maltzan/Hargreaves, etc.

2. Waterfronts: Infill

Brooklyn Bridge Park (2003-2012) Michael Van Valkenburgh Associates

3. Urban Piecemeal (choose 3 out of 4)

Green Archipelago, Berlin (1977) O.M. Ungers

Den Haag Ypenburg (1994) MVRDV, etc

Breda Chasse Campus (2000) OMA

Masdar, Abu Dhabi (2006) Foster + Partners

4. Infrastructural Transformations

Promenade Plantee, Paris (1998) Vergely and Mathieux / High Line, NYC (2004-2009) DS+R, Field Ops

5. Fine Grain Open Space

Schouwburgplein, Rotterdam (1996) West 8 / Lijnbaan (1953) Van den Broek and Bakema
Taichung Parkway, (2007) Stan Allen and Scape

6. Masterplans

Flushing Meadows Corona Park Masterplan, Queens (2006) Smith Miller and Hawkinson

7. City Blocks (choose 3 out of 4)

New Orleans, French Quarter

Savannah, Historic Center

Barcelona

New York 2 (Corona, Park Slope, Sunnyside, Flushing)

PROGRAM (Urban Frameworks)

The following criteria is a general guideline, students should formulate their own thesis about program allocation, zoning, quantities, etc. Exact figures are not as crucial as the overall concept.

- Site FAR (including streets and open spaces) is 3.5 minimum
- Residential
- Commercial
- Office
- Institutional (for example, school, library, etc.)
- Recreational building (200,000sf approx)
- Grounds for Recreational building
- Open space and parks
- Infrastructure
- Parking
- Trans-modal station

PROGRAM (Recreational Building)

The program is meant as a general base guideline. Individual instructors and students can develop specific inflections.

	Unit Size	Total Sq Ft
Fitness		
Aquatic Center		15000
Competition pool (25 m)		
Therapy training pool		
Whirlpools		
Children's pool		

	Weight Room		3000
	Climbing Wall (35' tall x 40' wide)		800
3	Multi-purpose studios / yoga / dance	1000	3000
	Mens/ Womens Locker Rooms		2000
	Boys/ Girls Locker Rooms		2700
	Restrooms		600
	Administration Offices		3500
	Physical Therapy		2500
	Alternative medicine		1000
	Playground		4500
	Nutritional Center		500

Indoor courts

	Spectator areas		1500
2	Basketball Court/ Gym	5000	10000
	Indoor Running Track and Field		14000
4	tennis courts	6000	24000
4	squash courts	640	2560

Cultural / Community Service

	Lobby / Welcome center		3500
	Member Services/ Offices		1500
	Exhibit space		5000
	Auditorium (500-700 seats)		15000
5	Classrooms	750	3750
	Computer Room		825
	Restrooms		600
	Senior center		1000
	Childcare / afterschool		15450
	Reception/ Lobby	500	
	Offices	500	
	Nursery school (2 rms.)	1500	
	Pre-school (6 rms.)	3500	
	Pre-teen	1500	
	Young adult	2000	
	Meeting spaces	1200	
	Childcare After School (4 rms.)	2750	
	Childcare Playground	2000	
	Digital media center		850
	Arts & Crafts		1000
	Counseling/ Therapy		600
	Library		800
	Cafe		2000
	Cafe Kitchen/ Prep Area		600
3	Conference Rooms (75 People ea.)	1500	4500

Additional Components

	Loading Dock		4000
	Additional Mechanical Areas		5000

Total Program Sq Ft.	157135
X 1.15 multiplier (Circulation, storage, mechanical)	
Total Building Sq Ft.	180,705

Fields/Landscapes

ball fields
running track
playgrounds
basketball courts,
handball courts,
skate park
outdoor pool

Other outdoor areas (suggested)

market
amphitheater
community garden

Parking (not included in Building, can be indoor or outdoor or mix)

100	parking spaces	54000
50	bicycle parking	

BIBLIOGRAPHY AND REFERENCES

See precedent package – instructors will give individual references.

SPRING 2010

4203M3: Buildings, Texts, and Contexts

Department of Architecture

Lecture
2 credits

Tuesday 10:00 - 11:30
Piper Aud - Steps Gund Hall

Thursday 10:00 - 11:30
Piper Aud - Steps Gund Hall

Instructor(s)

Erika Naginski

Course Description

Introduces the formulation of architectural principles - what Rudolf Wittkower called the "apparatus of forms" - by means of selected case studies from Brunelleschi to Bernini. Treats such topics as antiquity, humanism, the architectural treatise, the dome, the centrally planned church, the villa, patronage and papal urbanism as well as theoretical expositions of beauty, symmetry, ratio, harmonic proportion, the orders, perspective and orthographic projection. The contemporary critical reception of the period, which will also be considered, renders the content of the course relevant to the present.

BUILDINGS, TEXTS AND CONTEXTS III

GSD 4203 M4

NINETEENTH-CENTURY ARCHITECTURE:

BETWEEN HISTORY AND MODERNITY

Antoine Picon

Spring 2010

GENERAL ARGUMENT

Nineteenth-century architecture is a difficult subject in a design school. Its aesthetics is in sharp contrast to the contemporary quest for authenticity. Although today's architectural debate has distanced itself from the modern movement ideals, architects have not get rid of the modernist condemnation of eclecticism. Yet, nineteenth-century architecture is fundamental if one wants to understand the emergence and development of the modern movement. Above all, it raises issues such as the tension between art and technology that are still problematic today.

Through a series of case studies, the course will focus on the following themes:

- the question of the changing nature of the relation between architecture and society and the interrogations it implies regarding program and style,
- the scientific and technological challenge implied by industrialization,
- the evolution of the definition of architectural design through phenomena like the emergence of Beaux Arts composition, the quest for structural rationalism or the German obsession with tectonic.

The Building Texts and Contexts series is meant to promote students personal reflection through a close association between lectures and sections. Beside lecture attendance, presence at section is mandatory. The weekly section assignments given by section leaders are also an integral part of the course evaluation. In addition, students will turn a final course assignment determined by the sections leaders.

PROGRAM AND READINGS

Meeting 1, March 9

NINETEENTH-CENTURY ARCHITECTURE: AN INTRODUCTION

Meeting 2, March 11

ARCHITECTURAL COMPOSITION AT THE ECOLE DES BEAUX-ARTS

Jean-Nicolas-Louis Durand, *Précis of the Lectures on Architecture with Graphic Portion of the Lectures on Architecture* (Los Angeles: The Getty Research Institute, 2000), Preface and Introduction, pp. 73-88.

Hyungmin Pai, *The Portfolio and the Diagram* (Cambridge, Massachusetts: MIT Press, 2002), chapter 2, "The Portfolio and the Academic Discipline", pp. 40-73.

Barry Bergdoll, *Léon Vaudoyer: Historicism in the Age of Industry* (New York, Cambridge, Massachusetts: The Architectural History Foundation, M.I.T. Press, 1994), chapter 3, "The French Academy in Rome, 1826-1832: Laboratory of Romantic Historicism", pp. 75-108.

Meeting 3, March 23

THE BEAUX-ARTS IN NINETEENTH-CENTURY AMERICA

Meeting 4, March 25

SCHINKEL'S ALTES MUSEUM

Heinrich Hübsch, "In What Style Should We Build?", in *In What Style Should We Build?* (Los Angeles: The Getty Research Institute, 1992), pp. 63-101.

Alex Potts, "Schinkel's Architectural Theory", in Michael Snodin (ed.), *Karl Friedrich Schinkel: A Universal Man* (New Haven: Yale University Press, 1991), pp. 47-55.

Meeting 5, March 30

ORNAMENT AND THE RHYTHMS OF MODERN LIFE: THE BAUAKADEMIE

Meeting 6, April 1

A BUILDING TURNING POINT: THE CRYSTAL PALACE

Thomas A. Markus, *Buildings and Power: Freedom and Control in the Origin of Modern Building Types* (London and New York: Routledge, 1993), Chapter 8, "Ephemeral Knowledge", pp. 213-228.

Robert Thorne, "Paxton and Prefabrication", in Derek Walker (ed.), *The Great Engineers: The Art of British Engineers 1837-1987* (London: Academy Editions, New York, St Martins Press, 1987), pp. 52-69.

Meeting 7, April 8

WORLD EXHIBITIONS AND THEIR EVOLUTION

Meeting 8, April 13

THE INVENTION OF THE NINETEENTH-CENTURY CAPITAL: MAPPING PARIS

Patrice Higonnet, *Paris: Capital of the World* (Cambridge: Harvard University Press, 2002), "The Urban Machine", Chapter 8, pp. 177-204.

François Loyer, *Paris nineteenth century: Architecture and Urbanism* (New York: Abbeville Press, 1998).

Ann Komara, "Concrete and the engineered picturesque. The Parc des Buttes Chaumont (Paris 1867)", in *Journal of architectural education*, Vol. 58, September 2004, pp. 5-12.

Meeting 9, April 15

THE NETWORKED CITY AND NATURE: THE PARC OF THE BUTTES
CHAUMONT

Meeting 10, April 20

ANTONIO GAUDI'S GÜELL COLONY CHAPEL AND GÜELL PARK

Martin Bressani, "Notes on Viollet-le-Duc's Philosophy of History, Dialectics, and Technology," in *Journal of the Society of Architectural Historians* (December 1989), pp. 327-350.

George R. Collins, "Antonio Gaudi: Structure and Form", in *Perspecta*, Vol. 8 (1963), pp. 63-90.

Meeting 11, April 23

NATURALISM, RATIONALISM AND FANTASTIC: THE SAGRADA FAMILIA

Meeting 12, April 27

FROM STRUCTURAL RATIONALISM TO MODERN IDEALS: THE THEORY
OF AUGUSTE CHOISY

Yves-Alain Bois, Michael Glenny, "Montage and Architecture", in *Assemblage*, n°10 (December 1989), pp. 110-131.

Richard Etlin, "Le Corbusier, Choisy, and French Hellenism: The Search for a New Architecture", in *The Art Bulletin*, Vol. 69, n°2 (June 1987), pp. 264-278.

Design Teams

The design process is a collaborative endeavor. Often the best ideas come not from a single individual acting in isolation, but rather through the active engagement of a strong team assembled from across a broad spectrum of experience, ideas, and creativity. In this way, points of view and sparks of creativity interweave to spawn new ways of thinking to unlock bold new designs.

Cognizant of the virtues of this collaboration, you are asked to assemble into 21 teams of 3-4 persons each from among your 6202 classmates. All homework assignments and student case study projects are to be completed by these teams; single submissions of each assignment will be accepted per team. These teams will remain intact for the duration of the semester so organize yourselves accordingly.

Homework Assignments

There will be approximately 7 homework sets assigned throughout the course. These will generally be assigned on a Wednesday and will be due by noon the following Tuesday.

Homework "specifications" are as follows:

- All homework is to be completed on engineering grid paper.
- One bound (i.e. stapled) homework submittal package is to be submitted per team.
- Unclear work will not receive credit. Sloppy work will be penalized accordingly.
- All team members are to print, sign, and date a cover sheet affixed to each homework submittal as evidence of collaborative participation and calculation review in preparing the assignment.

Student Case Studies

Each design team will be randomly assigned a specific case study to research and present to the class at some point during the semester. These case studies have been selected as good representative examples of the various engineering topics presented in class, and each team will be responsible for researching their assigned case study vis-à-vis the engineering principles behind each. Teams will prepare a 20 minute multi-media presentation of their research, allowing an additional 10 minutes for open questions from the class. Design teams will be graded upon the technical composition of their presentation (i.e. demonstration of a thorough understanding of the engineering principles fundamental to their case study), demonstration of active involvement of all team members, clarity of presentation, and the active engagement of the class during the question and answer period.

Teams are encouraged to be creative when presenting their research. Successful presentations will clearly explain what may be complex engineering principles in simple and accessible terms. The use of diagrams, structural analysis software, and physical models for the purposes of demonstrating the engineering principles fundamental to their case study are encouraged. Teams will also be responsible for generating thoughtful and lively dialogue among their classmates during the question and answer period. This may be done by proposing questions for discussion, or positing two or more opposing views for subsequent debate among the class. These are but two techniques among many which teams may consider in order to spur healthy classroom discussion - be creative.

Grading

Final grades will be determined as follows:

Quizzes:	20%
Mid-Term Examination:	20%
Final Examination:	20%
Homework:	15%
Case Study Presentation:	15%
Class Participation:	10%

Course Schedule

A detailed course schedule is provided on the following page. Classes meet for lecture Wednesday afternoons and Friday mornings. Recitation meets Friday mornings immediately following Friday lecture and takes place in the same room as lecture. As such, Friday class time will effectively meet for three contiguous hours. Attendance is mandatory at all lectures and recitations and influences the Class Participation component of the final grade. Attendance will be taken.

The course will generally flow as follows:

- Tuesday noon
 - homework on topic 1 due
- Wednesday Lecture
 - quiz on topic 1
 - lecture on topic 2
 - assignment of homework on topic 2
- Friday Lecture
 - review of Wednesday lecture (topic 2)
 - work thru detailed example problems related to topic 2
 - three student case study presentations related to topic 1
- Friday Recitation
 - Any time remaining following case study presentations will be available for students to ask questions of the lecturer, work thru homework assignments with their design team members, etc. Students are also encouraged to bring any structural queries they may have about studio projects to the lecturer for informal crits, etc.

wk	Topic	reading assignment	mo	day	quiz	HW assigned	team case studies		
1	Introduction		Jan	W 27					
	Review: Statics & Equilibrium	Ch 1		F 29					
2	Review: Moment & Shear Diagrams	Ch 2 & 3	Feb	W 03		HW1			
	Trusses	Ch 4		F 05					
3	Cables	Ch 5.1 - 5.4		W 10	Q1	HW2			
				F 12					
4	Arches	Ch 5.5		W 17	Q2	HW3			
				F 19			A	B	C
5	Shells	Ch 12		W 24	Q3	HW4			
				F 26			D	E	F
6	Plates & Slabs	Ch 10 & 13	Mar	W 03	Q4	HW5			
				F 05			G	H	I
7	Indeterminacy: Beams & Frames	Ch 9		W 10					
	Mid-Term Examination Review			F 12					
8	SPRING BREAK			W 17					
				F 19					
9	Mid-Term Examination			W 24					
	Structural Glass Design			F 26					
10	Reinforced Concrete Design	Ch 15.3, Appendix 12		W 31		HW6			
			Apr	F 02			J	K	L
11	Prestressed Concrete Design			W 07	Q5	HW7			
				F 09			M	N	O
12	High Rise Design	Ch 14.1		W 14	Q6				
				F 16			P	Q	R
13	Structural Failures			W 21					
	Final Examination Review			F 23			S	T	U

Notes:

- All homework is due by noon on Tuesday following date it was assigned (i.e. 6 days after it was assigned)
- Date of Final Examination to be determined by the Department of Architecture

GSD.6203m3

City of Wood

Spring 2010

Instructor: Jonathan Levi

Course Project – Architectural Bookstore

Scenario

A Cambridge bookseller is currently located in a rear basement space and wishes to relocate to a more visible and representative location. The bookseller, a passionate appreciator of fine architecture, specializes in used and hard to find architectural books and folios. New publications are not offered. His patrons are largely faculty and students from local architecture schools, but also include lay collectors. A site has been identified on Massachusetts Ave, north of Harvard Square, which offers not only prominence, but also the opportunity to build a new store which ideally accommodates the bookstore's needs. In addition, the bookseller sees the new structure as an opportunity both to express the content of the store and to advocate for the potential of good architecture in the public realm.

Program

1 Store

The structure will be on a single level for customers. The customer area must be handicap accessible. The customer level volume with balcony will be a single clear storey space of ample height. The maximum length of 7 ft. high bookshelves must be achieved in the allowable footprint while leaving room for handicap passage (3 ft. min. aisles with 5 ft. turning circles at cul-de-sacs) and 10 l.f. of 30" high by 2 ft. deep table or counter space for laying out folios and piles of books.

2 Balcony

An open balcony will be provided for book conservation and office tasks. The balcony will be accessed by stair. There should be room for one desk, an easy chair and 60 l.f. of bookshelves.

3 Basement

A toilet, storage area and mechanical space, also accessed by stairs, will be in the partial basement. Heating and air conditioning will be by floor registers fed from the basement.

4 Airlock

Since climate control is critical, an airlock vestibule will be provided at the entrance off Brattle Street.

5 Sidwalk Display

There will be a single window with enclosed display space (accessed from exterior or interior) for a rotating display of a few books. The display glazing will be a maximum of 20 s.f.

6 Dimensional controls

The largest extent of the new building footprint will be the existing restaurant building footprint. The maximum height above the adjacent sidewalk will be 20 ft. The right of way access to the housing entrance must be maintained in its current dimension. The front west facing elevation and side north facing elevations must be primarily opaque up to a minimum height of 7 ft. to accommodate the continuous placement of bookshelves on the exterior walls.

7 Light

Daylight is an important factor in the creation of the space. Overall light levels need to be balanced to reduce damage to the books. However, the collector has requested natural light for viewing and display...so, indirect daylight needs to be provided selectively. Artificial lighting will not be considered as part of this exercise

8 Materials

The building structure will be wood on a cast-in-place concrete foundation. A minimum of 50% of the exterior cladding will be wood or wood products. The balance of the building envelope materials are at the discretion of the architect.

Requirements:

The bookseller has invited a short list of architects to provide a concept sketch for the bookstore. Since he considers the physical nature of the store to be an integral part of the constitution of his collection, there will also then be a second round of presentations studying the materials and construction details. This second round will be the subject of weekly exercises for the balance of the course. For the initial presentation there will be a charette to discover the overall outline of the project. The product of the charette will be:

1/4" ground plan (basement plan not required)

1/4" balcony plan

1/4" section (longitudinal or lateral)

1/4" hardline roof framing plan

1/4" model with detailed front and side elevations (rear elevations not required)

The model should include blank massing of the two abutting properties.

The concept presentation will be reviewed by section on Friday, Jan. 29.

City of Wood
Spring 2010
Instructor: Jonathan Levi

Course Organization

week 1	GSD 6203m3 27 Jan Lecture: 'City of Wood - Part 1' Conversation: Dais Earth Issue: Course Project Issue: Exercise 1	29 Jan, 9.00a-1.00p, rooms TBA Pin-up: Architectural Bookstore Project
week 2	03 Feb Group Criticism: Exercise 1 Conversation: Wall Horizon Issue: Exercise 2	<u>05 Feb</u> Student Seminar: Case Study 1 <i>Maryann Thompson Arch's/Etzler section</i>
week 3	10 Feb Group Criticism: Exercise 2 Conversation: Threshold Figure Issue: Exercise 3	<u>12 Feb</u> Student Seminar: Case Study 2 <i>3six0-Chris Bardt/Howeler section</i>
week 4	17 Feb Group Criticism: Exercise 3 Conversation: Shelter Sky Issue: Exercise 4	<u>19 Feb</u> Student Seminar: Case Study 3 <i>Brian Healy Arch's/Ibanez section</i>
week 5	24 Feb Group Criticism: Exercise 4 Conversation: Cabinet Object	<u>26 Feb</u> Student Seminar: Case Study 4 <i>Anmahian/Winton Arch's/Meredith section</i>
week 6	<u>03 Mar</u> Student Seminar: Case Study 5 <i>Michael Meredith/ MOS Arch/Schroepfer section</i> Lecture: 'City of Wood - Part 2'	05 Mar, 10.00a-1.00p, rooms TBA Final Review: Course Project

SPRING 2010

6203M4: Materials, Constructions, Processes

Department of Architecture

Lecture

2 credits

Wednesday 11:30 - 1:00

109 Gund Hall

Friday 11:30 - 1:00

109 Gund Hall

Instructor(s)

Eric Howeler

Course Description

The course introduces a conceptual framework for the design of building assemblies, as informed by a clear understanding of construction technologies and of the properties of building materials. Building materials are presented and analyzed with emphasis on their physical and architectural properties, functions, and behavior in manufactured and installed assemblies. The design of building envelopes in various materials is examined as integrated subsystems of components in relation to the forces that shape their composition. The methodology and format of the design of building detailing are discussed, and the roles of the various participants in this process are reviewed.

6205 Environmental Technologies in Buildings – Course Syllabus

Term:

Spring 2010

Department:

Architecture

Instructor:

Christoph Reinhart (reinhart@gsd.harvard.edu)

Office hours: Weekly signup sheets outside of 331 Gund Hall

Teaching Assistants:

Eric Baczuk (ebaczuk@gsd.harvard.edu) works with Mariana Ibanez section
Eduardo Berlin (eberlin@gsd.harvard.edu) works with John Hong section
Shelby Doyle (sdoyle@gsd.harvard.edu) works with Michael Meredith section
Diego Ibarra (dibarra@gsd.harvard.edu) works with Danielle Etzier section
Kevin Hirth (khirth@gsd.harvard.edu) works with Cameron Wu section
Seth Holmes (sholme1@gsd.harvard.edu) works with Thomas Schroepfer section
Kera Lagios (klagios@gsd.harvard.edu) works with Eric Howler section
Jeff Niemasz (jniemasz@gsd.harvard.edu) works with Inge Roecker section
Azadeh Omidfar (aomidfar@gsd.harvard.edu) works with Felipe Correa section
Rashida Mogri (rmogri@gsd.harvard.edu) works with Cynthia Ottchen section
Dan Sullivan (sullivan@gsd.harvard.edu) works with Florian Idenburg section
Holly Wasilowski (hwasilow@gsd.harvard.edu) works with Maryann Thompson section

Time & Location:

Lecture -Tuesdays 8.30 - 10:00, Piper

Lecture -Thursdays 8:30 - 10:00, Piper

Reviews – 2nd year students: selected Tuesdays and Thursdays 11:30 - 12:30, Room 111

Reviews - 1st year students: selected Tuesdays and Thursdays 12:30 - 13:30, Room 111

Course Description

The primary focus of this course will be the study of the thermal, luminous and acoustic behavior of buildings in an architectural context. The course will examine the basic scientific principles underlying these phenomena and introduce students to a range of technologies and analysis skills for designing comfortable indoor environments. Students will be challenged to apply these skills and explore the role light, energy and sound can play in shaping architecture.

The first part of the class will be dedicated to a series of basic design principles of how groups of buildings can respond to prevailing solar gain, wind and daylighting patterns. We will then discuss the principles of heat storage and heat flow and cover basic manual and computer-based methods to predict the energy use of buildings.

The second part of the course introduces the art and science lighting buildings and again introduces students to manual and computer-based methods for analyzing the daylight within and around buildings.

Following a brief introduction to building acoustics, the last part of the course will touch upon a number of technologies and climatization concepts including natural ventilation, life cycle assessment as well as conventional and emerging HVAC systems. The course will end with two half-day field trips to existing buildings in the Boston area.

Learning Objectives

The course aims to help students to:

- understand and apply the scientific principles underlying the thermal, luminous and acoustic behavior of buildings,
- learn to evaluate the pros and cons of a range of technologies for creating comfortable indoor environments,
- acquire the knowledge required to critically discuss/present the environmental concept of a building.

Week	Date	Morning Lecture (8:30 – 10:00 in Piper)	Reviews/Tutorials in Room 111 (1 st year 12:30 to 13:30) (2 nd year 11:30 to 12:30)	Reading Sun Wind & Light (SWL strategy #)	Assignments are due Tuesday morning in class (contact TA)
1	Tuesday Jan 26	L01 Course Introduction; IDP and energy use in buildings		SWL Intro; Reading 1	Sections meet with TAs to install course software
	Thursday Jan 28	Site Analysis L02 Sunlight, solar envelope, solar urban design considerations	Evening Tutorial 6-8 PM in Rm 111: Direct Shading (Rhino) and Solar Envelope (Grasshopper) (Jeff Niemasz)	SWL 1-3, 20, 27, 52, 59	
2	Tuesday Feb 2	L03 Solar gains & sky models, shading, radiation maps, daylight feasibility	Related Digital Workshop on Feb 3: Direct Shading in Ecotect (Diego Ibarra)	SWL 8-10 Reading 2	Solar Envelope & Direct Shading Studies (Jeff Niemasz)
	Thursday Feb 4	L04 Bioclimatic chart and wind diagrams (quiz)	Tutorial: Radiation maps (K Lagios)	SWL 4-7, 11, 18, 26, 28, 30	
3	Tuesday Feb 9	Thermal Analysis L05 Heat storage and thermal mass		SWL 55-57, 60-64	Solar Radiation Maps (Kera Lagios)
	Thursday Feb 11	L06 Heat Flow I – Conduction, convection and thermal properties of materials (quiz)	Review: R value and thermal mass calculations	SWL 19	
4	Tuesday Feb 16	L07 Heat Flow II – Radiation and windows		SWL 15, 16	R value and Thermal Mass (Seth Holmes)
	Thursday Feb 18	L08 Shading (quiz)		SWL 12-14, 17, 24, 25	
5	Tuesday Feb 23	L09 Infiltration and internal gains (manual methods)	Review: Internal Gains	SWL 21-23 Reading 5	
	Thursday Feb 25	L10 No Class (Instructor traveling)			g value and Internal Load (Holly Wasilowski)
6	Tuesday Mar 2	L11 Load calculations I (simulation) (quiz)	Review: Balance Point Calculations Related Digital Workshop on Feb 3: DesignBuilder (Diego Ibarra)		
	Thursday Mar 4	L12 Load calculations II		SWL 51, 54, 58, 70	
7	Tuesday Mar 9	Light L13 Daylight and electric lighting	Tutorial: Daylight factor & daylight availability (K Lagios)	Reading 7	
	Thursday Mar 11	L14 Daylighting design principles			Balance Point and Load Calculation (Diego Ibarra)

Spring break					
8	Tuesday Mar 23	L15 Daylight simulations & metrics (quiz)	Tutorial: HDR Photography (S Doyle)	SWL 50, 65-69 Reading 8	Daylight Factor & Daylight Feasibility Study (Shelby Doyle)
	Thursday Mar 25	Natural Ventilation L16 Natural Ventilation - Case Studies (guest lecture by Charlie Brown)			
9	Tuesday Mar 30	L17 Natural Ventilation – Physical Principles & manual design methods (quiz)	<u>Review: Natural Ventilation</u> Calculation		
	Thursday Apr 1	L18 Natural Ventilation – Simulation (air flow network, CFD)		Reading 9	Daylight Factor and Daylight Availability (Dan Sullivan)
10	Tuesday Apr 6	L19 Acoustics – Physical Principles (quiz)			
	Thursday Apr 8	L20 Acoustics – Acoustics – Room Acoustics & Sound Attenuation	<u>Review: Reverberation Time</u>		Natural Ventilation (Eduardo Berlin)
11	Tuesday Apr 13	L21 Acoustics – Case Studies by Acentech (guest lecture by Carl Rosenberg and Ben Markham)	<u>Info Session: Modeling Acoustics (By Ben Markham)</u>		
	Thursday Apr 15	Misc L22 HVAC Systems I (Forced Air, Hydronic Systems) (quiz)			Reverberation Time (Kevin Hirth)
12	Tuesday Apr 20	L23 HVAC Systems II (Heat Pumps & Pellet Stoves, Radiant Heating,... plus examples) (quiz)			
	Thursday Apr 22	L24 Field Trip 1 (Logan Airport [TBC])			
13	Tuesday Apr 27	L25 Field Trip 2 (Artists for Humanity [TBC])			

Course Format

The course format will consist of a series of lectures (Tuesdays and Thursdays 8.30 to 10.00) that are accompanied by irregular software tutorials and review sessions (selected Tuesdays and Thursdays from 11.30 to 12.30 for 1st year students and 12.30 to 13.30 for 2nd year students). Each course TA will be assigned to a studio section and set up weekly meetings to further review what has been covered in class and to answer questions regarding 6205 assignments as well as general questions related to sustainable design. Attendance of all lectures is required. Attendance of reviews is voluntary even though students who did not attend the weekly meeting with their 6205 TA should not expect any last minute help from their TA with their assignments.

Requirements

The following deliverables will be required to pass this class:

- Timely completion of a series of nine group assignments that will be distributed via the course web site. Assignments are usually due Tuesday mornings in class. Solution keys for the assignments will be distributed about an hour after the deadline. We will not accommodate late assignments. It is up to you to plan your time accordingly. Assignment groups should be formed by students in the same studio section and there should be three groups per section (3-4 students per group).
- There will also be a series of nine in-class quizzes. The quizzes will usually take place on the Thursday following the submission deadline for an assignment and cover the same subject matter.

Methods of Assessment:

Grades will be determined based on:

- Quality and timely submission of completed assignments (54%)
- Quizzes (27%)
- Attendance of at least one field trip (9%)
- Participation in class discussions (10%)

Bibliography

Information required for the completing the assignments will be provided through the lectures. The main textbook for this course is Brown and DeKay's 'Sun Wind and Light'. However, the following list of textbooks is recommended for additional reading and has been placed on reserve in the Loeb Library under the course name.

- G. Z. Brown and Mark DeKay, *Sun, Wind & Light: Architectural Design Strategies* (2nd edition), John Wiley & Sons, ISBN: 0-471-34877-5 (paperback), 2001 (~\$67)
- Roger Benham, *Architecture of the well-tempered environment* (2nd edition), The University of Chicago Press, Chicago, ISBN 0-226-03698-7 (paperback), 1984 (~\$35)
- Alison G Kwok, Walter T Grondzik, *The Green Studio Handbook* (1st edition) Elsevier Ltd., ISBN 0-7506-8022-9 (paperback), 2007 (~\$70) <http://www.greenstudiohandbook.org/>
- Norbert Lechner, *Heating, Cooling, Lighting: Design Methods for Architects* (2nd edition), John Wiley & Sons, ISBN: 0-471-24143-1 (hardcover), 2001 (~\$85)
- Stephen Szokolay, *Introduction to architectural science* (1st edition) Elsevier Ltd., ISBN 0-7506-5849-5 (paperback), 2004 (~\$40)

Software

- We will be using an in-house plug-in for Rhino called GSD-square Rhino Toolbar which allows you to do detailed solar radiation and daylighting analysis right out of your Rhino model. To use the model run the G(SD)2 Resources Setup File which is available for download on the icourse website. Your 6205 Section TA will meet with you during the first week of classes to go over the software installation procedure. Please note that the Rhino Toolbar does not work with personal copies of Rhinoceros.
- We will be using the grasshopper plug-in for Rhino for selected course assignments. You are encouraged to use the grasshopper version from the icourse web site throughout the duration of this course.
- Even though this is not required for this course, you may want to get a temporary, free copy of Autodesk Ecotect from <http://students5.autodesk.com/>.

ISSUES IN THE PRACTICE OF ARCHITECTURE
HARVARD DESIGN SCHOOL GSD 7212 – SPRING 2010

SYLLABUS & SCHEDULE

Teachers

Maryann Thompson
Jay Wickersham

Description

This course, for students in the fourth semester of the M. Arch. I program, examines basic issues arising in contemporary architectural practice. The course challenges the students to examine critically a broad range of professional, political, business, and ethical problems that they are likely to face in practice.

Each unit focuses on a case study that describes the actual experience of an architect, including several architects of national and international reputation. The subjects of the cases include: obtaining a commission, controlling construction costs, conflicts between the client and the community, the advantages and disadvantages of specialized practice, new forms of project delivery, monitoring a contractor's performance, working in another country, methods of collaboration, and the impacts of new technology. Three or four of the architects whose cases are studied visit the class as guest lecturers.

Each unit contains material to supplement the case study, exposing the student to related topics such as the roles of professional organizations, standard AIA contract forms, government regulation and design review, the economics of practice, architectural competitions, etc. Many of the units also have companion exercises that present an ethical dilemma for class discussion, centering on an architect's conflicting duties to clients, the art and craft of architecture, colleagues, and the public.

Each student chooses a category for a written term paper, from a prescribed list. The student selects a specific topic within the general category, does appropriate research and field work, and submits a ten page paper which he or she may be called upon to present to the class.

Readings

Rather than a purchased reader, all course materials are available at the Frances Loeb Library on Reserve and on the course website.

Requirements

Each week students are required to complete reading assignments, submit a written question or comment to the TA on Sunday by 8 pm respecting the next day's case study, attend class meetings, and actively participate in class. Each student will complete a written report and selected students will deliver oral presentations. There is a final exam at the end of the course.

Grading	Class Attendance and Weekly Reading Responses	10%
	Report	40%
	Final Exam	50%

Additional credit will be given, at the discretion of the professors, to those students who make a significant contribution to class discussions, make a significant presentation of his or her term paper in class, and/or consistently pose provocative comments and questions to the reading assignments.

Schedule - Spring 2010

1) **Introduction**
January 25

- Introduction to the course & term papers
- Lecture / discussion: Overview of Architectural Profession in US
- Ethics exercise: Dilemmas of a Green Architect

2) **How to Get Work**
February 1

- Case study: Haight's School in Windsor, VT
- Lecture / discussion: The Architect Selection Process
- Ethics exercise: Paying to Play

3) **Drawing Dreams**
February 8

- Case study: Will Bruder's house in Phoenix, AZ
- Lecture / discussion: Building the Client Relationship - Programming, Scope, and Fee
- Ethics exercise: Fiduciary Obligations of Architects

No class – President's Day
February 15

4) **Understanding Contracts**
February 22

- Role-playing exercise: Owner/Architect contract negotiation
- Student reports: Contract forms, AIA and otherwise
- Ethics exercise: Competing Interests

5) **Taking the Field**
March 1

- Guest speaker: Carl Sapers
- Ethics exercise: Blowing the Whistle on the Client
- Case study: HOK's Baseball Stadium in Baltimore, MD
- Lecture: Financial Management of Architecture Firms

6) **Who is the Client?**
March 8

- Case study: Cobb's Hancock Tower in Boston
- Guest speaker: Harry Cobb
- Student reports: Public Design Review

No class – spring vacation
March 15

7) **We're not in Kansas Anymore**
March 22

- Case study: Richard Rogers's Office Complex in Berlin, Germany
- Lecture / discussion: Architects and Copyright
- Student reports: Globalization of Design Practice
- Student reports: Architectural Competitions

8) **Changes in Project Delivery**
March 29

- Case study: Barnes' Federal Judiciary Offices in Washington, DC
- Guest speaker: Chuck Thomsen
- Student reports: Turf Wars

9) **Getting Quality**
April 5

- Case study: Kieran Timberlake's Student Union in West Chester, PA
- Lecture / discussion: The Architect's Role During Construction
- Ethics exercise: Getting Quality
- Student reports: Professions in the Modern World

10) **Collaborations and Alliances**
April 12

- Case study: Australian National Museum in Canberra
- Guest Speakers: Mack Scogin and Merrill Elam
- Ethics exercise: Claiming Credit

No class
April 19

11) **Changing the Way We Practice**
April 26

- Case study: Gehry Partners and SHoP
- Guest speakers: Danielle Etzler and Edwin Chan
- Student reports: Technical Innovations by Architects

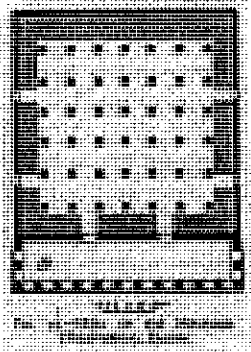
Fall 2010 Syllabi

GSD 1201
3rd Semester Core Studio
Fall 2010

Instructors:
Danielle Etzler
Eric Howeler
Florian Idenburg
Mariana Ibanez
Maryann Thompson
Jonathan Levi (coordinator)

"City and Self – Boston's New Center for Music, Dance and Drama"

Persona/Anima



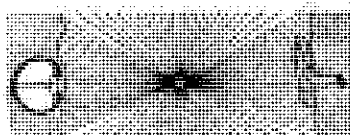
The simultaneity of elements --
persona / anima

'Performing Arts' is the rubric we use to differentiate the arts which occur in real time and depend on an audience from those which are synchronic. But the concept of 'performance' as an umbrella for grouping music, dance and drama is wholly inadequate as a description of what they share. 'Performance' is to art as 'facility' is to architecture - a literal mechanical description of what is a much broader and deeper cultural phenomenon.

All of these artistic acts are present to each other and intermingled with one another. All relate to literature and rely on the simultaneity of the visual and the aural. However, the experiential phenomenon which most clearly differentiates these events from the 'normal' experience of fact and necessity is the seemingly paradoxical immersion of the self in a totally inner world of *imagination and desire* while at the same time one is being present to community in the most public and exposed of places.

Indeed, somehow through the vehicle of community assembly, the inner self is actualized and comes to be known in ways which are otherwise concealed. The *persona* or publicly constructed self comes to meet the *anima* or the true interior being. In simplest terms – we weep in public. The theater or concert hall is therefore very much a set for the staging of our own public/personal drama. Like the ancients processing from the city along the Attic coast to Eleusis, we come as spectators of one another, in full civic regalia, ready to refresh our emotional intimacy with ourselves through the witness of a communal mystery – in our case the poetry of art in the moment.

In the Realm of the Live Arts



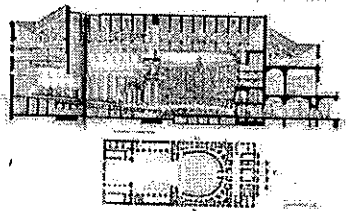
simultaneity of visual and aural

As we live in community, the question immediately presents itself – What is our common life and what is its purpose? Community is much more than settlement. It is more than the concentration of resources or the efficiency of economics. It is also more than a simple refuge from isolation or a bond of necessity. Community is *chosen* by most of us, in one way or another, because it compliments and fulfills our personhood. Indeed, we exist for it.

There are many types of community at many scales. Most often we associate membership in community with participation in groups where there is mutual recognizeability, say in numbers of less than 300, as in a 'neighborhood' or a congregation or a school. However, community can be much broader and more abstract with recognizeability being less about direct acknowledgment and more about shared purpose or interests.

In the contemporary American milieu, community is said to have been seriously eroded. Even within the atomic unit of domesticity we have retreated away from the parlor and the shared dinner table to our bedrooms, to our private televisions and our computers. Outside of schools for our young and in some places, persistent religious gatherings, there are precious few opportunities to demonstrate to one another our participation in community.

Just as we once believed the mechanism of photography might replace the subjectivity of art and we were proved wrong, so the proliferation of recorded media including audio, film and video has yet to replace live performance. Why? Because live performance – the physical presence of individuals to one another witnessing the physical act of performance – is irresistible and irreplaceable. It is the consummate act of community and as such will always have a central place in its physical form.



intimacy and intensity – the balconies of 'la scala'

At the same time recent history has demonstrated a significant undermining of health of major professional performance organizations such as symphony orchestras, ballets and traditional commercial theater. The tentative fate of these organizations has led many to despair for the health of 'high culture' in the U.S. where, given the lack of public subsidy, the lack of connection to audiences is directly related to financial viability. However, on closer inspection, one finds this malaise among major organizations to be atypical of audience interest. Instead, the phenomenon seems to be more a shift away from singular large professional performances to a proliferation of smaller, often community based, performance formats. In fact, if we look at total audiences and the diversity of performance organizations on the scene of American cities, there is a kind of explosion of interest underway.

Boston Culture

Nowhere is this explosion more evident than in Boston. It can reasonably be said that, among the cultivated cities of the world, Boston ranks among the highest in the density of cultural activity per capita. Part of this density is driven by the presence of higher arts education – the colleges and universities, four major music conservatories, a college specializing in theatrical entertainment and several academy-based repertory companies. Part is attributable to fall out from the major organizations, like the BSO, whose members drive satellite groups and performances.

However, the bulk of the activity is through community based non-profit professional, semi-professional or non-professional organizations. Many are niche oriented - exploring particular parts of the performance repertoire such as the avant-garde, early music, guitar forums, contemporary dance, musical theater, etc. Others are concerned with widening participation in performance per se such as the several 'civic' symphonies, professional alliance groups such as the 'Boston Bar Assoc. Orchestra', world touring youth orchestras, folk dance troupes, ballet schools and the many community theaters.

Just as we have witnessed among student populations, where the internet age seems to have spawned a surge in extra-curricular participation (witness the burgeoning catalogue of student organizations at Harvard), so has Boston's cultural scene adapted itself to a growing hunger for grassroots participation – one deeply expressive of its community identity.

A New Center for Community Participation in the Arts

To satisfy this demand for community based performance activity our studio will engage in the creation of a New Boston Center for Music, Dance and Drama on the North End waterfront. The new center will be administered by a non-profit organization co-ordinating a wide spectrum of both community and specialty professional organizations which now have limited access to the larger and costlier venues in Boston. Two major halls will be provided – a 1,200 seat concert hall/dance pavilion and a 600 seat studio theater (formerly known as 'black box').

The sloped floor concert hall will have acoustics and amenities equivalent to Symphony Hall, serving as an extended instrument for the projection of serious music – classical, contemporary and concert jazz. It will also accommodate the staging of both traditional and non-traditional dance troupe performances.

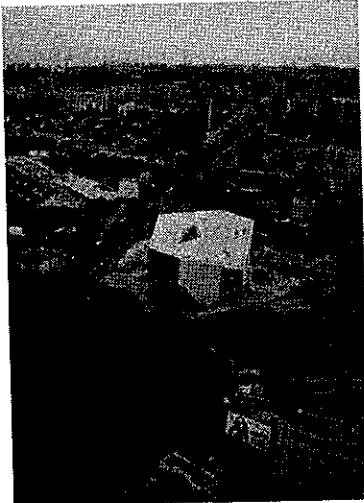
The level floor studio theater will allow for a variety of dramatic presentation types including proscenium, theater in the round and thrust stage formats. It is meant as a community house which can accommodate both experimental workshops and formal performances.

Key to the community aspect of the New Center will be the inclusion of education functions such as rehearsal, practice and classroom spaces which will enliven the building and its relationship to the surrounding community.

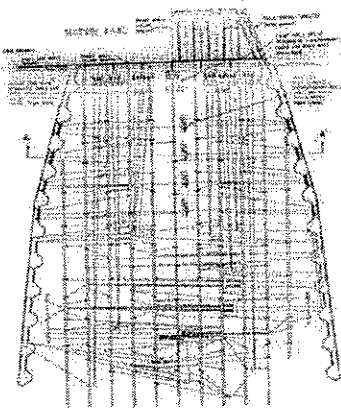
Integrated Design

The accommodation of large occupant assemblies in a single building causes a high degree of technical complexity. In our case there are several spaces requiring large structural spans with a broad range of possible approaches. The accumulation of occupants also places unique demands on environmental systems. Each of these demands is interactive with the program and with the culturally expressive possibilities of the architecture. This is a complexity which can be mastered through the application of conventional solutions which have been modified through trial and error over time. Or the complexity can be addressed through innovation, more effectively tying the building to its site, unique function and culture. For the latter the employment of technical collaborators or consultants is key.

Consultants can be added after the initial architectural solution is proposed - in a sense to 'make it work'. Or, as is increasingly the case in contemporary practice, consultants can be integrated with the design team at the earliest stage of conception in an effort to provide a greater synchrony between technique and form. For the purposes of this studio we will model this latter type of 'integrated design' through the participation of our own in-house consultants who will be available at pin-ups and at the desk. One



Civic embedment – porto



technical complexity – jesse jones theater equipment plan

engineer will focus on the relation between structure and space, the other on sustainability and the relationship between mechanical infrastructure, envelope, site and orientation.

Course Organization

The course will be organized into two streams of parallel but mutually relevant work. In the first there will be a series of three study exercises spread through the first half of the semester, targeting areas of key interest but not necessarily directly incorporable into the main project. The first two studies will be coordinated with the in-house consultants and themed according to integrated design input. The study subjects will be issued at the beginning of class on Tuesdays to be completed and presented the following Thursday in a limited two hour pin-up at the beginning of studio. Also, on Tuesdays there will be specialist consultant and senior faculty building type lecture series.

The second stream consists of the pursuit of a primarily individual, semester long project for a single building based on the studio section's 'studio manual'. The 'studio manual' for each section will be a group product and will focus on the analysis of the urban context, program, precedents and feasibility options.

Attachments

Course Schedule
Site diagram
Draft program statement
Section Assignments
Studio Manual Problem

2101M

2101M

100922 schedule 2101M Fall 2010

date	subject	PL lecture	discussion example (painter)	discussion example (architect)	supplemental lecture	in-class assignment	field assignment	reading assignment (in preparation for following session)
Thurs Sept 2	freeing your hand	Hand drawing in the architect's creative process. Examples from the work of the instructor. Hand drawing and sketch modeling. Geometric lines and free lines.	Alberto Giacometti	Sigurd Lewerentz	Bemini's bozzetti (guest lecturer Tony Sigel, conservator of objects and sculpture, Straus Center)	Painting/drawing the head with all ten fingers. Bauhaus drawing exercises: drawing circles, drawing ellipses.	visit Drawing Study Center at Boston Museum of Fine Arts. Homework: copy one master's drawing.	James Lord, <i>A Giacometti Portrait</i> Thomas Ewens, "Human Sciences and Art Education: The Theory of Mediation" ---, "Rethinking Technology I" ---, "Rethinking Technology II" Erwin Panofsky, <i>Perspective as Symbolic Form</i> Aaron Tugendhaft, "Paradise in Perspective: Thoughts from Pavel Florensky" http://www.kronos.org.pl/index.php?23250.469 listen to J.S. Bach "Two-Part Inventions"
Sept 9	edge, contour, profile negative space.	Types of hand drawing, types of drawing media. Control of relative position through negative space. Cross-pollination between genres and techniques. Co-existence of different rationalities within one work.	Picasso	Le Corbusier	modes of cognition: Jean Gagnepain's Theory of Mediation (guest lecturer Dr. Thomas Ewens)	Charcoal drawings of plants.	Drawing trees in Harvard Yard: positive/negative space, perspective correction. Homework: visit Carpenter Center: draw major perspective with corresponding plan fragment.	
Sept 16	perspective, proportion.	Observed and constructed perspective. Control of proportion through scaling. Correcting common perceptual/representational errors. Perspective = system of representation and distortion. Perspective system allows construction of fictive space.	Piero della Francesca	Steven Holl	parallels between constructed perspective and the well-tempered scale (guest lecturer Dr. Marina Korsakova-Kreyen)	2 nd section: Still life with geometric and organic elements.	1 st section visits Prudential Center Observatory 1:30-2:30: perspective drawings. Homework(both sections): sketch your design project in ink wash, gouache, and/or watercolor	Jodi Hauptman, "Medium and Miasma" in <i>Georges Seurat: The Drawings</i> "A painter's notes on his drawing" in Jack Flam, <i>Matisse On Art</i> (1939)
Sept 23	mass, light and shade.	Grouping: working within doubt. Complementary precise and imprecise ways of working.	Seurat	Louis Kahn	differences and common ground between drawing and painting (guest lecturer Madeleine Hatz)	1 st section: Still life with geometric and organic elements.	2 nd section visits Mt. Auburn Cemetery: watercolor/landscape 1 st section: field survey of historical bldg on Harvard campus homework: survey historical bldg in Boston	Jun'ichirō Tanizaki, <i>In Praise of Shadows</i>
Sept 30	line and tone. Composing light and shade. Interior and exterior. Empathy. Precision.		Rembrandt	Peruzzi, Borromini, Aalto			1 st section visits Mt. Auburn Cemetery: watercolor/ 2 nd section: field survey of historical bldg on Harvard campus homework: isometric/paraline sketches of your studio design project	Roland Barthes, "The Plates of the Encyclopedia" in <i>New Critical Essays</i>
Oct 7	isometric drawing details, tectonics.	The mind's eye. Western and Eastern examples of sketchbooks, patternbooks, exempla, personal manuals, field studies.	Diderot's workshop	Carlo Scarpa			visit Harvard Museum of Natural History. First group arrives 1:30, second group arrives 3:30	
Oct 14	finding your hand	(final review)			guest critics Sue Gussow (Cooper Union), Kyma Leski (RISD)			

2101M: Visual Studies
Peter Lynch
Department of Architecture
Workshop - 2 credits
Thursday 8:30 - 10:00
109 Gund Hall

Thursday 12:30 - 3:00
402 Sumner Road
Thursday 3:00 - 5:30
402 Sumner Road
53 students: morning lecture on Thursdays from 8:30-10 in room 109 (lecture format: room with 60 tablet chairs and full AV technology), followed by two hands-on sections in room 402 at 7 Sumner Road building (an open studio/drawing room)

100819 course intro

2101M1: Visual Studies
Peter Lynch
Department of Architecture

This course cultivates the ability to draw by hand and encourages the incorporation of hand drawing into the architect's design process. It does not address drafting. Each session begins with a lecture by the instructor examining one aspect of drawing, a discussion about particular architects and painters and their approach to drawing, and a short presentation by a guest lecturer, expanding the subject to fields beyond architecture. The lecture portion is followed by in-studio drawing assignments and a drawing project in the field, started during class time and completed as homework. The final session will be an informal pin-up/ critique. Please bring the following materials to the first class: sketchbook (your favored style/size), large newsprint sketch pad (18"x 24" or 24"x 36"), favorite drawing media (pen, pencil, marker, or any other).

Architects who are fluent in various kinds of freehand drawing are able to generate, refine, and evaluate design ideas more effectively than architects who depend upon the computer for visualization. Along with other freehand processes like painting and sculpting, drawing is a complement to computer-based and conceptually-based design methods. Rather than emphasizing verbal, analytical, and sequential thinking, hand drawing cultivates visual, perceptual, and simultaneous thinking. Perhaps for this reason, many contemporary design practices (Herzog & de Meuron, Alvaro Siza Vieira, Steven Holl, Peter Zumthor...) balance digital and manual processes. Your hand—meaning the gestures and techniques most natural to you, the repertoire of curves, shapes, and marks that arise, and the forms and spaces you recognize within those marks—should be treated with great respect. This sensibility is at the core of what you offer as an architect. This course offers you a way to develop and refine your creative process.

Cultivating the hand requires practice. Part of the work is technical. Each medium has its own precision and you need to develop the necessary motor control, which takes time. But there is an even more essential aspect: you must cultivate the ability to see—to step outside stereotypes, preconceptions, and habitual representations. It is surprisingly difficult to recognize and represent what actually lies in your field of vision. Only after you are able to see and represent what is physically before you, will you be able to visualize and manifest what lies in your "mind's eye." Drawing from life is the center of this training. Our life drawing assignments will draw upon the teaching approach of Sue Ferguson Gussow, painter, professor at Cooper Union Irwin S. Chanin School of Architecture, and author of *Architects Draw*, a remarkable freehand drawing curriculum (New York: Princeton Architectural Press, 2008).

Architects who draw with freedom and control can visualize their design intentions better than architects who are unable to draw. "Visualization" suggests a concern with appearances—with what an imagined space or structure might look like—and some of the techniques we practice in the course, like constructed perspectives, will help you generate accurate views from rough plans and dimensional info. "Visualization" includes

more than optical vision, however. To visualize means to hold in the mind's eye, to comprehend in whole and part. Drawing can explore any object, phenomenon, or function—visible or invisible, physical or imaginary—that occupies or unfolds in two or three dimensions. As required by the creative process, drawings may be analytical or open-ended, descriptive or evocative, precise or ambiguous. The range of possible marks is infinite, marks can be interpreted in multiple ways, and the absence of marks (or their vagueness) carries significance. Unlike rendering or modeling, sketching is able to suspend information: to say nothing where nothing should be said. The white space of the paper, a field of silence, isolates and floats the designer's intention as the ocean floats a ship. Within this white space we retrace the designer's thought process, overlaying our own critical understanding. For this reason a drawing can delineate nothing more than what the mark-maker wishes exactly to say, and, at the same time, much more than what he or she consciously intends.

In every creative practice—manual, conceptual, digital—ideas are put into play, sent into circulation. Moments of certainty alternate with moments of uncertainty, decision alternates with reflection. The speed of this circulation differs from design method to design method. Creative methodologies that rely upon drawing are often fast since sketching allows one to effortlessly modify the working material and immediately gather feedback.

If creative practice is a circulation process, it is also a translation process. The artist/designer cycles through different cognitive modes. These various ways of thinking may be of the same family (like tracing a curve with the hand and following it with the eye) or radically different (like framing an abstract intention, inputting data, and viewing the resulting computer image.) Many computer-based design processes introduce a mental distance between test and result, intention and consequence. The architect's embodied, intuitive understanding of the design proposition may be less significant and definitive than what the computer generates. This mental distance can be productive: translation between different modes can provoke new ideas, and it can increase the range of criteria brought to bear on the project during the schematic design phase. It may also cause the architect to lose understanding and control of the final work. Hand drawing, in contrast, forces the architect to return time and again to his or her design intent. The limits of drawing help the architect to reconnect with the perceptual and practical limits of architecture. As a physical, manual process, drawing schematically enacts or rehearses the physical act of building. As a physical, bodily activity, it can serve as a reminder of the ultimate experiential basis of architecture—the occupant's encounter with material, space, and light. Drawing helps us to internalize and embody an understanding of the built work.

Some creative methods that rely upon hand drawing keep the circulation of thoughts and ideas close to hand. While sketching, intentions slip from grasp but are quickly retrieved, like a bar of soap caught in the shower. Discoveries occur during these moments of suspension. The working material is constantly refined and adjusted, sometimes abandoned and replaced. Invention is a kind of overturning. Moments of conception/origination are thoroughly mixed into the process of deliberation and

development: it would be misleading to speak of the work in terms of key concepts or ideas. This approach explores and expands the space of possibilities within a well developed, highly refined mode of practice. In architecture one could mention Schinkel, Sigurd Lewerentz, or Louis Kahn.

Other architects hold the working material less close to hand. The creator cedes control, comfortable in not-knowing, and allows the material to follow its own trajectory, propelled by chance and the designer's unconscious mastery of technique. Errors are useful: the undependability of the hand becomes productive. The artist/designer steals strange fruit from an unknown garden. Alvar Aalto, Hans Scharoun, and Enric Miralles are certainly examples of this approach.

Naturally there are more than these two possibilities: we could name architects (like Alvaro Siza Vieira) who defy either category, or who expand the spectrum to the former (classical) or latter (romantic) side. Architects who are inspired by avant-garde art practices set up an intentionally large distance between source material and working material, or employ methods that are intended to generate moments of crisis, transformation, and dislocation. One could mention the blind scribbles of Wolf Prix, or the drawings of John Hejduk, for their reliance upon poetic and painterly source material. Hand drawing plays an essential, but different, role in all these creative processes. N.B.: for some of these architects sketch modeling plays an equivalent and sometimes even more important role than hand drawing. An exploration of sketch modeling, "sister method" to hand drawing, is beyond the scope of this course, but we will make frequent reference to it.

A final note: In this course we speak about drawing in a pragmatic way, focusing upon its potential to strengthen your personal design approach. To those who embrace drawing, it becomes obvious that its value is even greater. Learning to draw is an inquiry into, and meditation upon, the visual phenomenal world. Once the habit of drawing takes root, everything that lies before you becomes a source of wonder and inspiration. Drawing is a way to reflect upon space—to explore the fundamental logic of pattern, composition, and spatial organization. Drawing is foundational: every hand-drawn line is an act of division or connection, and every circle drawn freehand is a rediscovery of the circle. Drawing is a mnemonic device: what you draw becomes engrained in memory, and your sketchbooks become a storehouse of insights and creative ideas. Finally, drawing is a magical act, one of the simplest possible ways to conjure up a world.

gsd21/02m2: Projective Representation in Architecture

fall 2010

Cameron Wu

Tuesday 2:00-3:30, lecture Gund 111
Thursday workshops TBD

Teaching assistants: Ted Baab and Michael Burton

Historically, certain kinds of reciprocity between geometry and architecture have been used to bring about rational causes and practical means of formal innovation. Today, the digital medium is having unanticipated effects on this reciprocity. The results are profound innovations not only in the realm of form as such, but also in the process of translating abstract geometric concepts into building construction principles.

Between the excesses of curved geometries and the economic constraints of building construction lies a seemingly incommensurable disparity. On the one hand, the digital medium affords the architect a means to model three dimensional forms that are entirely free of planarity. On the other hand, it aids the ongoing industrial production of materials according to the geometric extrusion of linear and flat components and surfaces. To operate in this breach, it is necessary to acquire a geometric vocabulary that negotiates between oblique and curved forms and the economically determined mechanical constraints of building assembly. This vocabulary, derived from projective and topological geometry, constitutes an auxiliary system of order, one which can ultimately serve to discretize curved surfaces into flat units, and thus translate complex surfaces into forms constructible at an architectural scale. Such an application of geometry produces a continually expanding repertoire of three-dimensional architectural form. Among the most far reaching effects is the recalibration of the long standing relationship between the part and the whole in architecture.

Lectures tracing historical and theoretical lineages and technical bases of orthographic and perspective projection, projective geometry and topology will provide the foundations for the development of a vocabulary. Workshop exercises will apply these principles to particular problems of surface redefinition. The rendition of curvatures according to the logic of different patterns will demand critical assessment. The overall course objective is to provide the tools and critical instruments to imagine and represent with precision, dexterity, and virtuosity, a continually expanding repertoire of three-dimensional architectural form.

Structure and Requirements of the Course

Throughout the course, lectures and demonstrations will provide the background and technical knowledge for the short weekly assignments. TAs will occasionally hold additional workshop sessions during which basic computer modeling skills will be provided.

Basis of grade: 67%: Development of assignments and attendance.
33%: Final Project

October 19

Lecture 01:

Introduction: Projection as a Basis for Representation In the Digital Age

Technique:

1. Systems and planes of projection: Mongean collapse of 3-space.
2. Basic double projection Descriptive Geometry: line + plane typologies.
3. Tri-metric and perspective constructions.

Reference:

Booker, Peter J., *A History of Engineering Drawing*, London, 1963. (Chapters 1 and 5)

Roever, William H., *The Mongean Method of Descriptive Geometry*, MacMillan Co. NY 1933, (pp. 1-11)

Alberti, Leon Battista, *On Painting*, 1434-36, Trans. J. Spencer (Yale, 1966).

Workshop 01:

Tri-metric (parallel oblique) and perspective construction.

October 26

Lecture 02:

Guest Lecturer: Preston Scott Cohen
Projection and Anamorphosis

Reference:

Paul B. Yale. *Geometry and Symmetry*

Evans, Robin, "Translations From Drawing to Building", *AA Files* no. 12, Summer 1986. (also in *Translations From Drawing to Building and Other Essays*, MIT Press, 1997)

Cohen, Preston Scott, "Regular Anomalies: The Case of the Tubular Embrasure at the Sacristy of San Carlo ai Catinari", *AA Files 41*, Fall 2000

Workshop 02:

Projective, affine, and non-linear transformations.

November 02

Technique:

1. Curves and surfaces
2. Conic sections
3. Conic surfaces
4. Traditional surface class construction
5. Curve fields (iso-param fields)
6. Swept and ruled surfaces

Reference:

Pottman, Helmutt. *Architectural Geometry*, Chapters 7, 9, 12. (Bentley Institute Press, 2007)

Workshop 03:

Curve and surface construction

November 09

Lecture 03:

Case Studies: Foster's London City Hall, Miguel Fisac, Tel Aviv Museum

Technique:

1. Developable surfaces:
 - a. Extrusions
 - b. Surfaces of revolution
 - c. Projected developables
 - d. Combined conics
 - e. Surfaces from piecewise curves
 - f. Developable NURBS surface
2. Folded plates
3. Quad-panelizable surfaces

Reference:

Pottman, Helmut. *Architectural Geometry*, Chapters 15, 18. (Bentley Institute Press, 2007)

Workshop04:

Developable and PQ mesh surfaces. Patch exercise.

November 16

Lecture 04:

Guest Lecturer: Antoine Picon

Secrecy and Innovation in the Architecture of Philibert de l'Orme

Technique:

1. NURBS
 - a. Definitions, b-spline, control points,
 - b. Construction of NURBS curves (De Cateljau's algorithm)
 - c. Construction of NURBS Surfaces (Greg)
2. Braids, Knots, and spanning surfaces
 - a. Definitions, closed curves
 - b. Construction of spanning surfaces
 - c. Minimal surfaces
 - d. Non-orientable surfaces

Reference:

Louis Kauffman, *On Knots*

Heirich W. Guggenheimer, *Differential Geometry*

Michael Henle, *A Combinatorial Introduction to Topology*

Workshop05:

Knots and spanning surface construction

November 23

Lecture 05:

Guest Lecturer: Andrew Witt, Director of Design Innovation, Gehry Technologies Europe

Technique:

1. Discretization methods: Pre-rational and emergent surface behavior
 - a. Folded Plates
 - b. Ruled discretization (TAMA method)
 - c. Developable discretization by generatrix
 - d. Swept discretization
2. Discretization methods: Post-rationalization
 - a. Tangent planes + singularities
 - b. Secant plane method
 - c. Patches (Foster, Utzon)
 - d. Discretization with deviation (Novartis)

Reference:

Alexandrov, P.S., *Combinatorial Topology*, New York, Dover, 1998

Carter, J. Scott, *How Surfaces Intersect in Space*.

Guggenheimer, Heirich W., *Differential Geometry*, 1977

Workshop06:

Panelization techniques for non-developable surfaces

November 30

Lecture:

Guest Lecturer: George L. LeGendre, ijp corporation (London, UK)

Parametric Geometries and Modulations

Workshop 07:

Automated panelization using Grasshopper

GSD 2107M1 - Digital Media I - Topics in Parametric and Generative Geometry and Modeling

Fall 2010

Andrew Witt

awitt@gsd.harvard.edu

Office hours: Tuesday 2PM-3PM on appointment

Teaching Assistants: Ashley Merchant, Bernard Peng, Blair Cranston

2:00PM - 5:00PM Monday, Room 111 (Lectures and Workshops)

6:00PM - 7:00PM Monday, Room 111 (Optional Review Workshop)

2:00PM - 4:00PM Wednesday, Room 111 (Optional Review Workshop)

This class explores the design and science of logical form making, examined through geometry, parametric control, algorithms, and digital tools. The point of departure is a cumulative sequence of fundamental topics and problems in design geometry which have recurring impact on the history of form. These problems will provide a context and pretext for a rigorous introduction to parametric modeling, algorithmic automation, and the mathematical principles underpinning them.

These logical investigations of modeling will cultivate a certain objective approach to form that explores the application of parametric approaches that are both deductive (for example, topological classifications and surface invariants) and empirical (for example, material deformation and generative detailing). Thematically, the course will foster an integrated understanding of topics such as parametric geometry definition, surface geometry qualification, and the converse dynamics of packing and subdivision.

As a part of the course, students will use the parametric design tools Digital Project and CATIA, supplemented by other tools to interrogate and permute these design problems. An exacting standard of vocabulary and nomenclature will be maintained by students throughout their involvement in the class. Through a series of lectures, software tutorials, and mathematical workshops students will respond to the fundamental design problems with a progression of digital design modeling exercises culminating in a final project which will demonstrate appropriate synthesis of design ambition, mathematical characterization, and parametric control.

Format

The class will be a weekly 3-hour session divided into a lecture half and software and geometry workshop half. The class will be organized thematically, with each theme encompassing certain historical, technical, and formal principles.

Evaluation

Students will be evaluated through a series of modeling problems and a final project.

Schedule:

Class Date	Lecture Topic	Workshop Topic
Monday, September 13, 2010	Curves and Curvature	Curves, Patterns
Monday, September 20, 2010	Surfaces and Topology	Spanning and Medial Surfaces
Monday, September 27, 2010	Subdivisions and Packings	Surface Curves and Powercopies
Monday, October 04, 2010	Automation and Scripting	Knowledge Patterns, Datasheets
Monday, October 11, 2010	Material Geometries	Rules, Optimizations, Analysis
Monday, October 18, 2010	Final Review	Final Review

Assessment: Grades will be evaluated based on the formal and experimental ambition of assignments, the conceptual clarity, cleverness, and precision of the execution, and the mastery of technical concepts as evidenced by submitted models, review interactions, and class participation.

20% Attendance.

40% Interim assignments

40% Final assignment

September 13, 2010 - Curves and Curvature

Problem: How do curves constrain built form?

This class examines the parametric description and behavior of curves and curvature. The specific constraints induced by geometry of curves on the surfaces, volumes, and assemblies that are constructed from them are also considered through mathematical description and examples from practice.

Theoretical topics: Sets and numeric functions, conic sections, Nurbs curves, osculating circles, involutes and evolutes, osculating tangent and normal planes, torsion, mono- bi- and tri-tangencies, Biarc discretization, vector fields, symmetries.

Technical topics: Curves, curvature conditions, parameters, formulas, use of powercopies, parametric animations.

Assignment: Parametric curve field animation.

References:

Carpo, Mario and Frederique Lemerle. *Perspective, Projections, and Design: Technologies of Architectural Representation*. New York: Routledge, 2008.

Edwards, Lawrence. *Projective Geometry*. Edinburgh: Floris Books, 2003.

Monge, Gaspard. *Geometrie Descriptive*. Paris: Baudoin,

Pedoe, Daniel. *Geometry: A Comprehensive Course*. London: Cambridge University Press, 1970.

September 20, 2010 - Surfaces and Topology - Assignment 01 Due

Problem: What is the simplest way to physically build a topologically complex surface?

This class examines the geometric and historical range of architectural surface types. Theory and construction methods for developable, spanning, and medial surfaces will be introduced. The class will particularly focus on surfaces which can be constructed from flat or singly-curved material.

Theoretical topics: Surface intersections, ruled surfaces, developable surfaces, affine developables, rectifying and tangent developables, curvature measures, implicit surfaces, kinetic surfaces, spanning surfaces, knot complexes, medial surfaces.

Technical topics: Multi-section surfaces, fill surfaces, swept surfaces, tangency conditions, developable surfaces, unfolding, creation of powercopies, drawings, exporting data.

Assignment: Physical model of a topologically complex surface.

References:

Kauffman, Louis. *On Knots*. Princeton: Princeton University Press, 1987.

Toponogov, Victor Andreevich. *Differential geometry of curves and surfaces*. Boston : Birkhauser, 2006.

Shelden, Dennis R. *Digital surface representation and the constructibility of Gehry's architecture*. Cambridge: MIT, 2002.

September 27, 2010 - Subdivisions and Packings - Assignment 02 Due

Problem: How can an irregular (2D or 3D) shape be smoothly patterned?

This class examines the converse logics of subdivision and packing in the context of surfaces. Particular attention will be paid to invariants that help to classify the structure of forms and subdivide them in an ordered and formally determinate way. The class also introduces methods for the automated articulation of surfaces and basic data extraction. Examples from practice of the generation of subdivisions will be presented.

Theoretical topics: Graphs, curve skeletons, topology of circle packing, orthotropic and non-orthotropic armatures, wrapping curves, reflect lines, ruling lines, geodesics, lines of curvature, modular subdivisions, polytopes, cellular growth.

Technical topics: Using knowledge patterns, Datasheets, Smart Tags, embedding drawings in powercopies.

Assignment: 3D model and generative details of module drawing assemblies

Potie, Philippe. Philibert De L'Orme: *Figures de la pensee constructive*. Marseille: Perentheses, 1996.

October 04, 2010 - Automation and Scripting - Assignment 03 Due

Problem: How can the detailing of nonstandard components be automated?

This class builds on the previous one to elaborate basic techniques for automation and modular surface effects. It also examines methods for embedding drawings, quantitative analysis, and fixation details into adaptive components. Examples from practice of generative detailing will be presented.

Theoretical topics: Variables, conditionals, loops, features methods, geometry creation.

Technical topics: Writing knowledge patterns, datasheets, excel statistical analysis and quantitative methods.

Assignment: Final assignment is given, details to be determined.

Stanley, William Ford Robinson. *A Descriptive Treatise on Mathematical Drawing Instruments*. London: EFN Spon, 1878.

October 11, 2010 - Material and Mechanical Geometries

Problem: How can material and fabrication constraints be integrated into 3D models?

This class considers the related implicit geometries of material deformation and mechanical operation. The plastic deformations of materials, including folding and curving, will be developed as explicit parametric systems which can be embedded as design constraints within models. The verification of machine constraints, such as forming radii, size boundaries, and angle limits will also be considered.

Theoretical topics: Economies of fabrication, parametric geometry of folded packing, surface fitting, plastic deformation, geometry of shell behavior.

Technical topics: Optimizations, surface fitting.

Assignment: No assignment, continue work on final assignment.

References:

Timoshenko, Stephen. *Theory of Elasticity*, McGraw-Hill Book Company, 1st Ed. 1934, 2nd Ed. 1951 (with J. N. Goodier)

October 18, 2010 - Final Review - Final Assignment Due

Summary: The final review will require the production of a model, generative detail drawings, and analytic statistics of your design. You may optionally include an analytic animation to describe the parametric behavior of the model. Details of the final assignment will be provided in class October 04.

**GSD 2107M2 - Digital Media 2 – Developing Dynamic Content through Still and Moving Image
Fall 2010**

Chris Hoxie

choxie@gsd.harvard.edu

Teaching Assistants: Casey Hughes, Greg Tran, Marshall Prado

2:00PM - 5:00PM Monday, Room 111 (Lectures and Workshops)

This class will extend the parametric concepts developed in Digital Media I into the development and representation of dynamic content through the disciplines of still and moving image. Iterative design workflows will be used for generating, analyzing and representing variations in form, light, materials, and temporal simulations in the design development process. The course will thematically be organized around the dialectic between analytic and perceptual models of representation. Strategies for the creation of lighting, materials, integrated graphics, motion, editing and compositing will be explored between the polarities of analytic abstraction and the verisimilitude of experience.

Topics covered include: abstract lighting strategies and the incorporation of motion graphics for analytic representation; time lapse lighting analysis; image based lighting & photo compositing; the creation of large datasets for site simulation; and the explication of the content development pipeline from modeling and scene development, to rendering and animation, through to post production and editing.

Software

3ds Max Design 2011

Vray 1.5 Sp5

Photoshop

After Effects

Readings

Reading, case studies and tutorials to be posted weekly through the course web site.

Assignments

Select a model developed in Digital Media M1 to develop as serialized imagery or an animation for a final project to be presented during exam week. The same geometry will be used for a series of weekly exercises exploring the modules topics.

October 25, 2010 – Synthetic Environment Creation

- Overview:** An overview of the disciplines and technologies involved in the creation of synthetic environments: geometry and large datasets, lighting and environment simulation, texturing and complex shader development, rendering development, and post production.
- Topics:** Rendering workflow overview.
- Workshop:** Render Development Pipeline
- Assignment:** Project Prep

November 01, 2010 – Lighting and Environment Simulation

- Overview:** This class examines the interrelationship between sun, sky and climatic phenomena for physically based environment simulation. The class will explore the use of time lapse environments for both analytic and perceptual models.
- Topics:** Daylighting simulation & time lapse animation.
- Workshop:** Vray Physical Sun and Sky and Daylighting System
Image Based Lighting
Time Lapse Lighting
- Assignment:** Lighting and Environment Development

November 08, 2010 – Compositing

- Overview:** Compositing provides the ability to separate out footage into different passes for greater creative control in post production as well as the ability to combine CG and real world footage. This class will examine the compositing workflow, color grading and post production vs. in frame lens and environment phenomena.
- Topics:** Photo compositing into back plate photography, HDRI lighting, matte objects & post production.
- Workshop:** Compositing in 3dsmax
Compositing, Color Grading and Phenomena in After Effects
- Assignment:** Compositing

November 15, 2010 – Photography, Cinematography and Animatic Creation

- Overview:** This class will examine the representation and perception of the built environment through the disciplines of photography and cinematography and the differences in the reception of space through still and moving image.
- Topics:** Color mapping, dynamic range, exposure, focal length, white point, motion typologies, motion construction, animation construction and editing in after effects.
- Workshop:** Camera Construction
Animatic Construction
After Effect Editing
- Assignment:** Serialized Image Development / Animatic Construction

November 22, 2010 – Artificial Lighting & Lighting for Animation

- Overview:** In spite of the massive gains experienced by Moore's Law in computation, the equation to solve indirect lighting is still computationally too expensive to use fluidly in the design process. Exact approaches to indirect lighting are as yet unreasonable for still development and unquestionable for animation so the control and understanding of approximation approaches are critical for both quality and speed. This class will focus on the use of indirect lighting for schematic and production workflows for both still and moving image.
- Topics:** Global illumination algorithms, light theory, IES lighting.
- Workshop:** Artificial Lighting Typologies
Approximation Approaches for Animation
- Assignment:** Artificial Lighting / Lighting for Animation

November 29, 2010 – Shader Development: Texturing and Core Reflection Models

- Overview:** Texturing represents the largest variable outside of geometry construction in the creation of synthetic images and is also the largest determinant of a scenes scale and level of abstraction. This class will explore physically based material prototyping for both abstract and realistic scene development.
- Topics:** Texture photography, tiling and non tiling texture aggregates, pattern development & shader construction.
- Workshop:** Shader Development
Panelization: Repetition and Variation
- Assignment:** Materials

04201M1: Buildings, Texts, and Contexts (HIS 0420100)

Architecture

Lecture - 2 credits

Tuesday Thursday 10:00 - 11:30 Gund Hall - Piper Auditorium

INSTRUCTOR(S)

K. Michael Hays, Erika Naginski

COURSE DESCRIPTION

The two-module sequence 4201-4202 will be taught as a single semester-long course for Fall 2010. This course is structured as a dialogue between historical and theoretical frameworks that affect our understanding of architecture and its genesis. The organizing principle here is syncretic as opposed to chronological, and synoptic rather than merely factual. We treat a selected range of concepts developed by philosophers, historians, and theorists to explain the production and experience of architecture. We move back and forth between projects from the early modern to the (almost) contemporary periods by means of one or several theoretical intertexts, which we use to open up a historical narrative across examples. We set the stage by means of the persistent dilemma of theoretical-historical thought, inaugurated here by concepts from Kant and Hegel: Is art an autonomous form or is it determined by its historical context? We then turn to Classicism, its emergence as aesthetic doctrine during the Renaissance, its association with concepts of order and universality, its historiographic legacy, and its complex relation to Modernism. From there, we move to the interaction of ideology and representation; we discuss the symbolics of perspective, architectural metaphors of power in the Baroque period, and the discursive development and transformation of ideology in Althusser and Jameson. Deleuze is the major interlocutor in the next sections, which focus on the diagrammatic imagination, its philosophical roots in Leibniz, its use as a materialist social critique, and its implications for architectural design. Deleuze's elaboration of the diagram also serves as a stepping stone first for a discussion of the Sublime in Enlightenment and Postmodernist contexts, and second for the key concepts of utopia, dystopia, and heterotopia, respectively. We conclude with the persistence of the Dialectic from Marx to Adorno to the present in order to address the production of space, the problem of abstraction, and the contemporary status of immanent critique.

04202M2: Buildings, Texts, and Contexts (HIS 0420200)

Architecture

Lecture - 2 credits

Tuesday Thursday 10:00 - 11:30 Gund Hall - Piper Auditorium

INSTRUCTOR(S)

K. Michael Hays, Erika Naginski

COURSE DESCRIPTION

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GSD 4205-M1 BUILDINGS, TEXTS, AND CONTEXTS
MODERNITY AND ARCHITECTURE 1900-1945
Fall 2010

Instructor: Eve Blau
Teaching Fellows: Delia Wendel, Jawn Lim
Mondays and Wednesdays 10:00 – 11:30, Piper Auditorium

Course Description

This module is concerned with the pluralism of modernity in the first half of the 20th century; with the many different conceptions of both the modern condition and the role of architecture in shaping the spaces of modern life and society.

Like the earlier modules, this one is organized in terms of a series of case studies of buildings, unbuilt projects, and urban assemblages, which will be broadly contextualized in terms of larger problematics and themes which are critical to understanding modern architecture and the debates which constituted the discourses of the "Modern Movement" in the early decades of the 20th century.

Some of the principal themes of modernity which will be explored insofar as they relate to major works, ideas, and debates about architecture and the city in the module include:

- The new scale of modern society: mass urbanization, mass society, mass politics, and so on, which are some of the tropes of modernist discourse used to describe the amplified scale of modern life experienced (and imagined) in the early decades of the 20th century. We will look at the ways in which architecture and urbanism responded to the social imperatives of scale during this period, generating models, projects, and built structures in scale with the expanding dimensions of modern life.
- New organization and methods of production: the development of methods of mass production and the changing relationship between them and architecture, as well as the ideological impact of mass production technology (concepts of Fordism and Taylorism) on both the design and use of built space.
- The evolution of new spatial conceptions: especially conceptions of space in terms of time, which had more to do with experiments in the new mass media of photography and film, and philosophical discourses regarding the relationship between objective and subjective modes of cognition (knowing the world), than they did with advances in theoretical physics, and which contributed to a reconceptualization of architectural space and design in the 1920s and 1930s.
- Finally, a theme that pervades the period: the evolution of mass political parties on the both the left and right, and the contested space of the city and housing which were political rallying points. This context will also provide a framework for considering relationships between political ideology and the architectural avant-gardes during a period of radical social change and economic instability.

The Buildings Texts and Contexts series is meant to promote students' personal reflection through a close association between lectures and sections. Requirements: two lectures per week plus one discussion section per week; readings, prepared discussion, and reading response papers; a final take-home examination. Aside from lecture attendance, presence at section is *mandatory*. The weekly section assignments given by section leaders are also an integral part of the course evaluation. Basis of grade: assignments and performance in section. Readings serve as background for the class lectures and should be completed *before* each class. *All readings listed here are required*. Course readers can be purchased at Gnomon Copy in Harvard Square.

SCHEDULE OF READINGS AND LECTURE TOPICS

Week 1. Introduction / Scale + Modernity: Garden City

8 Sept

Frederick Engels, *The Condition of the Working Class in England* [1844] (London: Granada, 1982), pp. 54-66 ("The Industrial Proletariat," and section on London of "The Great Towns")

Ebenezer Howard, "The Town-Country Magnet," *Garden Cities of Tomorrow* [1898] (Eastbourne, England: Attic Books, 1985), pp. 13-20.

Week 2. Type + Modernity: Otto Wagner's Metropolis + The Deutsche Werkbund: Architecture and Industry

13/15 Sept

Camillo Sitte, "Chapter X: Artistic Limitations of Modern City Planning" in *City Planning According to Artistic Principles* (1889) trans. in Collins and Collins, *Camillo Sitte: The Birth of Modern City Planning* (NY: Rizzoli, 1986), pp. 243-250.

Eve Blau, "Supranational Principle as Urban Model: Otto Wagner's *Grossstadt* and City Making in Central Europe," *Histoire de l'art du XIXe siècle (1848-1914), bilans et perspectives*. (Paris: Musée d'Orsay, Ecole du Louvre, 2008).

Otto Wagner, "The Development of a Great City," (1911) reprinted in *Oppositions 17* (Summer, 1979): 102-116.

Frederic J. Schwarz, "Fashion," *The Werkbund: Design Theory & Mass Culture Before the First World War* (New Haven: Yale Univ. Press, 1996), pp. 26-43.

Hermann Muthesius and Henry van de Velde, "Muthesius/van de Velde: Werkbund theses and antitheses," in Ulrich Conrads, *Programs and manifestos on 20th-century architecture*, (Cambridge: MIT Press, 1964) pp. 28-31.

Week 3. New Spatial Paradigms: Adolf Loos's 'Raumplan' + 'Abstract Space' from Stereography to Cubism and De Stijl

20/22 Sept

Adolf Loos, "Potemkin's Town" (1898), "Architecture" (1910) in Tim and Charlotte Benton, *Form and Function* (London: Granada, 1975), pp.26-27, 41-45

August Schmarzow, "The Essence of Architectural Creation," in H.F. Mallgrave and Eleftherios Ikononou, *Empathy, Form and Space: Problems in German Aesthetics 1873-1893* (Santa Monica: Getty Center, 1994), pp. 281-296.

Laszlo Moholy-Nagy, *The New Vision* (1928), repr. (NY: Wittenborn, 1946), pp. 56-64.

Week 4. Space-Time: Mies's Transparencies + Le Corbusier's Five Points

27/29 Sept

Eve Blau, "Transparency and the Irreconcilable Contradictions of Modernity," *PRAXIS 9* (2007): 50-59.

Sigfried Giedion, *Building in France, Building in Iron, Building in Ferro-Concrete* (1928) reprint (Santa Monica: Getty Center, 1995), pp. 85-93, 167-189 (text and image captions).

Bruno Reichlin, "Jeanneret—Le Corbusier, Painter—Architect," in Eve Blau and Nancy Troy, eds. *Architecture and Cubism* (MIT Press, 1997), pp. 195-218.

Le Corbusier, *Towards a New Architecture* [Vers une Architecture, 1923], (NY: Holt, Rinehart, and Winston, 1960), pp. 7-62. ("Argument", "The Engineer's Aesthetic and Architecture", "Three Reminders to Architects")

Week 5. Skyscraper City + 'Americanism'

4/6 Oct

Water Curt Behrendt, "Skyscrapers in Germany," *Journal of the American Institute of Architects* 11, no. 9 (1923): 365-372. (includes responses by G.C Nimmons, "Skyscrapers in America," and W.S. Parker, "Skyscrapers Anywhere")

Fritz Neumeyer, "Metropolis or the Dissolution of the City? The Struggle of the 1920s Against the Big City," in Jean Clair (ed.), *The 1920s: Age of the Metropolis*, (Montreal: Montreal Museum of Fine Arts, 1991): 300-319.

Manfredo Tafuri, "'Radical' Architecture and the City," *Architecture and Utopia: Design and Capitalist Development* [Progetto e Utopia, 1973] trans. Barbara Luigia La Penta, (Cambridge: MIT Press, 1976) pp. 104-124.

Week 6. Socialism + Fordism: Red Vienna + Neue Sachlichkeit (New Objectivity')

11/13 Oct

Eve Blau, *The Architecture of Red Vienna 1919-1934* (Cambridge: MIT Press, 1999), pp. 201-215, 320-339.

Walter Gropius, "Where artists and technicians meet" [1925/6], "Bauhaus Dessau: Principles of Bauhaus Production" [1926] in Benton, *Form and Function*, pp.147-149.

Eve Blau, "Isotype and Architecture: The Modern Projects of Otto Neurath and Josef Frank," *Austrian Studies*, vol 14 (2006): 227-259.

Week 7. Modernism from Weissenhof Siedlung to International Style

18 Oct

Ernst May, "Flats for subsistence living," [1929] in Tim and Charlotte Benton, *Form and Function* (London: Granada, 1975), pp. 202-204.

Josef Frank, "Flippancy as the Comfort of the Soul and Flippancy as a Problem," (trans. Wilfried Wang) *9H* no. 3 (1982), pp. 5-6.

Henry-Russell Hitchcock and Philip Johnson, "Introduction: The Idea of Style," and Appendix: "The International Style Twenty Years After," in *The International Style*, 1932 (NY: The Norton Library, 1966), pp. 17-21, 237-255.

DISCOURSE AND PRACTICES OF POSTWAR ARCHITECTURE
GSD 4206M2: BUILDINGS, TEXTS, & CONTEXTS Fall 2010

Instructor: Timothy Hyde
MW 10:00-11:30
Piper Auditorium

Teaching Fellows: Delia Wendel, Jawn Lim

COURSE DESCRIPTION

The atomic bomb, spring break, existentialism, jet travel, the polio vaccine, the United Nations, the transistor radio, abstract expressionism, India and Pakistan, LSD, ISO containers, Pop Art, nylon, structuralism—these are some of the inventions that exemplify the extremity of political, economic, aesthetic, and cultural change that took place during the three decades following World War Two. Postwar architectural discourse showed a keen awareness of the importance of these changes, and postwar architectural practices consisted of concomitant attempts to accommodate them. This module explores these repercussions in architecture by following the broad transformations, extensions, and reorientations of architectural modernism. By 1945, the discursive center of gravity had shifted from continental Europe to the United States and Great Britain, and modernism was soon diffused through Latin America and parts of Asia as well. Though new works by the prewar masters—Le Corbusier, Mies van der Rohe, Walter Gropius, and Frank Lloyd Wright—continued to have a profound influence, diverse and different practices soon emerged in mainstream and peripheral architectural culture as parts of a broad reaction to the consolidated inheritance of prewar modernism. The lectures of this module will consider this reaction as a consequence of the postwar situation, in which the erosion of modernism's authority and legitimacy—the erosion of the 'grounds' of architecture—provoked varied attempts to reestablish the legitimacy of architectural practice. Several prominent themes of postwar architectural discourse will be presented, bound together by the conceit that postwar architecture was fundamentally a serial (and perhaps hopeless) attempt to recuperate a lost ground of architectural authenticity.

REQUIREMENTS

- 1) Attendance & Readings: Attendance at all lectures and all weekly section meetings with the Teaching Fellows is mandatory. Assigned readings should be completed before lectures, and reading notes prepared in advance of section meetings to facilitate your participation in discussion. The course reader will be available from Gnomon Copy, and the first week's readings are available on the course website. (This course assumes prior knowledge of the major architectural movements of the postwar period; for a general review see William Curtis, *Modern Architecture Since 1900*, chapters 26-30.)
- 2) Site Visit: Prior to the end of the module, each student must visit one significant postwar building in the Boston area. A list of buildings will be provided.
- 3) Manifesto: Each student will be required to write a research paper 500-2000 words in length, on one selected postwar architectural project. The paper, to be conceptualized and written in the form of a manifesto, will be based on historical research and theoretical reflection upon the architectural concepts that the project sustains. A list of projects from which to select will be provided along with more detailed explanation of the manifesto format.

SCHEDULE OF READINGS AND LECTURE TOPICS

Introduction: Discourses and Practices of Postwar Architecture (Oct 20)

Week 1: Allegories of the Postwar: Modernism as Nationalism (Oct 25 & 27)

Giedion, Sigfried, Fernand Léger, and Jose Luis Sert. "Nine Points on Monumentality." [1943] In *Architecture Culture 1943-1968: A Documentary Anthology*, edited by Joan Ockman and Edward Eigen, 27-30. New York: Rizzoli, 1993.

Belluschi, Pietro. "The Meaning of Regionalism in Architecture." *Architectural Record* (December, 1955): 131-39.

Harris, Harwell Hamilton. "Regionalism and Nationalism." [1954] *Student Publication of the School of Design North Carolina State* 14, no. 5 (1965): 25-33.

Fanon, Frantz. "On National Culture" [1959] in *The Wretched of the Earth*. New York: Grove Weidenfeld, 1991.

Week 2: Philip Johnson's Glass House: Modernism as History (Nov 1 & 3)

Johnson, Philip. "House at New Canaan, Connecticut." *Architectural Review* 108, no. 645 (1950): 152-59.

Johnson, Philip. "The Seven Crutches of Modern Architecture," [1954] in *Philip Johnson: Writings*, 136-40. New York: Oxford University Press, 1979.

Rowe, Colin. "Neo-'Classicism' and Modern Architecture I," [1956] in *The Mathematics of the Ideal Villa*, 119-38. Cambridge: MIT Press, 1976.

Kubler, George. "The Classing of Things" in *The Shape of Time: Remarks on the History of Things*. New Haven: Yale University Press, 1962.

Week 3: Geniuses and Bureaucrats: Modernism as Expertise (Nov 8 & 10)

Hitchcock, Henry-Russell. "The Architecture of Bureaucracy and the Architecture of Genius." *Architectural Review* 101, no. 601 (1947): 3-6.

Johnson, Philip. "A Symposium on How to Combine Architecture, Painting and Sculpture." *Interiors CX*, no. 10 (May, 1951): 100-05.

Fuller, Buckminster. "The Cardboard House." *Perspecta* 2 (1953): 28-35.

Adorno, Theodor W., and Max Horkheimer. "The Culture Industry: Enlightenment as Mass Deception," [1947] in *Dialectic of Enlightenment*, 120-131. New York: Continuum, 2000.

Wiener, Norbert. "Progress and Entropy" in *The Human Use of Human Beings: Cybernetics and Society*. Boston: Houghton Mifflin, 1950.

Week 4: Fact Follows Fiction: Modernism as Reality

(Nov 15 & 17)

"Doorn Manifesto." In *Architecture Culture 1943-1968: A Documentary Anthology*, edited by Joan Ockman and Edward Eigen, 181-83. New York: Rizzoli, 1993.

Banham, Reyner. "The New Brutalism." *Architectural Review* (December, 1955): 355-62.

"Grouping of Dwellings" in *Team 10 Primer*, edited by Alison Smithson, 74-95. Cambridge: MIT Press, 1968.

Williams, Raymond. "Culture is Ordinary" [1958] in *Resources of Hope: Culture, Democracy, Socialism*. London: Verso, 1989.

Week 5: The Image of Architecture: Modernism as Communication

(Nov 22 & 24)

Anderson, Stanford. "Architecture and Tradition That Isn't 'Trad, Dad'." In *The History, Theory and Criticism of Architecture*, edited by Marcus Whiffen, 71-89. Cambridge: MIT Press, 1965.

Colquhoun, Alan. "Typology and Design Method." [1967] In *Essays in Architectural Criticism: Modern Architecture and Historical Change*, 43-50. Cambridge: MIT Press, 1981.

Venturi, Robert, and Denise Scott Brown. "A Significance for A&P Parking Lots, or, Learning from Las Vegas." *Architectural Forum* 128, no. 2 (March, 1968): 36-43.

Barthes, Roland. "The Rhetoric of the Image" [1964] in Gray, Ann, and Jim McGuigan, eds. *Studying Culture: An Introductory Reader*. London: E. Arnold, 1993.

Week 6: "Architecture is a Hoax": Modernism as Environment

(Nov 29 & Dec 1)

Banham, Reyner. "Epilogue: The Meaning of Megastructure." In *Megastructure: Urban Futures of the Recent Past*, 196-216. London: Thames and Hudson, 1976.

Soleri, Paolo. "Arcology" and "The Characteristics of Arcology" in *Arcology: The City in the Image of Man*. Cambridge: MIT Press, 1969.

Hollein, Hans. "Everything Is Architecture." [1968] In *Architecture Culture 1943-1968: A Documentary Anthology*, edited by Joan Ockman and Edward Eigen, 459-62. New York: Rizzoli, 1993.

McLuhan, Marshall. "The Invisible Environment: The Future of an Erosion." *Perspecta* 11 (1967): 163-167.

DISCOURSE AND PRACTICES OF POSTWAR ARCHITECTURE
GSD 4206M2: BUILDINGS, TEXTS & CONTEXTS

Fall 2010

SITE VISIT: Each student is required to visit one of the buildings listed below in category B or C. (You should visit all of the buildings in Category A at some point, but they do not count to fulfill this assignment.) You may visit at any time that is convenient to you, but you must email one photo of yourself standing in front of the building to your TF prior to the end of the module (December 1st). No grade will be assigned for the course unless the photo has been received.

Category A

- *Peabody Terrace Housing: José Luis Sert
- *Holyoke Center: José Luis Sert
- *Science Center: José Luis Sert
- *Design Research: Ben Thompson [now the Crate&Barrel store]
- 44 Brattle: José Luis Sert
- TAC Office: The Architects' Collaborative (TAC) [behind 44 Brattle]
- *Carpenter Center: Le Corbusier
- *Harvard Graduate Housing: Walter Gropius/The Architects' Collaborative (TAC)
- *MIT Chapel and Kresge Auditorium: Eero Saarinen
- Baker House Dormitory: Alvar Aalto

Category B

- *First Unitarian/Universalist Church: Paul Rudolph (Marlborough St. & Berkeley)
- Blue Cross/Blue Shield Building: Paul Rudolph (Federal St. & Milton Place)
- *Health Services Building: Paul Rudolph (Cambridge St. & Sudbury St.)
- *Christian Science World Headquarters: I.M. Pei (Huntington Ave & Mass. Ave)
- *Boston Public Library Addition: Philip Johnson (Boylston St & Exeter)
- *Boston City Hall: Kallman, McKinnell (Government Center)
- *Putterham Branch Library [Brookline]: Walter Gropius/(TAC) (959 West Roxbury Parkway)
- *Jewett Arts Center [Wellesley College]: Paul Rudolph
- Academic Quad [Brandeis Univ.]: Walter Gropius/(TAC) (Olin-Sang Building on campus map)
- Dormitories [Brandeis Univ.]: Walter Gropius/(TAC) (Hassenfeld/East Quad on campus map)
- Six Moon Hill [Lexington]: TAC (development of private houses by the members of TAC)

Category C

Worcester, MA:

- Goddard Library, Clark University: John Johansen
- Dormitory, Clark University: Walter Gropius/(TAC)

Williamstown, MA:

- *The Folly at Field Farm: Ulrich Franzen

Dartmouth, MA:

- *UMass Campus: Paul Rudolph

New Canaan, CT:

- *Glass House: Philip Johnson

New Haven, CT:

- *Art & Architecture Building: Paul Rudolph
- *Yale Art Gallery: Louis Kahn
- *British Art Center: Louis Kahn
- Morse & Stiles Colleges: Eero Saarinen
- *Ingalls Rink: Eero Saarinen
- Kline Biology Tower: Philip Johnson

Exeter, NH:

- *Exeter Library: Louis Kahn

*Access to all or part of the building is public, or at least relatively easy to obtain. It may be more difficult or impossible for you to get inside the buildings not marked with an asterisk.

DISCOURSE AND PRACTICES OF POSTWAR ARCHITECTURE
GSD 4206M2: BUILDINGS, TEXTS & CONTEXTS

Fall 2010.

MANIFESTO: Each student is required to write a manifesto for one of the projects on the attached list of postwar architecture. The manifesto must be based upon research into the concept, history, and realization of the project, as well as theoretical reflection upon the architectural concepts that the project sustains. In your research, you should take into account the larger context of the architect's other work and the disciplinary and discursive settings in which he/she/they practiced. This research, although it will not be explicitly presented in the text of the manifesto, will be the proof upon which the declarations of the manifesto rest. The primary purpose of this assignment is to attempt the construction of a polemical argument on architectural principles. In this case, the principles will be those you discern within a postwar architectural project. They will not necessarily accord with your own—nor should they because you must be able to articulate those principles in terms of the actual postwar historical context and intentions of the project—but the style and method of argumentation should be entirely your own creation.

Format: Architects have frequently made recourse to the genre of the manifesto, which could in a sense be regarded as the progeny of the architectural treatise. Modernist architects (and artists) were especially quick to adopt the form—think of the writings of Adolph Loos, Le Corbusier, Hannes Meyer, de Stijl, and Frank Lloyd Wright. In brief, declarative texts they enunciated the basic principles of the new architecture and denounced the limitations of the lingering influence of the nineteenth century. The essential intent of a manifesto is polemic. It advances claims, stakes out principles, and defines its real or imagined opposition. In the most powerful examples, the character of the text itself—its grammar, vocabulary, and phrasing—clarifies and reinforces the argument. (The staccato rhythm of Hannes Meyer's "On Building" is a good example.) This assignment will require you to pay careful attention to the form and style of your writing, from the choice of words, to the length of sentences, to the depth and detail of description. You may choose to write in the first person. Emphasis should be placed less upon the presentation of historical *information* and more upon the compelling argumentation for a historical *position*. The manifesto should be between 500 and 2000 words, written in a manner that reinforces the polemical thrust of the text. Illustrations are not permitted. For example manifestos and manifesto formats, you may examine texts in Joan Ockman, Ed., *Architecture Culture 1943-1968: A Documentary Anthology* or Ulrich Conrads, *Programs and Manifestoes on 20th-Century Architecture*.

Deadlines:

Monday, November 22nd – Draft and bibliography of sources [*Due in lecture. There will be no extensions to this deadline. Late drafts will not be accepted.*]

Wednesday, December 1st – TFs will return your drafts with comments

Wednesday, December 15th – Revised, final version of Manifesto [*due in TF mailbox at 5pm*]

Project List for Manifesto:

Alvar Aalto: Town Hall, Säynätsalo, Finland (1949-52)
John Andrews: Scarborough College, Toronto, Canada (1964-66)
Atelier 5: Siedlung Halen, Berne, Switzerland (1961)
Jacob Bakema & Johannes van den Broek: Church, Nagele, Holland (1960)
Lina Bo Bardi: Museu de Arte de São Paulo, SP Brazil (1962)
Edward Larrabee Barnes: Walker Art Center, Minneapolis, Minnesota (1968-71)
Edward Larrabee Barnes: Haystack Mountain School, Deer Isle (1959-60)
Pietro Belluschi: Central Lutheran Church, Portland, Oregon (1950-51)
Ricardo Bofill: Walden 7, Barcelona (1970-74)
Gottfried Böhm: Pilgrimage Church, Neviges, Germany (1965-68)
Marcel Breuer: Whitney Museum of American Art, New York (1963-66)
Felix Candela: Cosmic Ray Pavilion, Mexico City (1950-51)
Felix Candela: Iglesia de la Virgen Milagrosa, Mexico City (1954-55)
Eladio Dieste: Church of Atlántida, Uruguay (1958)
Giancarlo de Carlo: Free University, Urbino, Italy (1962-65)
Ralph Erskine: Byker Redevelopment Housing, Newcastle-on-Tyne (1969-82)
Bruce Goff: Ford House, Aurora, Illinois (1947)
Bertram Goldberg: Marina City, Chicago (1960-64)
Herb Greene: House on the Prairie, Oklahoma (1961)
Charles Gwathmey: Gwathmey House, Amagansett (1965-67)
John Johansen: Mummens Theatre, Oklahoma City (1966-70)
Kiyonori Kikutake: Miyakonojo Civic Center, Japan (1965-66)
Henry Klumb: Universidad de Puerto Rico Student's Center, Rio Piedras, PR (1948-1957)
Kisho Kurokawa: Nakagin Capsule Tower, Tokyo (1970-72)
Denis Lasdun: National Theatre, London (1967-76)
Sigurd Lewerentz: Markuskyrka, Sweden (1960)
Charles Moore, Lyndon, Turnbull, Whitaker: Sea Ranch Condominiums, Sea Ranch, CA (1963-65)
Juan O'Gorman: University Library, University City, Mexico City (1950-53)
Claude Parent & Paul Virilio: St Bernadette of Banlay Church, France (1964-66)
William Pereira: Central Library, University of California San Diego (1966-70)
Gio Ponti: Denver Art Museum, Denver (1971)
Jean Prouvé: Meudon Houses, Meudon, France (1949-50)
Ralph Rapson: Guthrie Theater, Minneapolis, Minnesota (1963)
Ernesto Rogers (BBPR): Torre Velasca, Milan (1956-58)
Paul Rudolph: Milam House, Jacksonville, Florida (1960-62)
Eero Saarinen: Morse and Stiles Colleges, Yale University (1958-62)
Moshe Safdie: Habitat, Montreal (1967)
Hans Scharoun: Berlin Philharmonie Concert Hall, Berlin (1956-63)
José Luis Sert: US Embassy, Baghdad (1955-59)
Carlo Scarpa: Castelvecchio Museum, Verona (1956-64)
Skidmore, Owings & Merrill (SOM): U.S. Air Force Academy (1954-62)
Roland Simounet: Djenan-el-Hasan Housing, Algeria (1956-58)
James Stirling: History Faculty Building, Cambridge University, UK (1964-66)
Edward Durrell Stone: 2 Columbus Circle, New York (1962)
Kenzo Tange: Kurashiki City Hall, Kurashiki, Japan (1958-60)
Kenzo Tange: Yamanashi Press and Radio Center, Kofu, Japan (1961-67)
Clorindo Testa: Bank of London and South America, Buenos Aires (1960-66)
O.M. Ungers: Unger House, Cologne (1959)
Jørn Utzon: Sydney Opera House, Sydney (1957-73)
Jørn Utzon: Kingohusene housing project, Elsinore, Denmark (1960)
Aldo Van Eyck: Orphanage, Amsterdam (1957-62)
Minoru Yamasaki: Woodrow Wilson School, Princeton NJ (1961-65)

GSD-6111-M1: Materials and Construction
An Introduction to Techniques, Composition and Strategies
<http://my.gsd.harvard.edu/course/gsd-6111m1/2010/fall>

FALL 2010 SYLLABUS

Course description

This modular course introduces students to fundamental properties and behaviors of buildings and other structures. Principles of design and construction are discussed in a comprehensive manner involving conceptual, historical, and technical analyses. Students learn to evaluate empirically various types of constructs and use analytical skills to enhance their design capabilities. Lectures will cover fundamental statics; types of loads and reactions; material properties and fabrication; issues of joinery; classifying types of construction; and related topics. Abstract and architectonic exercises involving both intuitive and analytical design approaches will take place in a workshop format, with students working both individually and in teams.

The title "Materials and Construction" describes a fundamentally reciprocal relationship between these two terms as they are used in architecture. The inherent structural and expressive qualities of specific materials such as wood, brick, steel, concrete, and glass have been tested and developed in the built environment, and there can be no meaningful discussion of construction systems without simultaneously considering the materials to be deployed. As the introductory course within a five-semester series of technology-focused courses in the M.Arch-1 program, "Materials and Construction" provides an overview of structural and constructive systems in use today as well as in earlier times. Lecture topics build from a fundamental, non-quantitative understanding of static behavior to describe generic structural approaches to a variety of formal challenges. Structural principles are progressively introduced and paired with instances of related construction or building types. Class assignments (see below) challenge students to engage lecture material in a hands-on manner, relying both on analytical and creative modes of thinking.

Class meetings

Lectures: Monday 11:30am to 1:00pm, room 109
Reviews/workshops: Friday 10:00am to 1:00pm, room 109

Instructors

Danielle Etzler detzler@gsd.harvard.edu
office: 502 Gund Hall
office hours: by appointment

Mark Mulligan mulligan@gsd.harvard.edu
office: 215b Gund Hall
office hours: Wednesdays, 10:30am to 12:00 noon

Teaching assistants

Eli Allen	eallen@gsd.harvard.edu	Wu studio
Andy Bryan	abryan@gsd.harvard.edu	Whittaker studio
John Davis	jdavis@gsd.harvard.edu	Rocker studio
Mark Lewis	mlewis@gsd.harvard.edu	Wang studio
Laura Viklund	lviklund@gsd.harvard.edu	Pla Catala studio

As noted above, one teaching assistant will be assigned to each of the five studio groups in first-year M.Arch-1 core; TAs will be available to mentor students with their assignments, in the studio or in the workshops, during regularly scheduled hours outside of class (to be announced).

Assignments

There will be three major and two minor assignments over the course of the module's seven weeks, due at regular intervals. Assignments are designed to encourage students to develop a hands-on, empirical approach to form-making through the sequential assemblage of elements. Assignments challenge and improve students' skills in fabricating components for and constructing objects and structures in real scale. By working iteratively, students should learn to anticipate certain behaviors and incorporate structural concepts in their designs.

The first exercise (due Friday 10 September) asks students to consider issues of configuration, shaping, and joinery in the production of a simple wooden frame -- also acting as an introduction to equipment and procedures in the GSD's basement workshops. The second exercise (due Friday 17 September) acts as an extension of the first: students are to investigate the physical properties of a few simple materials in the making of a performative object: a sculptural apparatus that must perform in a specific manner -- predictable according to theoretical laws as well as iterative, empirical testing -- while simultaneously expressing the diverse structural roles of its components by shaping. The third exercise (due Wednesday 22 September) asks students to observe and document different kinds of structural behaviors around the Harvard campus. The fourth assignment (due Friday 1 October) involves plan and section analysis of a variety of buildings -- real and hypothetical -- and imagining proposals for structural solutions. The fifth and final assignment (due Friday 15 October) asks students, working in teams, to design and build a full-scale, partial mock-up of a construction system of their own devising, using commonly found, lightweight materials. Further specifications for each assignment will be announced in the project brief.

Readings

Readings are assigned on a scheduled basis, to coincide with and reinforce material introduced in lectures. These readings are drawn from a variety of sources, rather than from a single textbook. While diverse in perspective and tone, the readings share an essentially non-quantitative, empirical approach to the understanding of statics, construction, and materials. All required readings can be found online and downloaded in PDF format. Students interested in suggestions for further reading on individual topics are urged to consult the course bibliography.

Grading

Final grades for the module will be based on the quality of work evident in individual and team assignments, as well as class participation; assignments are weighted according to the effort required to complete them.

1 st assignment	10%
2 nd assignment	15%
3 rd assignment	5%
4 th assignment	15%
5 th assignment	35%
Class participation:	20%

GSD-6111-M1: Materials and Construction

An Introduction to Techniques, Composition and Strategies

FALL 2010

Danielle Etzler and Mark Mulligan

CLASS SCHEDULE AND TOPICS

1. Fri 3 Sept (10:00 am): Course overview

Introduction to architectural technology and its role within the practice of design. Structure, construction, and tectonics. Empirical and intuitive approaches to reading structure. Overview of technology-related courses within the M.Arch-1 program, as well as the relationship between technology courses and core studios. Survey. Introduction to joinery considerations and first assignment: "Connections".

+++ NOTE: there is no class meeting on Monday 6 September (Labor Day) +++

2. Fri 10 Sept (10:00 am): PROJECT REVIEW: "Connections" + Equilibrium (lecture)

Survey discussion: answers and statistics. Equilibrium: gravity and balance in simple objects and complex assemblages; centers of gravity. Forces modeled as vectors: action-and-reaction. Gravity, uplift, and lateral loads; dead, live, and dynamic loads; point and distributed loads. Tension, compression, overturning, shear, bending, and torsion. Material considerations: tension-only and compression-only structures. Structure in sculpture. Second assignment: "Tectonic Equilibrium".

3. Mon 13 Sept (11:30 am): Funicular structures (lecture)

Relationships between loads, stresses and forms. Funicular structures in tension and compression. Tension cables; catenary and parabolic curves; suspension bridges. Compression structures: walls, arches, vaults, and domes. Outward thrust + stabilization. Funicular modeling techniques. Masonry construction in brick, stone, rammed earth, and adobe.

4. Fri 17 Sept (10:00 am): PROJECT REVIEW: "Tectonic Equilibrium"

5. Mon 20 Sept (11:30 am): Horizontal Spans (lecture)

Linear spanning members: trusses and beams. Truss: definition and method of analysis (via joints and vectors). Truss configurations. Bending and shear in beams. Structural hierarchy in spanning members: horizontal load paths. Spanning between masonry walls. Third assignment: "Go-Find-It" (due Wed 22 September).

6. Fri 24 Sept (10:00 am): REVIEW and WORKSHOP

"Go-Find-It" image review. In-class sketch assignment on framing and load-paths – bring pencils and other drafting tools. Fourth assignment: "Framing Speculations" (due Wed 29 September).

7. Mon 27 Sept (11:30 am): Columns and Frames (lecture)

Short and long columns and their modes of failure. The influence of joinery on column shaping and behavior. Lateral stability: braces, cables, shear walls. Framing orientation and load path. Plan-section analyses (demonstration within different building types).

8. Fri 1 Oct (10:00 am): PROJECT REVIEW: "Framing Speculations"

This will be a review of selected projects that have been submitted online two days previous (Wednesday 29 September). Announcement of fifth (final) assignment.

9. Mon 4 Oct (11:30 am): Structure and Skin (lecture)

Approaches to building enclosure: relationship of structure and "skin". Detailing strategies, with contemporary examples.

10. Fri 8 Oct (10:00 am): WORKSHOP

In-class presentation and discussion of final project sketches and models.

11. Mon 11 Oct (11:30 am): Material considerations (lecture)

Timber construction methods: heavy timber-frame, balloon frame, platform frame, and others construction typologies. Two-way spanning structures: reinforced concrete slabs (flat, ribbed, waffle, and other). The role of steel in reinforced concrete construction: rebar, pre- and post-tensioning. Long-span, surface-active structures: concrete shells and domes, tensile fabric, and tensegrity structures and associated building types.

12. Fri 15 Oct (10:00 am): FINAL PROJECT REVIEW

13. Mon 18 Oct (11:30 am): Conclusions

Fall 2010

6112M2: Energy, Technology and Building

Department of Architecture

Lecture, 2 credits

109 Gund Hall

INSTRUCTOR

Nico Kienzl, nico.kienzl@atelierten.com, +1 (646) 436-4830

COURSE DESCRIPTION

This lecture course introduces students to energy and environmental issues, particularly those that must be faced by the discipline of architecture. An overview of the basic principles of energy generation and energy use will be provided, and the fundamental climatic precursors and patterns will be discussed. Building design issues in relation to basic energy needs and interior environmental requirements will be briefly outlined, and students will be exposed to the underlying complexity of developing solutions that address a wide range of local and global concerns. In addition, the technological response to interior environmental control will be contextualized

SCHEDULE

#1: Thursday, October 28th, 2:30-5:30 PM

Course Introduction, the History of "Green" Design, Energy Use in Buildings, Performance Targets, Codes and Standards, Overview of Green Building Rating Systems.

#2: Friday, October 29th, 10-1 PM

Energy Generation, Site vs. Source Energy, Conventional Sources, Renewable Systems, Definitions of NetZero, Understanding Site Infrastructure.

Case Study: Lewis Center at Oberlin College

Assignment 1 start: Energy Infrastructure for Studio Project

#3: Friday, November 5th, 10-1 PM

Site Analysis 1: Measuring climate and occupant comfort

Case Studies: Single family residential buildings, high-rise residential buildings.

Assignment 1 due.

Assignment 2: Environmental site analysis for your studio project.

#4: Friday, November 12th, 10-1 PM

Site Analysis 2: Psychrometric Chart (Ecotect Weather tool, Climate Analyzer) and bioclimatic design.

Case Studies: Cultural and academic buildings.

#5: Friday, November 19th, 10-1 PM

General "green" building design guidelines and simple design tools.

Case Studies: Laboratory buildings and commercial high rise buildings.

Assignment 2 due.

Assignment 3 start: Environmental section/diagram/narrative for your studio project.

#6: Friday, December 3rd, 10-1 PM

Case Studies and Applications
Assignment 3 due:

Course Requirements

Attendance: Students are required to attend all lectures and participate actively in the course discussion. More than 2 unexcused absences will result in a failing grade.

Assignments: Complete and submit all assignments on the respective due dates. Assignments will be carried out individually. All assignments are to be submitted as a print out on 8 ½ x 11 paper and as well as a pdf file clearly labeled with the students name and the assignment number.

Exams: There will be no final exam.

Readings

The course has no required text book but the following books are recommended for additional reading:

Norbert Lechner. Heating Cooling Lighting. Design Methods for Architects.
Stein and Reynolds, Mechanical and Electrical Equipment for Buildings.
Daniels, The Technology of Ecological Building
Copies of the lectures will be made available to students.

Assignments

Assignment 1: Research for your studio site what energy infrastructure is available and document it in a site drawing or a sketch; research where that energy comes from and what it's conversion factor from unit energy delivered to the site to associated CO2 emissions are. Evaluate qualitatively what onsite renewable energy sources are available for your project. Document all of this in a short narrative or diagram.

Assignment 2: Using available tools and weather data, analyses the climate on your studio site with respect to temperatures, humidity, wind, precipitation, solar access, views, landscape connections, etc. Document key findings in graphic form. Summarize in a short executive narrative the local climate of your site and identify how key climatic parameters will influence energy considerations of the design project.

Assignment 3: Summarize in an environmental section or site diagram how your building design responds to climatic site factors. Provide a short narrative of the key design considerations in your related to energy and environmental performance.

GSD 6201: Analysis and Design of Building Structures, Fall 2010

Syllabus *Spiro Pollalis*

The course rigorously navigates future architects to the discipline of structural engineering, as an integral component of conceiving and designing buildings. Decisions on geometry and materials, subject to static and transient forces, seen from the perspective of strength, stiffness and durability, accompany architectural considerations. The course focuses on the structural systems of a series of buildings and bridges as case studies, with an emphasis on how structural decisions have influenced architecture, while presenting in parallel the fundamental principles. The approach of the course and the short learning time requires a simultaneous approach to the complete spectrum of structural systems and materials. Students learn to describe in detail the behavior of buildings, to use structural analysis software for the preliminary design of critical architectural components of buildings, and to search the Internet for preparing meaningful discussions with the engineers.

Topics (not in order of presentation)

1. Statics: Forces and Moments
2. Equilibrium and Reactions
3. Loads and loads modeling (types of loads, flow of forces)
4. 2-D Trusses (Truss stability, method of joints, method of sections)
5. Internal Forces and Moments (Axial, Shear and Bending Moment Diagrams)
6. Mechanical Properties of Materials (Stress, Strain, Elasticity, Plasticity, Temperature Effects, also Embodied Energy and Carbon)
7. Elastic Design of Steel and Timber Beams for Bending and Deflections (moment of inertia, allowable strength design)
8. Shearing, Torsion and Bearing Stresses in Beams
9. Column Design: Long and Short Columns in Steel and Timber
10. System Design
11. Lateral Stability: Design for Lateral Forces

Course objectives

By the successful completion of 6201 students will:

1. describe how the structural system of a building works
2. recognize if the façade is structural
3. identify the loads on a building and approximate their magnitudes
4. identify the support conditions and the types, magnitudes and directions of the reactions
5. identify the materials and describe their engineering properties (strength, stiffness, ductility)
6. understand internal forces, stresses, deflections of structural members

7. focus on connections and identify their properties and behaviors
8. model and analyze simple systems by hand
9. model and analyze simple systems in an engineering analysis software (i.e. Multiframe) and interpret the results
10. develop the vocabulary for communicating with the structural engineer and provide precedents of designs of interest
11. focus on the behavior of trusses, arches, cables, beams, columns
12. approximate the sizes of structural elements in steel, wood, concrete (using software or simple approximations and calculations)

Prerequisites

GSD first semester building technology courses

Class Format

The class is structured in a weekly cycle, beginning on Thursday with the lecture and ending on Wednesday's review. The homework assignment is due the following Tuesday at noon and Case Study Assignments will always be due Wednesday at midnight (before the Thursday session). All homework and Case Study will be posted online by Saturday 12 noon and will be submitted in the dropbox of iSites by the deadlines mentioned. No submissions of homework will be accepted after the deadline – late submissions will receive a 0 grade. Excused non-submissions will not be graded and the final homework grade will be based on the other homework submittals only. On Wednesday, the TAs will hold review sessions, where they will cover the basics, available in the book, will answer questions, and will present examples.

Attendance is required on Wednesdays (5-6pm), Thursdays (9-10am), and on Fridays (9-noon) and studying in advance is essential for having quality class time.

Teaching Resources

Prof. Spiro Pollalis (office: 202 Gund Hall Email: spollalis@gsd.harvard.edu). The instructor will be available for questions immediately after each class. He will also hold office hours on Fridays 12:30-1:30 by prior appointment during which anyone is encouraged to come and discuss the course or other matters of interest. Additional times to meet can be arranged via email.

Teaching Assistants: Zenovia Toloudi, Mar Ferrer, Victoria Wolcott, and Andrew Domnitz will be the TAs for the course. The TAs will hold regular office hours to help you with the content of the course, the homework, and the exam. The office hours will be posted on the course web site.

Textbook: The required textbook is: Schodek, D., Bechthold, M., *Structures*, Prentice Hall, New York, 2008, 6th edition. The book is available at the Harvard

Coop, or at online booksellers. Several additional texts on the covered subjects are available in the Loeb Library and collateral reading is highly recommended. The reserve readings are posted on the course web site.

Web Site: The web site is

<http://isites.harvard.edu/icb/icb.do?keyword=k70929>

Homework assignments, case studies and quiz solutions will be posted here, as well as an anonymous overview of current student grades in the class. Additional problem sets, examples and lectures are available at the Interactive Structures Modules on the CD that is part of the book. We will minimize the use of paper as much as possible.

Study Groups: Groups should form as needed, either voluntarily or by the TAs, depending on the task. Each group will prepare the assigned task aiming for class discussion, for completion of the homework, or for studying and discussing the assigned readings. Please note that we will not monitor groups during study. The maximum number of students in each group is 4.

Case studies: The course will be based on case studies. The weekly student work will be ready to be presented in the Thursday class meeting, although presentations/discussions may be in the Friday session. All work will be submitted by 12 midnight Wednesdays in a digital form, even if it is photos of handwritten sketches or text. Each group should make sure that all material used from third parties is properly credited and referenced. Students should be ready to make opening statements and debate the issues addressed in the questions accompanying each case. All class will participate and students may be randomly called with specific questions relating to the case studies.

Homework: Problem sets will usually be assigned on Saturdays and will be due for uploading by Tuesday.

Use of Computers: Use of computers and access to the Internet is an essential part of the course. Students should bring their laptops and be connected during class. You will be expected to perform case study analyses using computers, and to present your case studies etc. to the class using PowerPoint/PDF. **Multiframe** will be the main computer program that we will use for the class. There will be Multiframe tutorials on Wednesdays in class and, if needed, in Rm 516 Gund Hall. Please note that although you are encouraged to use computers, evidence that you develop intuition and know how to address the problems is absolutely necessary in order to pass the course. You will have access to computers for quizzes and the final exam.

Exams, Quizzes and Grades

There will be unscheduled quizzes during the course of the term, and a final examination at the end of the term – all open books and open laptops. All students taking the class have indicated that can bring a laptop with wifi

capability in class. The final examination *must be taken on the date established by the school!* Please do not even ask if you can take the exam at some other time, before or after. This is strictly against GSD's policy. Following GSD policy, incomplete grades will be given only on the basis of medical reasons.

Grading: The final grade is based upon the instructor's estimate of the student's comprehension of the material, at the end of the course. Class participation is heavily counting.

GSD 6204: Building Technology

<http://my.gsd.harvard.edu/course/gsd-6204/2010/fall>

Fall 2010 syllabus

Prerequisites

GSD 6202, 6203 and 6205; or equivalent

Course description

As the final component in the required sequence of technology courses in the MArch I program, this professionally oriented course develops an integral understanding of the design and construction of buildings and their related technologies – structural, constructional, and environmental. Building on fundamentals covered in *GSD 6203M3 and M4: Science and Technology* (formerly *GSD 6203: Building Construction*), the course looks in detail at examples of innovative construction techniques in wood, steel, and concrete structures. Construction details are investigated as a means by which aesthetic expression and the logic of problem-solving achieve synthesis in design. The course also looks at the context in which technological innovation takes place by exploring the relationship of the various design and construction participants. Class meetings alternate between lectures designed to build understanding of construction techniques and a series of case studies focusing on innovative detail design.

Case studies build on the issues covered in earlier lectures and are designed to provide students with a chance to test their conceptual understanding of broader construction issues while dealing with the specific conditions of each building under scrutiny. Each case study presents assignments for students to prepare for discussion in the following class meeting.

Class meetings: Mondays and Wednesdays from 8:30 to 10:00 a.m. in Room 111, Gund Hall.

Instructor:

Mark Mulligan mulligan@gsd.harvard.edu
office: 215b Gund Hall
office hours: Wednesdays 10:30 a.m. – 12:00 noon

The instructor will be available for questions immediately after each class, outside the classroom. Students are also encouraged to come and discuss the course or other matters of interest during regular office hours, as listed above.

Teaching assistants:

Timothee Boitouzet	tboitouz@gsd.harvard.edu	M.Arch-2
ChengHe Guan	cguan@gsd.harvard.edu	MDesS
Nathan King	jking1@gsd.harvard.edu	DDesS

TAs will attend all class meetings and will hold regular office hours as posted on the web.

Assignments

Students are asked to form case study discussion groups of 3-4 persons each. Case study assignments will be prepared and presented in these groups. In all but exceptional cases, the same project grade will be assigned to all members of each team. Discussion topics to be researched and presented in class are found at the conclusion of each case study reading. Individual study groups will be assigned to prepare one topic each for presentation in the following class meeting. Presentations will require analysis drawings, models, and other visual aids to be prepared. Further specifications for presentation format will be announced in class as appropriate. Groups will be asked to present in class on a rotating basis throughout the semester so that each group has sufficient opportunity to make presentations and to comment on the findings of others. The instructor and the TAs may provide additional comments on assignments by email. Each group, whether presenting or not, is required to submit assignments electronically by 7 p.m. the day previous to the scheduled discussion. Further submission guidelines will be provided in class and on the course website.

Guest lectures

Robert Silman (principal of Robert Silman, Structural Engineers in New York) will speak with us about two recent renovations of Frank Lloyd Wright masterpieces in concrete (Guggenheim Museum, New York, and Fallingwater) on Monday, 11 October. On Monday, 25 October, Justin Lee (project architect at Renzo Piano Building Workshop, Genoa) will lecture on RPBW's renovation and addition to Harvard's Fogg Museum, a project under construction two blocks from Gund Hall. Tours of the Fogg construction site will be scheduled outside of class hours during the latter half of the semester.

Workshops

Three class meetings over the course of the semester are scheduled as detailing workshops. Students will be given a sketch assignment to be completed during the class period; a portion of the following class meeting will be devoted to a discussion of student solutions. Each workshop is intended to allow students to respond as designers, subjectively and synthetically, to the issues raised in lectures and case study discussions. The workshop is not intended as a quiz and does not require separate study to prepare; participation is mandatory, however, and missing more than one workshop will automatically result in a reduced semester grade.

Term project

A term project is due at the completion of the course. The intention is to provide a vehicle for studying in greater depth a topic covered in the course – it may be a thematic study of a specific building or an investigation of a building technique or use of a new material, for example. The paper should be based on a clear thesis or argument, developed synthetically from a detailed analysis of design objectives and construction technique. The subject should be of your own choosing and should be carried out as follows:

1. Students are encouraged to work together with case study groups formed during the semester; however, pending approval from the instructor, new collaborative teams or individual projects may also be proposed. In most cases, where teamwork is equally shared, the same project grade will be assigned to all members of a team.
2. A written proposal (approximately 200 words) must be submitted electronically by 5pm on Wednesday 17 November 2010. The proposal shall include both the subject of study and a critical framework for your argument.
3. Upon the proposal's approval, you will prepare a final paper, due by 10am, Monday 20 December 2010.
4. The paper should be at least 1500 words in length per group member (e.g., if four students are working on one paper, the text should be at least 6000 words in length) and include original analytical drawings and diagrams created by the students, as well as supplementary photographs, plans, and other images as necessary to illustrate the subject.
5. Students are expected to exercise care in citing sources of information, particularly direct quotations. By submitting an individual or group paper, each student certifies that all phrases not appearing in quotation marks are original; discovery of plagiarized passages in final papers will result in disciplinary action.
6. Students are requested to submit both an electronic version of the paper (PDF format is preferred) and a printed copy for the instructor to return with written comments.
7. Additional guidelines will be discussed later in class.

Grading

The final grade is based upon the instructors' estimate of the student's comprehension of the material at the end of the course. Group assignments and class participation in case study discussion are weighed 75% and the final project, 25%. Incomplete grades may be given only on the basis of medical reasons and not because of conflicts with other academic coursework or travel plans – please plan accordingly.

Required readings

Students are assigned required readings at three points during the course of the semester as noted on the schedule. These readings complement rather than duplicating the lectures and provide a basis for comparing different design approaches in the case studies. Readings are available online in PDF.

Edward Allen's *Fundamentals of Building Construction* (Wiley & Sons: New York, 2004 = 4th edition) may be used throughout the term as a valuable reference. Edward Ford's *The Details of Modern Architecture*, Vols. I and II, (MIT Press, Cambridge, 1990 and 1996) is a very useful reference as well, not only for the examples of modern architecture it highlights, but also for its exemplary axonometric drawing technique of presentation. Although these texts are available at the Loeb Library, copies are limited; therefore it is highly recommended that students purchase their own copies if possible.

GSD 6204: Building Technology

Fall 2010 Schedule

Introduction: technology and the design process. Technological innovation and collaborative design. Construction detailing: approaches, constraints, paradigms. Design development. Structural strategies, structural expression. Case study 1: 'Alpha Technology', the Linn Factory by Richard Rogers.

1. Wednesday 8 September Course overview + administration
Lecture: "Innovation: evolution or revolution?"
Case study introduction: Alpha Technology
Reading 1 due next meeting
2. Monday 13 September Discussion of readings
Lecture: "Design development: principles and approaches"
Case Study 1 assignment due next meeting
3. Wednesday 15 September Case study 1 presentation: Alpha Technology

Wood construction. Traditional European, Asian, and American approaches to wood construction. Paradigms of material efficiency. Structure and skin -- rethinking the building envelope. Case study 2: Forestry Stations by Burkhalter + Sumi. Building foundations. Detail sketch workshop.

4. Monday 20 September Case study 1 continuation
Lecture (short): "Wood construction in history"
Reading 2 due next meeting
5. Wednesday 22 September Lecture: "New wooden construction: approaches to layering"
Case study introduction: Burkhalter + Sumi's Forestry Stations
Case study 2 assignment due next meeting
6. Monday 27 September Case study 2 presentation: Forestry Stations
7. Wednesday 29 September Lecture: "Foundations: engineering and architectural aspects"
8. Monday 4 October Detail workshop (1): in-class sketch assignment
9. Wednesday 6 October Sketch workshop discussion

Facade and cladding systems. The building envelope in masonry, concrete and steel construction. Properties of stone and problems of heterogeneous construction. Construction modules. Case studies 3 and 4: The East Wing of the National Gallery by I. M. Pei, and the Getty Center by Richard Meier.

10. Monday 11 October Guest lecture: Robert Silman,
Robert Silman Associates, Structural Engineers
(topic: Guggenheim restoration and other recent works)
11. Wednesday 13 October Lecture: "Stone construction/ stone cladding"
Case study introductions: East Wing/ Getty Center
Case study 3 assignment due next meeting
12. Monday 18 October Case study 3 presentation: East Wing, National Gallery of Art
Case study 4 assignment due next meeting

- 13. Wednesday 20 October Case study 4 presentation: Getty Center
- 14. Monday 25 October Guest lecture: Justin Lee, Renzo Piano Building Workshop
(topic: Fogg Art Museum renovation/addition)

Interior construction. Tactile architecture and personalized space: an environmental approach to materials. Stability concerns at a detail scale. Detail sketch workshop.

- 15. Wednesday 27 October Lecture: "Interior finishes and construction"
- 16. Monday 1 November Lecture: "Special problems of interiors"
- 17. Wednesday 3 November Detail workshop (2): in-class sketch assignment
- 18. Monday 8 November Sketch workshop discussion
Reading 3 due next meeting

Glass in construction. Transparency and translucency in buildings: special properties of glass and constraints in detailing. Innovative structural approaches to glazed surfaces. Production and processing of glass materials. Case study 5: The Toledo Museum of Art's Glass Pavilion by SANAA.

- 19. Wednesday 10 November Lecture: "Innovation in glass technology"
Case study 5 assignment due next meeting
- 20. Monday 15 November Case study 5 presentation: Glass Pavilion, Toledo Museum of Art
Final project proposals due next meeting

Roof construction. Flat and sloped roofs – detailing strategies. Weather protection, water-shedding, and architectural expression. Glass membranes and innovative applications. Case study 6: Kimmel Performing Arts Center of Philadelphia by Rafael Viñoly. Detail sketch workshop.

- 21. Wednesday 17 November Lecture: "Roof construction and expression"
Final project proposals to be submitted electronically by 5:00 pm
Case study 6 assignment due next meeting
- 22. Monday 22 November Case study 6 presentation: Kimmel Center
- 23. Wednesday 24 November Lecture: TBA

***** THANKSGIVING HOLIDAY WEEKEND *****

- 24. Monday 29 November Detail workshop (3): in-class sketch assignment
- 25. Wednesday 1 December Sketch workshop discussion
Conclusions

Final projects due Monday 20 December 2010 (10 a.m.)

GSD 6204: Building Technology

Fall 2010

Reading assignments

Reading 1 Mostafavi, Mohsen and Leatherbarrow, David. *On Weathering*. MIT Press, Cambridge, 1993.

Riley, Terence. "Light Construction" (essay) from *Light Construction*. The Museum of Modern Art, New York, 1995, pp. 9-32.

Reading 2 Ford, Edward R. *The Details of Modern Architecture*. MIT Press, Cambridge, 1990.
Chapter 10: Residential Construction in America;
Chapter 11: Frank Lloyd Wright: The Usonian Period, pp. 289-349.

Reading 3 Wiggington, Michael. *Glass in Architecture*. Phaidon Press Ltd., London, 1996.
Chapter 2: Glass Technology, pp. 60-81

Ulrich Knaack, Tillman Klein, Marcel Bilow, and Thomas Auer. *Façades: Principles of Construction*. Birkhäuser, Basel, 2007.
Chapter 3: Principles of Construction, pp. 36-51.
Chapter 4: Detailing and Tolerances, pp. 52-69.

General reading assignments for GSD 6204: Building Technology are posted online in PDF. To view them, please go to the course iCommons website's "readings + assignments" page. Readings in PDF format may be accessed directly from this page. Case study texts are found under "case study texts + materials" on the website, along with links to related construction drawings and photos.

Spring 2011 Syllabi

Discourses and Materialities in Architecture

Ingeborg Rocker (coordinator)
Angus Eade
Danielle Etzler
Elizabeth Whittaker
Cameron Wu

Project 1

Back into the Future: Postscript to Modern Architecture

Assignment I, Assignment II

(Time length 6.5 weeks, January 24th – March 9th)

The project is a study of space, time and architecture. It is a project, which explores architecture in the tension of discourses, structural systems, material and manufacturing possibilities and finally tools and modes of representation.

This semester will focus on the debates and production of architecture in the past, present, and future. It is a highly speculative approach that will allow you to critically assess and position yourself towards the disciplinary legacy inherited from your predecessors. You will develop two projects—a “modern project” and an “after-modern project”—each with its own set of references and spatial/material logics that correspond with two different temporal contexts. Each project will highlight how discursive, material, sociopolitical, and technological considerations inform your architecture.

The first project revisits concepts of the early 20th century, a period when industrialization significantly impacted the building industry and radically new construction materials became available. This was paralleled by a new social demand on architecture, as millions of workers moved into the cities to reside in proximity to newly erected industries, requiring a new attitude towards architecture and necessitating new amenities in the public realm. Architects tried to respond to the changes they encountered in the urban and social constructions of society by suggesting a modern, often industrially produced architecture.

The temporal reference of your first project is the 1940s in the US, a peculiar phase in the development of modern society and architecture. In his 1941 book *Space, Time and Architecture: The Growth of a New Tradition*, Sigfried Giedion tried to capture this moment by suggesting that a new tradition of architecture had developed by taking advantage of the latest material and technological developments. Seven years later, in the aftermath of World War II, Giedion published *Mechanization Takes Command* (1948), which looked less emphatically at the ‘shadow sides’ of the new tradition—the effects of Taylorism and Fordism, and the effects of the mechanization of everyday life. New materials, altered production processes, and new sociopolitical challenges called for an alternative architecture and urbanism.

Having familiarized yourself with these developments, you are asked to muse over the social, spatial, and material conceptions of the 'New Tradition'. Of particular interest are the writings by or regarding Otto Wagner, Frank Lloyd Wright, Adolf Loos, Le Corbusier, Mies van der Rohe and Walter Gropius / Konrad Wachsmann. (See readings on the course isite). All of these architects have proposed alternative spatial and organizational models for architecture that are in direct response to the social, political, and technical conditions they encountered. Whether their models successfully addressed the conditions they targeted (or if they existed as mere rhetoric) is left for you to decide.

Your challenge is to reflect directly upon the reception and interpretation of Loos, van der Rohe, and Le Corbusier's design work through architectural historians and critics, like Beatriz Colomina, Robin Evans, Michael Hays, Neil Levine, Christian Norberg-Schulz, and Bruno Reichlin, and to speculate on possible architectural responses to their writing. You are asked to critically position yourself towards the works of Loos, van der Rohe, and Le Corbusier, and to develop a conceptual model, an architectural hypothesis, that uses architecture as a vehicle for debate, as a vehicle to engage in the social-political as much as in material-technological concerns.

Teaching Pedagogy:

By means of immersion in the present, past, and future of the discipline, the goal of this exercise is to arrive at an understanding of how architecture is always in tension with technical and material issues as much as sociopolitical developments. In this respect, architecture is always already political and has always had, explicitly or implicitly, a social role and responsibility.

Furthermore, the assignments train one in the development of conceptual, spatial and material architectural strategies and their representations in plans, sections, and elevations. Representation is hereby suggested as a strategic tool that constitutes, along with other choices, your argument.

Project 1 - Assignment 1:

Postscript Principles of a 'New Tradition'

(Time length 3 weeks, January 24 | 2011 – February | 14 | 2011)

1. Principles of "The new Tradition" - Concept

Choose one of the following Concepts (see Text and Building references).

Adolf Loos

1) Convoluted Distinctions: Interior and Exterior –
(Raum Plan [Space Plan], Ornament discussion)

Building Reference:

Haus Müller, Prague, Czechoslovakia (1930)

Text Reference: Colomina

2) Fabricated Interiority: Architecture and Pleasure
(Cladding)

Building Reference:

Haus Moller, Vienna, Austria (1928)

Josephine Baker House, unbuilt, Paris, France (1928)

Text Reference: Colomina

3) Sensuous spatiality (Raumplan, Cladding)

Building Reference:

Josephine Baker House, unbuilt, Paris, France (1928)

Haus Moller, Vienna, Austria (1928)

Text Reference: Colomina

Le Corbusier

1) Poetic Enjambment – (Free Plan, 5 Points)

Building Reference:

Villa Stein, Villa Stein, Garches, France (1927)

Text Reference: Reichlin

2) Machine for Viewing – (Free Plan, 5 Points)

Building reference:

Villa Savoye, Poissy, France (1928/29)

Text Reference: Colomina

Mies van der Rohe

1) Implacable Silence (Universal Space)

Building reference:

Museum for a small city, unbuilt project, (1942)

Resor House, unbuilt, Jackson Hole, USA (1937-38)

Text Reference: Levin, Hays

2) Heterogeneity within Homogeneous Whole

Building reference:

Tugendhat House, Brno, Czechoslovakia (1930)

Barcelona Pavilion, Barcelona, Spain (1929)

Text Reference: Norberg-Schulz

3) Paradoxical symmetries

Building reference:

Barcelona Pavilion, Barcelona, Spain (1929)

Text Reference: Evans

2. Written Postscript to Modern Architecture: Principles

Produce a 1-page postscript, which positions you vis-à-vis the positions of modern architects and the theories referencing their work, answering the question: “**In what style should we build to reflect the architectural idioms of modern architecture?**” Part of your postscript should be a speculation about your work’s impact on the future of architecture.

3. Built Postscript to Modern Architecture: Spatial and Material Principles.

Assignment 1 of Project 1 should reveal exceptional ways in which architectural concepts are motivated according to conceptual, spatial, technological, or sociopolitical aspects. You are asked to develop a postscript to the modern position in architecture, while paying particular attention to a material agenda. Design a 2-story proposal that accommodates a pool on the 2nd floor, which might become in the future an athletic club. The pool (total dimensions: 82’ x 52’, sloping from 1’ to 6’ deep) will have a surrounding deck area of 7’ on three sides, and 9’ on one side, and 13’6” minimum space above water. 25% of the surrounding vertical enclosure must be able to be thermally opened to the outdoors. The space will furthermore have:

- 1 - 4 rooms measuring 200 sq ft each
- Spectator gallery (accessible without having to walk on pool deck)
- Women’s locker room:
 - 10 showers with separations
 - 4 toilets
 - 4 sinks
 - 30 lockers
 - 20 linear feet of benches
- Men’s locker room
 - 10 showers with separations
 - 2 toilets
 - 3 urinals
 - 4 sinks
 - 30 lockers
 - 20 linear feet of benches
- 1 elevator
- a staircase or ramp, which may also allow access to the rooftop, and an (optional) an outdoor patio, which may have a water basin.

If needed, you may envision vistas that can be viewed from your hypothetical site. The building is 1/2 of the size of the lot it will be placed on. Functioning as a spatial postscript to the text and building reference chosen by you, the plans, sections, facades, and structural system of your design should clearly exhibit the concept you have developed vis-à-vis modern architecture.

A significant part of this design will be to speculate on the roles, which the “new materials” of steel, glass, and (reinforced) concrete have for the definition of your design. Only certain materials (steel, glass, brick and pre-cast concrete) and fabrication techniques are available to you. Furthermore the working processes of factories were dominated by concepts of Taylorism and Fordism advocating the optimization and standardization of mass-production, including the production of building components—a development that also seemed to call for a standardization of the design process, materials, building components, and the actual construction sequence. You will focus on the assembly and generation of materials consisting of mainly mass-produced components **that materially manifest the key components of your concept model**, in fact the material choices for your design should be directly part of the concept you are presenting. For instance, you might engage the question of how Paradoxical Symmetries, as detected by Robin Evans in Mies’s work, could possibly translate into materiality? How does this materiality inform the sensuous space you are designing? How do the material’s qualities, geometries, and aggregation logics affect the space’s acoustics, visuality, and tactility?

A thoughtful and resourceful use of material is required. The size of units will be limited to mainly standard sizes (e.g. the bricks will be of width 3 ½” or 3 ¾” (90mm) x length 8” (200mm) x height 2 ¼” (57mm) or multipliers thereof), while the geometry and assembly logic are to be determined according to the chosen design agenda. In case you may use non-standardized sizes you may need to argue for those accordingly. The material model should address questions of inside and outside, the role of thresholds, and openness versus enclosure.

Pedagogy:

The aim of this exercise is to develop a work of architecture that reflects a position vis-à-vis modern architecture. The assignment focuses on the materialization of architecture, the logics and affects of materiality and assembling techniques. Aim is to familiarize you with the different materials, their properties, dimensions and uses in architecture. Furthermore, you will learn to develop a material-aggregate using specific materials and by taking their properties and dimensions into consideration.

Issue date:	January 24 2011
Interim Review:	February 7 2011
Final Review date:	February 14 2011

Requirements:

Concept and Postscript due February | 14 | 2011

- One page postscript, 11 type, 1.5 spacing + max 4 diagrams
- Explanatory diagrams
- All plans, sections, elevations
- 3-dimensional physical Concept-model of entire design (1/8”=1’-0” or TBD with your critic)
- 3-dimensional physical Material-model of design details (3”=1’-0”, 6”=1’-0”, or TBD with your critic)

- the organizational principles of materiality
- detail of material components
- logic of the material components' geometry
- assembly process (stages, at least 5)
- drawings that present the spatial, material qualities of your design

Your graphics should support / make the argument, all sections have to be derived from the plans, elevations and other illustrations of your project will be drawn (no computer renderings will be accepted). The aim is to learn how graphical notation and representation techniques are authored and used through you, and how they become strategic devices constituent for the construction of your argument.

Bibliography for assignment 1:

Readings for Loos:

Primary Reading:

Beatriz Colomina, "interior," in: *Privacy and Publicity: modern architecture as mass media / Beatriz Colomina*, (Cambridge, Mass.: MIT Press, c1994), 233-281.
Loeb Design | NA2543.M37 C65x

Secondary Reading:

Adolf Loos, "Ornament and Crime (1908)", in: *Ornament and Crime : selected essays / Adolf Loos ; selected and with an introduction by Adolf Opel ; translated by Michael Mitchell.*, (Riverside, Calif. : Ariadne Press, 1997.).
Loeb Design | NK775 .L6313 1982

Adolf Loos, "The Principle of Cladding (1898)", in: *Spoken into the void : collected essays, 1897-1900 / Adolf Loos ; introduction by Aldo Rossi ; translation by Jane O. Newman and John H. Smith*, (Cambridge, MIT Press, 1987), 66-69
Loeb Design | NK775 .L6313 1982

Max Risselada, *Raumplan versus Plan libre / redactie, Max Risselada*, (Delft: Delftse Universitaire Pers, 1987).

English:

Max Risselada, *Raumplan versus Plan libre: Adolf Loos and Le Corbusier, 1919-1930 / edited by Max Risselada; with contributions by Beatriz Colomina, ... [et al]*, (New York: Rizzoli, 1988).
Loeb Design | NA7325 .R381x

Paul. Groenendijk, *Adolf Loos: huis voor Josephine Baker = Adolf Loos : house for Josephine Baker / Paul Groenendijk, Piet Vollaard*. (Rotterdam: Uitgeverij 010, 1985), p 28-37.
Loeb Design NA1011.5.L6 G76 1985

Fares El Dahdah, "The Josephine Baker House for Loos' pleasure," in: *Assemblage* No. 26, (April 1995): 73-81.

Anna Novakov, "Chez Josephine: Revisiting the Josephine Baker House,"
<http://www.hichumanities.org/AHproceedings/Anna%20Novakov2.pdf>

Readings for Le Corbusier:

Primary Readings:

Bruno Reichlin, "Jeanneret-Le Corbusier, Painter-Architect," in: Eve Blau and Nancy Troy (eds), *Architecture and Cubism* (Cambridge: MIT Press, 1997): 195-218.

Loeb Design | NA958.5.C83 A73 1997

Beatriz Colomina, "window," in: *Privacy and Publicity: modern architecture as mass media / Beatriz Colomina*, (Cambridge, Mass.: MIT Press, c1994), p. 283-336.

Loeb Design | NA2543.M37 C65x

Secondary Readings:

Le Corbusier, *Towards a new architecture*, by Le Corbusier [pseud.] translated from the 13th French ed., with an introd., by Frederick Etchells, (New York: Payson & Clarke, 1927).

Loeb Design | NA 2500 L496ve 1927

originally published as:

Le Corbusier, *Vers une nouvelle architecture*, (1923)

- "Argument" (p. 7-14)
- "Three Reminders to Architects-Mass" (p. 25-33)
- "Eyes Which Do Not See III- Automobiles" (p. 121-138)
- "Mass-Production Houses" (p. 209-247)

Max Risselada, *Raumplan versus Plan libre / redactie, Max Risselada*, (Delft: Delftse Universitaire Pers, 1987).

English:

Max Risselada, *Raumplan versus Plan libre: Adolf Loos and Le Corbusier, 1919-1930 / edited by Max Risselada; with contributions by Beatriz Colomina, ... [et al]*, (New York: Rizzoli, 1988).

Loeb Design | NA7325 .R381x

Readings for Mies van der Rohe:

Primary Reading:

Christian Norberg-Schulz, *Casa Tugendhat = Tugendhat House, Brno / di Christian Norberg-Schulz*, (Rome : Officina, 1984).

Loeb Design | NA1088.M65 N67x

Robin Evans, "Mies van der Rohe's Paradoxical Symmetries," in: *Translations from Drawing to Building* (London: AA, 1997): 233-276.

Loeb Design | NA2700 .E82 1997

Neil Levine, "'The Significance of Facts': Mies's Collages up Close and Personal," in: *Assemblage*, No. 37 (Dec., 1998), pp. 70-101.

Michael K. Hays, "Critical Architecture: Between Culture and Form," in: *Perspecta*, Vol. 21 (1984), pp. 14-29

Secondary Reading:

Mies in America / edited by Phyllis Lambert; essays by Werner Oechslin ... [et al.]; photographs by Guido Guidi and Richard Pare. Published: [New York]: H.N. Abrams, c2001.

- “A World in Itself: Architecture and Technology” (p. 71-82)
- “Space and Structure” (p. 332-348)

Fritz Neumeyer, *The artless word: Mies van der Rohe on the building art / Fritz Neumeyer; translated by Mark Jarzombek*, (Cambridge, Mass.: MIT Press, c1991), Loeb Design NA2500 .N3913 1991

- “Space for the Unfolding of the Spirit” (p. 170-192)
- “Departure from the Will of the Epoch: Building Art as Spiritual Decision” (p. 146-161)
- “Building” (p. 242-243)
- “Architecture and Technology” (p.324)
- “Interview: Mies van der Rohe and Christian Norberg-Schulz” (p. 333)

Thomas H. Beeby, “Toward a Technological Architecture? Case Study of the Illinois Institute of Technology Commons Building,” in: *Perspecta*, Vol. 31, Reading Structures (2000), p. 10-21

Stanley Tigerman, “Mies van der Rohe: A Moral Modernist Model,” in: *Perspecta*, Vol. 22, Paradigms of Architecture (1986), p. 112-135

Sigfried Giedion, *Space, time and Architecture: The growth of a new Tradition*, (Cambridge, Harvard University Press, 1941).

Loeb Design NAC 210 G36

- “Mies van der Rohe and the Integrity of Form” (p xx-xx)

Fritz Neumeyer, *The artless word: Mies van der Rohe on the building art / Fritz Neumeyer; translated by Mark Jarzombek*, (Cambridge, Mass. : MIT Press, c1991).

Loeb Design NA2500 .N3913 1991

- Mies van der Rohe, “Space for the Unfolding of the Spirit” (p. 170-192)
- Mies van der Rohe, “Departure from the Will of the Epoch: Building Art as Spiritual Decision” (p. 146-161)
- Mies van der Rohe, “Building” (p. 242-243)
- Mies van der Rohe, “Architecture and Technology” (p. 324)
- “Interview: Mies van der Rohe and Christian Norberg-Schulz” (p. 333)

Sigfried Giedion, *Space, time and Architecture: The growth of a new Tradition*, (Cambridge, Harvard University Press, 1941), 541-564.

Loeb Design NAC 210 G36

Other General References:

Primary Reading:

Frank Lloyd Wright, "The arts and craft of the machine," in: Frank Lloyd Wright (Author), Edgar Kaufmann, Ben Raeburn (eds.), *Frank Lloyd Wright: Writings and Buildings*, (Plume: Reissue edition March 1, 1974), 58-69.
Loeb Design | NA737.W7 A48.

Juan Pablo Bonta, *An Anatomy of Architectural Interpretation*, (Barcelona: Editorial Gustavo Gili, 1975).
Loeb Design | NA1088.M65 B66.

Secondary Reading:

Otto Wagner, "Style," in: Otto Wagner, *Modern Architecture, A Guidebook for His Students to This Field of Art, Introduction and translation by Harry Francis Mallgrave*, (Santa Monica, Ca: Getty Center for the History of Art and the Humanities, 1992).
Loeb Design | NA642 .W3413 1988

- "Style" (p 73-81)
- "The Practice of Art" (p 101-123)

In 1896 Otto Wagner published with *Modern Architecture* the first manifesto to exalt and attempt to define the principles of Modernism, that is Modernism as an ideological movement radically different from the historicism of the past

Sigfried Gidion, *Bauen in Frankreich, Eisen, Eisenbeton / Sigfried Gideon*, (Leipzig: Klinkhardt &* Bierman, 1928).

Loeb Design NA 4135 G361

English:

Sigfried Giedion, *Building in France, building in iron, building in ferro-concrete / Siegfried Gideon*, (Santa Monica, Ca: Getty Center for the History of Art and the Humanities, 1995).

Loeb Design | NAI048.5.F85 G54x

Sigfried Giedion, *Space, time and Architecture: The growth of a new Tradition*, (Cambridge, Harvard University Press, 1941).

Loeb Design NAC 210 G36

Sigfried Giedion, *Mechanization takes command, a contribution to anonymous history*, (New York: Oxford University Press, 1948).

Loeb Design | NAC 210 G361

Walter Gropius, *Scope of Total Architecture*, (New York: Collier Books, 1955).

Loeb Design | NA 2500 G91a 1962

City/Code

GSD1202 : 4th Semester Core Studio : Spring 2011

Timothy Hyde (coordinator), Felipe Correa, Eric Howeler, Florian Idenburg, Carles Muro, Thomas Schroeffer

Studio Format

The studio site is a slice of land running across Willets Point in Corona, Queens. It is flanked on either side by elevated tracks for the subway and the commuter railway, and at its ends the site borders existing neighborhoods. With Citifield (formerly Shea Stadium) to one side, and Corona Park (site of former World's Fairs and the US Open) to the other, the site has the potential to be a crossing point of urban activities and densities. The studio will have two stages: the first will entail the formulation of a code that systematically organizes the site as a whole, and the second will consist of the formulation of codes that produce a set of architectural elements within that organization.

These elements and the codes that define them will be designed in relation to one another and to the urban code in which they are contained. During the first stage of the studio, therefore, a series of analytical exercises will develop ideas, techniques, and representational formats pertaining to code. There will be a strong emphasis on the exploration of parametric and conditional logics for developing data representation as well as relational structures. This analytical work will be accompanied by readings and roundtable discussions with guest lecturers to supplement the studio's research into general categories such as behavioral and environmental codes, as well as a specific consideration of form-based codes. There will also be a period of collaboration with the students and faculty in the Landscape Architecture 4th semester core studio. The research and the projective formulations will be undertaken by small groups—four groups within each studio section—so that each section will formulate multiple urban codes. During the second stage of the studio, the architectural elements to be developed will be housing, a subway/rail stations, and commercial boxes. Students will continue to work in their groups, with each individual student project to be developed in direct relation to the other projects in the group.

Part 01. Urban Code

1.1 Decode/Encode: Systems

The studio will commence with research and analysis of selected urban systems and their architectural elements. These precedents will be interpreted as and understood through code, with relational structures to be the knowledge deciphered and instrumentalized. Such an analysis will not emphasize the description of the precedents as whole entities, but will instead focus on discerning the rules for the interaction of their parts. This analytical work will be considered a decoding, with students asked to reverse engineer a code capable of producing the precedent. The decoding should include an intensive exploration of representational and production techniques, including parametric and scripted modes. The aim of this precedent research and analysis is to expose and produce a projective capacity—new possible encodings that can be instrumentally applied in other situations in order to prompt different outcomes.

The first systems to be decoded and encoded will be a set of urban 'slices'—fragments cut from existing cities in a scale or proportion commensurate to the project site. These slices are understood as condensations of multiple differentiated codings that are the substance of the contemporary city. The task will be to reverse engineer these slices not only as formal objects, but as coded situations, a process

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GSD1202 : 4th Semester Core Studio : Spring 2011

Timothy Hyde (coordinator), Felipe Correa, Eric Howeler, Florian Idenburg, Carles Muro, Thomas Schroepfer

information about behaviors, ownership, politics, and events. In short, the product of this stage will be a code that systematically organizes the site as a whole. The Urban Code will be presented with a document containing textual and graphic components as well as a three-dimensional configuration for the complete site represented in 3d and physical models. The scope of the Urban Code should cover the entire site area. It might emphasize the properties of typical configurations without resolving singular conditions such as the river edge in detail, but such conditions should be covered by the code at some level. Plan representations will be to a scale of 1"=100' and sectional representations to a scale of 1"=20' in order to maintain a clear architectural emphasis. In addition to proposing a systematic organization, the Urban Code must also evidence a clear intention, an intention toward the future of the city to be attained through architectural means.

Part 02. Architecture Code

2.1 Architecture Code

The second part of the studio (which will extend for the rest of the semester) will be the development of a code that regulates the position, form, use, scale, material, and image of a subset of urban elements. This Architecture Code will have to have a defined and coordinated relationship to the Urban Code (and not only a scalar relationship) though it will also include aspects and details that are not covered by the Urban Code. Aspects of urban life and urban fabric that are not necessarily constituted in architectural form (such as park space, lighting of public areas, the river that cuts through the site, etc.) will also be taken into account at this scale.

The three urban elements to be actualized by the Architecture Code are:

- low-density housing/medium density housing (commensurate in density to adjacent neighborhoods, although individual proposals may increase or decrease that density)
- subway station/rail station (for either LIRR or #7 line, with capacity sufficient for peak loads of stadium events and Corona Park events)
- box commercial (the equivalent of a small supermarket)
*each of the three programs will also have to incorporate parking, whether in parking structures and/or as part of street organization

The architectural elements will be designed in and through code, because the object of design is actually an urban complex in which highly differentiated elements (differentiated in terms of big vs. small, public vs. private, and commercial vs. residential) will be brought together in a deliberate relationship through the mediating mechanism of code. Students will continue to work collaboratively; each group will adopt as a shared context one of the Urban Codes and each student in the group will be responsible for the design of one of the three architectural programs. While each individual student will thus be responsible for the design of a single architectural element, the architectural projects must not be considered independent or isolated from each other. Students may pursue hybrid solutions of the program types; may design urban conditions that link together the programs; may develop guidelines of form, image or use that bind the programs together. More detailed requirements pertaining to this

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GSD1202 : 4th Semester Core Studio : Spring 2011

Timothy Hyde (coordinator), Felipe Correa, Eric Howeler, Florian Idenburg, Carles Muro, Thomas Schroepfer

second stage of the studio will be distributed later in the semester, but some advance consideration should be given to disparate nature of these architectural elements during the formulation of the Urban Code. The goal will be that each of these architectural elements is an object that through its design is able to convey ramifications outward into the codes that structured it and into its relationships with other surrounding objects.

At the final review at the conclusion of the semester, the final project presented by each of the four groups within a studio section will consist of the Urban Code; the overall organization of the site precinct; the Architecture Code, and the actualizations of the architectural programs. The students in each group will present together as a group, with the focus of the critique directed equally toward the individual architectural projects and to their negotiated relationships to one another and to the Urban Code.

Bibliographic and Source Materials

The course website contains an archive of materials, such as theoretical readings, typical codes, site information, and illustrative references. Some are available on the website as pdfs or other file formats, some are links, and some are books held on reserve in Loeb Library. Bibliographic listings as well as lists of relevant websites can also be found on the website.

- **Urban Slices:** For each of the urban fragments to be decoded there is a .kmz file and a pdf information sheet that includes a list of sources in different media (eg: film, literature, history) to prompt an initial range of research.
- **Studio readings:** Thematic readings directly related to the initial stages of the studio and to the round table discussions will be posted in specific folders.
- **Reference books:** The course reserves held in Loeb Library include several books that illustrate techniques of data representation pertaining to code.
- **Code Information:** There are several folders containing articles, examples, and references information pertaining to code. These are divided into the categories of New York City Codes, Form-Based Codes, Behavioral Codes, Environmental Codes, Parametric Codes.
- **Tutorials:** In addition to the pdf primers found in the folder on Parametric Codes, the following site should be used to access GSD tutorial videos for platforms such as Processing, Grasshopper, and Rhino Scripting: <http://www.gsd.harvard.edu/dmw>
- **Site Data:** Information has been compiled pertaining to the physical, statistical, and historical conditions of the site and its surroundings.

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GSD1202 : 4th Semester Core Studio : Spring 2011

Timothy Hyde (coordinator), Felipe Correa, Eric Howeler, Florian Idenburg, Carles Muro, Thomas Schroepfer

Studio Schedule *(subject to change)*

<u>1.0 Urban Code</u>	Tu 25 January Th 27 January	Studio Introduction
	Tu 1 February Th 3 February	Roundtable: Sanford Kwinter
	Tu 8 February	Review #1.1: Systems Roundtable: Ana Gelabert-Sanchez (Loeb Fellow)
	Th 10 February	Introduction of Collaboration with Landscape Architecture
	Tu 15 February Th 17 February	Review #1.2: Elements
	Tu 22 February Th 24 February	Roundtable: Review #1.3: Urban Code
<u>2.0 Architecture Code</u>	Tu 1 March	Introduction of Architectural Code Roundtable:
	Th 3 March	
	Tu 8 March Th 10 March	Roundtable: Damon Rich (Center for Urban Pedagogy)
<i>Spring Break</i>	<i>Tu 15 March Th 17 March</i>	
	Tu 22 March Th 24 March	Roundtable: Midreview
	Tu 29 March Th 30 March	
	Tu 5 April Th 7 April	
	Tu 12 April Th 14 April	
	Tu 19 April Th 21 April	
	Tu 26 April We 27 April	FINAL REVIEW

GSD 4203 M3 BUILDINGS, TEXTS AND CONTEXTS
Principles of Architecture: Renaissance Italy
Spring 2011

Instructor: Erika Naginski

Teaching Fellows: Sunyoung Park, Faye Antonia Hays

Tuesdays and Thursdays 10:00 – 11:30, Piper Auditorium

This six-week module considers the formulation and ensuing critique of architectural principles — what Rudolf Wittkower also called the “apparatus of forms” — as they emerged in the Italian Renaissance (1400-1600) by means of selected case studies from Brunelleschi to Michelangelo. This was the period, which bore witness to the rise of the architect as practitioner and theorist—a fact that continues to hold profound implications for subsequent generations. The enduring concept of the architect’s authority is revealed, to take but one crucial example, in the manifold ways in which the invention of perspective—its ties to individualism along with the new spatialities it generated—was inherited, manipulated, extended and transformed. Our aim here, then, will be to consider the frameworks by which historians and theorists have shaped our understanding of Renaissance architecture and its legacy. Informing the discussion in particular will be two distinct and, arguably, contradictory interpretations: Wittkower’s consideration of architectural paradigms as opposed to Manfredo Tafuri’s dialectical approach. Ultimately, these two thinkers will come to stand as representatives of a persistent and philosophically meaningful conflict between autonomy and history. Readings by Giulio Carlo Argan, Robin Evans, Alina Payne, Colin Rowe, James Ackerman and others will open up the range of concepts by which to grapple with this conflict.

We begin with the first generation of architectural pioneers in Florence — Brunelleschi and Alberti — to consider the emulation of antiquity, its impact on religious architectural contexts and the grandiose aesthetic programs of domestic architecture. From there, we turn to the formal and semantic complexities of architectural representational techniques; crucial here is the proposal that drawing is the primary manifestation of thinking in architecture. We then move to the paradigmatic status of the central-plan church, shifting geographical focus to the Rome of Popes Julius II and Leo X. We conclude with the villa and the generational development of its typology from Raphael to Palladio. Topics include: antiquity, humanism, the architectural treatise, the dome, the centrally planned church, the villa, patronage and papal urbanism as well as theoretical expositions of beauty, symmetry, ratio, harmonic proportion, the orders, perspective and orthographic projection.

Structure:

The module sequence is comprised of two lectures plus one discussion section per week. *All readings listed under the rubric "required" are just that, required.* These readings serve as the crucial background for class lectures and sections, and should be completed *before* each class. Further suggested readings are included in the syllabus (there simply for your information). Basis of grade: completion of assignments, attendance and participation in section discussions.

Assignments:

In addition to four 1-2 pp. weekly responses to readings, there will be the following group assignment: elevation, section and a 3-D computer model to be extrapolated from the plan published by Serlio showing the cloister courtyard designed by Bramante for his Tempietto. We will break you up into groups and provide access to the plan in question.

Readings:

All required readings will be posted on the course website.

Introductory texts, survey materials and exhibition catalogues, which you are encouraged to peruse according to your interests, include:

- Leonardo Benevolo, *Architecture of the Renaissance* (Boulder: Westview Press, 1978)
- Jacob Burckhardt, Peter Murray, *The Architecture of the Italian Renaissance* (Chicago: University of Chicago Press, 1985)
- Ludwig Heydenreich, Paul Davies, *Architecture in Italy 1400-1500* (New Haven: Yale University of Press, 1995)
- Wolfgang Lotz, Deborah Howard, *Architecture in Italy 1500-1600* (New Haven: Yale University of Press, 1995)
- Wolfgang Lotz, *Studies in Italian Renaissance Architecture* (Cambridge: The MIT Press, 1977)
- Bates Lowry, *Renaissance Architecture* (New York: G. Braziller, 1962)
- Henry A. Millon, Vittorio M. Lampugnani, eds., *The Renaissance from Brunelleschi to Michelangelo: The Representation of Architecture* (New York: Rizzoli, 1994)
- Peter Murray, *The Architecture of the Italian Renaissance* (New York: Schocken Books, 1986)
- Colin Rowe, *Italian Architecture of the 16th Century* (New York: Princeton Architectural Press, 2002)
- Manfredo Tafuri, *Interpreting the Renaissance: Princes, Cities, Architects* (New Haven: Yale University Press, 2006)
- Peter Thornton, *The Italian Renaissance Interior 1400-1600* (New York: Harry N. Abrams, 1991)
- Giorgio Vasari, *Lives of the Most Eminent Painters, Sculptors and Architects* (Oxford: Oxford University Press, 2008)
- Rudolf Wittkower, *Architectural Principles in the Age of Humanism* (New York: W. W. Norton, 1971)

Provisional Schedule of Lectures

Week 1

1/25 – Introduction

1/27 – Brunelleschi

Required:

- Giulio Carlo Argan, "The Architecture of Brunelleschi and the Origins of Perspective Theory in the Fifteenth Century," *Journal of the Warburg and Courtauld Institutes* 9 (1946): 96-121

Suggested:

- Martin Kemp, "Science, Non-Science and Nonsense: The Interpretation of Brunelleschi's Perspective," *Art History* (1978): 134-161
- Giovanni Fanelli, *Brunelleschi's Cupola: Past and Present of an Architectural Masterpiece* (Florence: Mandragora, 2004), 2 vols.
- Frank D. Prager, *Brunelleschi: Studies of his Technology and Inventions* (Mineola, N.Y.: Dover Publications, 2004)
- Paolo Galluzzi, *Renaissance Engineers: From Brunelleschi to Leonardo da Vinci* (Florence: Istituto e Museo di Storia della Scienza, 1996)
- Howard Saalman, *Filippo Brunelleschi: The Buildings* (University Park, PA: Pennsylvania State University Press, 1993)
- Heinrich Klotz, *Filippo Brunelleschi: The Early Works and the Medieval Tradition* (New York: Rizzoli, 1990)
- Antonio Manetti (1423-1497), *The Life of Brunelleschi*, trans. Howard Saalman (University Park, PA: Pennsylvania State University Press, 1970)
- Howard Saalman, "Filippo Brunelleschi: Capital Studies," *The Art Bulletin* 40/2 (Jun. 1958): 113-137
- Rudolf Wittkower, "Brunelleschi and 'Proportion in Perspective'," *Journal of the Warburg and Courtauld Institutes* 16/3-4 (1953): 275-291

Week 2

2/1 – The Ideal City

Required:

- Alina Payne, “Rudolf Wittkower and Architectural Principles in the Age of Modernism,” *Journal of the Society of Architectural Historians* 53/3 (Sep. 1994): 322-342

Suggested:

- Luisa Giordano, “On Filarete’s *Libro architetonico*,” in Vaughan Hart, Peter Hicks, eds., *Paper Palaces: The Rise of the Renaissance Architectural Treatise* (New Haven: Yale University Press, 1998), 51-65
- S. Lang, “Sforzinda, Filarete and Filelfo,” *Journal of the Warburg and Courtauld Institutes* (1972): 391-397
- Filarete, *Treatise on Architecture*, trans. by John R. Spencer (New Haven: Yale University Press, 1965)
- Carroll William Westfall, *In This Most Perfect Paradise: Alberti, Nicholas V and the Invention of Conscious Urban Planning* (University Park: Pennsylvania State University Press, 1974)

2/3 – The Quattrocento Palace

Required:

- Leon Battista Alberti, “Ornament to Private Buildings,” *On The Art of Building in Ten Books* (Cambridge: The MIT Press, 1988), 291-319

Suggested:

- Charles Burroughs, *The Italian Renaissance Palace Façade: Structures of Authority, Surfaces of Sense* (Cambridge: Cambridge University Press, 2009)
- Amanda Lillie, *Florentine Villas in the Fifteenth Century: An Architectural and Social History* (New York: Cambridge University Press, 2005)
- James Lindow, *The Renaissance Palace in Florence* (London: Ashgate, 2007) • Jacob Burckhardt, “The Architectural Character of the Palazzo,” *The Architecture of the Italian Renaissance* (Chicago: University of Chicago Press, 1985), 133-160

2/8 – Architectural Drawing

Required:

- Robin Evans, “Seeing Through Paper,” *The Projective Cast* (Cambridge: The MIT Press, 2000), 107-121

Suggested:

- Wolfgang Lotz, “The Rendering of the Interior in Architectural Drawings of the Renaissance,” *Studies in Italian Renaissance Architecture*, 1-65
- James Ackerman, “The Origins of Architectural Drawing in the Middle Ages and the Renaissance,” *Origins, Imitation, Conventions* (Cambridge: The MIT Press, 2002), 27-65
- Jehane R. Kuhn, “Measured Appearances: Documentation and Design in Early Perspective Drawing.” *Journal of the Warburg and Courtauld Institutes* 53 (1990): 114-132
- John Shearman, “Raphael, Rome, and the Codex Escurialensis,” *Master Drawings* 15/2 (Summer 1977): 107-146, 189-196
- Christoph Luitpold Frommel, “The Architectural Drawings of Antonio da Sangallo the Younger: History, Evolution, Method, Function,” in Christoph L. Frommel, Nicholas Adams, eds., *The Architectural Drawings of Antonio da Sangallo the Younger and his Circle* (New York: The Architectural History Foundation, 1994), vol. 1, 1-60.

2/10 – The Church as Paradigm

Required:

- Rudolf Wittkower, “The Centrally-Planned Church and the Renaissance,” *Architectural Principles in the Age of Humanism* (New York: W. W. Norton, 1971), 3-32

Suggested:

- James Ackerman, “Leonardo da Vinci’s Church Designs,” *Origins, Imitation, Conventions* (Cambridge: The MIT Press, 2002), 68-91
- Arnaldo Bruschi, “Religious Architecture in Renaissance Italy from Brunelleschi to Michelangelo,” in Henry A. Millon, Vittorio M. Lampugnani, eds., *The Renaissance from Brunelleschi to Michelangelo: The Representation of Architecture* (New York: Rizzoli, 1994), 123-181
- Richard J. Betts, “Structural Innovation and Structural Design in Renaissance Architecture,” *The Journal of the Society of Architectural Historians* 52/1 (Mar. 1993): 5-25

2/15 – Bramante and his Circle

Required:

- Arnaldo Bruschi, "St. Peter's and Bramante's Later Style," *Bramante* (London: Thames and Hudson, 1977), 145-176

Suggested:

- Christoph Luitpold Frommel, "St. Peter's: The Early History," in Henry A. Millon, Vittorio M. Lampugnani, eds., *The Renaissance from Brunelleschi to Michelangelo: The Representation of Architecture* (New York: Rizzoli, 1994), 399-423
- Colin Rowe, "Bramante and the Rome of Julius II," *Italian Architecture of the 16th Century* (New York: Princeton Architectural Press, 2002), 23-48
- James S. Ackerman, "Architectural Practice in the Italian Renaissance," *The Journal of the Society of Architectural Historians* 13/3 (Oct. 1954): 3-11

2/17 – Competitions

Required:

- Manfredo Tafuri, "*Jugum Meum Suave Est*: Architecture and Myth in the Era of Leo X," *Interpreting the Renaissance: Princes, Cities, Architects* (New Haven: Yale University Press, 2006), 99-156

Suggested:

- Colin Rowe, "Architecture and the Papacy of Leo X," *Italian Architecture of the 16th Century* (New York: Princeton Architectural Press, 2002), 49-74
- James Clifton, "Vasari on Competition," *The Sixteenth Century Journal* 27/1 (Spring 1996): 23-41

2/22 -- Villas I: Raphael and After

Required:

- James Ackerman, "The Villa as Paradigm," *Perspecta* 22 (1986): 10-31

Suggested:

- Robin Evans, "Figures, Doors, Passages," *Translations from Drawing to Building* (Cambridge: The MIT Press, 1997), 55-92
- Loren Partridge, "The Farnese Circular Courtyard at Caprarola: God, Geopolitics, Genealogy, and Gender," *The Art Bulletin* 83/ 2 (Jun. 2001): 259-293
- David R. Coffin, "The Plans of the Villa Madama," *The Art Bulletin* 49/2 (Jun. 1967): 111-122
- Christoph Luitpold Frommel, "Living *all'antica*; Palaces and Villas from Brunelleschi to Bramante," in Henry A. Millon, Vittorio M. Lampugnani, eds., *The Renaissance from Brunelleschi to Michelangelo: The Representation of Architecture* (New York: Rizzoli, 1994), 183-203
- Vaughan Hart, Peter Hicks, "On Sebastiano Serlio: Decorum and the Art of Architectural Invention," in Vaughan Hart, Peter Hicks, eds., *Paper Palaces: The Rise of the Renaissance Architectural Treatise* (New Haven: Yale University Press, 1998), 140-157
- Pietro C. Marani, "A Reworking by Baldassare Peruzzi of Francesco di Giorgio's Plan of a Villa," *The Journal of the Society of Architectural Historians* 41/3 (Oct. 1982): 181-188
- Henry Millon, "A Note on Michelangelo's Façade for a Palace for Julius III in Rome: New Documents for the Model," *The Burlington Magazine* 121/921 (Dec. 1979): 770-777
- Sebastiano Serlio, *Sebastiano Serlio on Domestic Architecture* (New York: Architectural History Foundation, 1978)
- John Shearman, "Raphael as Architect," *Journal of the Royal Society of Arts* CXVI (1968), 338ff

Required:

- Cammy Brothers, "Architecture as Subject," *Michelangelo, Drawing, and the Invention of Architecture* (New Haven and London: Yale University Press, 2008), 153-203

Suggested:

- James Ackerman, "Michelangelo's 'Theory' of Architecture," *The Architecture of Michelangelo* (1961; London: Penguin Books, 1970), 37-52
- Manfredo Tafuri, "Roma Coda Mundi: The Sack of Rome: Rupture and Continuity," *Interpreting the Renaissance: Princes, Cities, Architects* (New Haven: Yale University Press, 2006), 157-180
- Giulio Carlo Argan, *Michelangelo Architect*, trans. by Marion L. Grayson (New York: Harry N. Abrams, 1993)
- Charles Burroughs, "Michelangelo at the Campidoglio: Artistic Identity, Patronage, and Manufacture," *Artibus et Historiae* 14/28 (1993): 85-111
- Henry A. Millon, *Michelangelo Architect: The Facade of San Lorenzo and the Drum and Dome of St. Peter's* (Milan: Olivetti, 1988)
- Frank Salmon, "The Site of Michelangelo's Laurentian Library," *The Journal of the Society of Architectural Historians* 49/4 (Dec. 1990): 407-429
- John Shearman, "The Problem of Architecture," *Mannerism* (Harmondsworth: Penguin Books, 1986), 70-79
- William E. Wallace, *Michaelangelo at San Lorenzo: The Genius as Entrepreneur* (Cambridge: Cambridge University Press, 1994)

3/1 –Villas II: Palladio

Required:

- Colin Rowe, "The Mathematics of the Ideal Villa," *The Mathematics of the Ideal Villa and Other Essays* (Cambridge: The MIT Press, 1987), 1-28

Suggested:

- James Ackerman, *Palladio* (London: Penguin Books, 2008)
- Deborah Howard, "Four Centuries of Literature on Palladio," *The Journal of the Society of Architectural Historians* 39/3 (Oct. 1980): 224-241
- Martin Kubelik, "Palladio's Villas in the Tradition of the Veneto Farm," *Assemblage* 1 (Oct. 1986): 90-115
- Daniel Sherer, "Le Corbusier's Discovery of Palladio in 1922 and the Modernist Transformation of the Classical Code," *Perspecta* 35 (2004): 20-39
- Luca Trevisa, *Palladio: The Villas* (Schio: Sassi, 2008)
- Rudolf Wittkower, "Principles of Palladio's Architecture," *Architectural Principles in the Age of Humanism* (New York: W. W. Norton, 1971), 57-100

3/3 – Tafuri Contra Wittkower

Required:

- Manfredo Tafuri, "A Search for Paradigms: Project, Truth, Artifice," *Interpreting the Renaissance: Princes, Cities, Architects* (New Haven: Yale University Press, 2006), 1-22

Suggested:

- Henry A. Millon, "Rudolf Wittkower, 'Architectural Principles in the Age of Humanism': Its Influence on the Development and Interpretation of Modern Architecture," *The Journal of the Society of Architectural Historians* 31/2 (May 1972): 83-91

BUILDINGS, TEXTS AND CONTEXTS IV

GSD 4204 M4

NINETEENTH-CENTURY ARCHITECTURE:

BETWEEN HISTORY AND MODERNITY

Antoine Picon

Spring 2011

GENERAL ARGUMENT

Nineteenth-century architecture is a difficult subject in a design school. Its aesthetics is in sharp contrast to the contemporary quest for authenticity. Although today's architectural debate has distanced itself from the modern movement ideals, architects have not get rid of the modernist condemnation of eclecticism. Yet, nineteenth-century architecture is fundamental if one wants to understand the emergence and development of the modern movement. Above all, it raises issues such as the tension between art and technology that are still problematic today.

Through a series of case studies, the course will focus on the following themes:

- the question of the changing nature of the relation between architecture and society and the interrogations it implies regarding program and style,
- the scientific and technological challenge implied by industrialization,
- the evolution of the definition of architectural design through phenomena like the emergence of Beaux Arts composition, the quest for structural rationalism or the German obsession with tectonic.

The Building Texts and Contexts series is meant to promote students personal reflection through a close association between lectures and sections. Beside lecture attendance, presence at section is mandatory. The weekly section assignments given by section leaders are also an integral part of the course evaluation. In addition, students will turn a final course assignment determined by the sections leaders.

PROGRAM AND READINGS

Meeting 1, March 8

NINETEENTH-CENTURY ARCHITECTURE: AN INTRODUCTION

Meeting 2, March 10

ARCHITECTURAL COMPOSITION AT THE ECOLE DES BEAUX-ARTS

Jean-Nicolas-Louis Durand, *Précis of the Lectures on Architecture with Graphic Portion of the Lectures on Architecture* (Los Angeles: The Getty Research Institute, 2000), Preface and Introduction, pp. 73-88.

Hyungmin Pai, *The Portfolio and the Diagram* (Cambridge, Massachusetts: MIT Press, 2002), chapter 2, "The Portfolio and the Academic Discipline", pp. 40-73.

Barry Bergdoll, *Léon Vaudoyer: Historicism in the Age of Industry* (New York, Cambridge, Massachusetts: The Architectural History Foundation, M.I.T. Press, 1994), chapter 3, "The French Academy in Rome, 1826-1832: Laboratory of Romantic Historicism", pp. 75-108.

Meeting 3, March 22

THE BEAUX-ARTS IN NINETEENTH-CENTURY AMERICA

Meeting 4, March 24

SCHINKEL'S ALTES MUSEUM

Heinrich Hübsch, "In What Style Should We Build?", in *In What Style Should We Build?* (Los Angeles: The Getty Research Institute, 1992), pp. 63-101.

Alex Potts, "Schinkel's Architectural Theory", in Michael Snodin (ed.), *Karl Friedrich Schinkel: A Universal Man* (New Haven: Yale University Press, 1991), pp. 47-55.

Neil Levine, "Schinkel's Search for Synthesis," in *Modern Architecture: Representation and Reality* (New Haven: Yale University Press, 2009), pp. 101-114.

Meeting 5, March 29

ORNAMENT AND THE RHYTHMS OF MODERN LIFE: THE BAUAKADEMIE

Meeting 6, March 31

A BUILDING TURNING POINT: THE CRYSTAL PALACE

Thomas A. Markus, *Buildings and Power: Freedom and Control in the Origin of Modern Building Types* (London and New York: Routledge, 1993), Chapter 8, "Ephemeral Knowledge", pp. 213-228.

Robert Thorne, "Paxton and Prefabrication", in Derek Walker (ed.), *The Great Engineers: The Art of British Engineers 1837-1987* (London: Academy Editions, New York, St Martins Press, 1987), pp. 52-69.

Meeting 7, April 5

WORLD EXHIBITIONS AND THEIR EVOLUTION

Meeting 8, April 7

THE INVENTION OF THE NINETEENTH-CENTURY CAPITAL: MAPPING PARIS

Patrice Higonnet, *Paris: Capital of the World* (Cambridge: Harvard University Press, 2002), "The Urban Machine", Chapter 8, pp. 177-204.

François Loyer, *Paris nineteenth century: Architecture and Urbanism* (New York: Abbeville Press, 1998).

Ann Komara, "Concrete and the engineered picturesque. The Parc des Buttes Chaumont (Paris 1867)", in *Journal of architectural education*, Vol. 58, September 2004, pp. 5-12.

Meeting 9, April 12

THE NETWORKED CITY AND NATURE: THE PARC OF THE BUTTES
CHAUMONT

Meeting 10, April 14

ANTONIO GAUDI'S GÜELL COLONY CHAPEL AND GÜELL PARK

Martin Bressani, "Notes on Viollet-le-Duc's Philosophy of History, Dialectics, and Technology," in *Journal of the Society of Architectural Historians* (December 1989), pp. 327-350.

George R. Collins, "Antonio Gaudi: Structure and Form", in *Perspecta*, Vol. 8 (1963), pp. 63-90.

Meeting 11, April 19

NATURALISM, RATIONALISM AND FANTASTIC: THE SAGRADA FAMILIA

Meeting 12, April 21

FROM STRUCTURAL RATIONALISM TO MODERN IDEALS: THE THEORY
OF AUGUSTE CHOISY

Yves-Alain Bois, Michael Glenny, "Montage and Architecture", in *Assemblage*, n°10 (December 1989), pp. 110-131.

Richard Etlin, "Le Corbusier, Choisy, and French Hellenism: The Search for a New Architecture", in *The Art Bulletin*, Vol. 69, n°2 (June 1987), pp. 264-278.

gsd 6202: analysis and design of building structures II

Spring 2011

Syllabus

Course Description

This course is a continuation of GSD 6201 and completes the introduction to the analysis and design of building structures. It addresses the analysis and design of structural elements such as 3-D trusses, arches, cable structures, continuous beams, rigid and braced frames, shear walls and plates. It also introduces advanced topics such as shells and tensile structures, seismic design and high-rise buildings. The use of structural elements in a building context and simplified methods of analysis of indeterminate structures are considered. In addition to timber and steel systems GSD 6202 introduces ultimate strength design of reinforced concrete (beams, columns) and considers the concept of pre-stressing. Issues of lateral load resistance are considered throughout the term.

A computer-based structural analysis program (Multiframe 3D) will be used during the course. Together with its first part, GSD 6201, this course:

- Provides an understanding of the behavior of most structural systems.
- Gives students an exposure to basic and advanced structural concepts, and teaches simple calculations and the use of computer tools applicable in the early stages of the design process in order to select and size the most appropriate structural systems.
- Teaches the engineering language in an effort to improve the communication with the engineers in the design team

Topics:

- 3-D Trusses and Spaceframes (short summary of 2D determinate trusses covered last semester, introduction of indeterminate trusses, 3D systems and review of spaceframes; involves use of Multiframe)
- Funicular Structures I: Cables (form derivation of funicular systems using graphic and numerical methods, analysis of internal forces, stability with respect to dynamic loads, double-cable systems, efficiency)
- Funicular Structures II: Arches (graphical and numerical analysis, buckling and stability issues, 3-hinged arches)
- Statically Indeterminate Systems I: Continuous Beams (fundamental behavior, finding reactions based on inflection points, shear and moments diagrams, stiffness variations, sizing and shaping of steel and timber continuous beams)
- Statically Indeterminate Systems II: Rigid Frames (fundamental behavior, finding reactions using simplified methods, shear and moment diagrams, stiffness variations, sway, multistory frames, load cases, design of steel and timber frames)
- Reinforced Concrete I: Material Properties and Beams (mechanical properties, ultimate strength design of beams using ACI 318, deflection criteria, re-bar placement, shaping of beams and reinforcement patterns)
- Reinforced Concrete II: Columns, Foundations and Pre-Stressing (short columns, interaction curves for column design, types of and basic design approach for foundations, introduction of pre-stressing as a general principle and use in concrete beams)
- System Design (spatial structural grids, efficiency and optimization, relation of structural system to architectural form and space)
- Slabs and Plates (one-way and two-way systems in bending, behavior and approximate design methods, total moment approach, column and middle strip concept, edge condition, punching shear)
- Folded Plates, Shells and Membranes (plate versus beam action, fundamentals of folded plates, types of rigid and non-rigid surface structures, membrane stresses and curvature in surface structures, basic behavior and numerical analysis of spherical shells)

- Seismic Design and High-Rise Buildings (review of seismic loads and design principles, special techniques such as tuned mass-dampers, base-isolation, active dampening systems; introduction to stabilization strategies for high-rise buildings using frame action, triangulation, core and belt trusses and other approaches)

Prerequisites:

GSD 6201 or equivalent.

Class Format:

The class is structured in a weekly cycle, beginning on Friday with the lecture and homework assignment and ending on Wednesday afternoon in class. On Monday at 10.00 am (G 318) there is an optional review session for the group homework, case study, or to answer any other questions on structures. The homework assignment (posted online on Friday morning) is due the following Wednesday in class.

Attendance is required on Wednesdays and Fridays. Studying in advance is essential for the Wednesday session since a weekly quiz will be held in class. Lecture handouts will be generally available in the library (on reserve) on Friday morning. Feel free to copy the handouts for your own use. They are copyrighted and not for further distribution in paper or in any other format.

Teaching Resources

Prof. Martin Bechthold (office: 334 Gund Hall Email: mbechthold@gsd.harvard.edu.). The instructor will be available for questions immediately after each class. He will also hold regular office hours during which anyone is encouraged to come and discuss the course or other matters of interest. Additional times to meet can be arranged via email.

Teaching Assistants: Robin Bankert, Andrew Domnitz, Mar Ferrer Saez, Maria Galustian, Darin Mano, Matan Mayer are the teaching assistants for the course. The TAs will hold regular office hours to help you with the content of the course, the homework, the project and the exams. The office hours will be posted on the course web site.

Textbook: The required textbook is: Schodek, D., Bechthold, M. *Structures*, Prentice Hall, New York, 2008, 6th edition. Some copies of the book are available for sale at the Harvard Coop. The book can also be purchase online (new and used). Several additional texts on the covered subjects are on reserve in the Loeb Library and collateral reading is highly recommended. A reading list is posted on the website.

Web Site: The web site is accessible through the iSite system. Homework assignments and case studies will be posted here, as well as an anonymous overview of current student grades in the class. Additional problem sets, examples and lectures are available at the Interactive Structures Modules, accessible on the CD that comes with the book. Course material may be also available outside G 334 in case technical problems prevent access to the website.

Study Groups: Groups should form at the end of the 1/26 Wednesday class session. Each group will prepare one case study for class discussion, collaborate on the design project, complete the homework, study and discuss the assigned readings. Please note that we will not monitor study groups. The maximum number of students in a group is 4.

Case studies: Large portions of the Wednesday class meetings will center on the discussion of case studies. Cases are assigned by the instructor each week. Certain study groups will present cases using PowerPoint or Adobe PDF as a basis for class discussion. All presentation files must be uploaded to the

course web site prior to class. Most homework assignments are based on the case study/studies of the week. Students should be ready to make opening statements and debate the issues addressed in the questions accompanying each case. In general, case presentations should be 10-12 minutes in length, both in terms of content and in the way structural analysis is presented graphically. Please note that material generated by others (e.g. scanned images, especially analytic diagrams) must be properly referenced.

Homework: Problem sets will usually be assigned on a weekly basis. Each group will submit one problem set for grading each week and the same grade will be assigned to all group members. Homework assignments are due in class on Wednesday. For some topics extra credit problems may be offered. Extra credit solutions must be submitted individually, and if solved correctly will result in the individual student's homework grade of that week being adjusted.

Use of Computers: Use of computers is a required part of the course. You will be expected to perform case study analyses using computers, and to present your case studies etc. to the class using PowerPoint or Adobe PDF. **Multiframe – 3 D and SectionMaker** will be the computer programs that we will use for the class. There will be a Multiframe tutorial for everyone. Please note that although you are encouraged to use computers, evidence that you know how to do the work by hand is absolutely necessary in order to pass the course, as you will have no access to computers for the quizzes or for the final exam.

Quizzes and Final Exam: There will be 8 quizzes during the course of the term, and a final examination at the end of the term – all closed books, but with one page of notes (one side of one 8.5 x 11) permitted for each quiz and two single-sided pages for the final exam. Each quiz will be graded and you will receive the corrected quiz in your mailbox. A warning will be issued if several quiz grades are fail/not take. The final examination *must be taken on the date established by the school unless serious medical reasons dictate otherwise.*

Grading: The final grade is based upon the instructor's estimate of the student's comprehension of the material, at the end of the course. The quizzes are weighed 40%, class participation, homework and the case 25%, the design workshop 10%, and the final exam carries 25% of the grade. Your lowest quiz grade will be dropped before computing the final quiz average. Missed quizzes (without valid medical excuse) will not be dropped, and will be factored as a zero into your final grade. Students that risk receiving a 'fail' in the class may be required to do remedial work in order to pass the course. Such work is normally assigned between the last days of classes and the final exam. Supplementary work is not assigned for a risk of receiving a 'low pass'.

Design Project: Each group will collaborate on a group design workshop, and each group member will receive the same grade for the workshop. Final presentations for this part of the course are schedule for Friday, April 22. Attendance is mandatory.

Preliminary schedule

	Date	Day	Topic	Cases	Quiz	Notes
	01/26/11	Wed	Introduction			
1	01/28/11	Fri	Lecture: Beams and Columns			
	02/02/11	Wed	Cases	x	x	Multiframe Tutorial Monday
2	02/04/11	Fri	Lecture: Triangulated Systems, 3D Trusses and Spaceframes			
	02/09/11	Wed	Case and Quiz	x	x	
3	02/11/11	Fri	Lecture: Funicular Structures			
	02/16/11	Wed	Case and Quiz	x	x	
4	02/18/11	Fri	Lecture: Statically Indeterminate Structures I: Continuous Beams			
	02/23/11	Wed	Case and Quiz	x	x	
5	02/25/11	Fri	Lecture: Statically Indeterminate Structures II: Frames			
	03/02/11	Wed	Case and Quiz	x	x	
6	03/04/11	Fri	Lecture: Concrete 1: Material Properties, Beams and Columns			
	03/09/11	Wed	Case and Quiz	x	x	
7	03/11/11	Fri	Lecture: Concrete 2: Foundations, Pre-stressing, Slabs and Plates			workshop handout
	03/16/11	Wed	Spring Recess			
	03/18/11	Fri	Spring Recess			
	03/23/11	Wed	Case and Quiz	x	x	
8	03/25/11	Fri	Lecture: Design of Structures			
	03/30/11	Wed	Workshop Concepts			
9	04/01/11	Fri	Structural Surfaces: Folded Plates and Shells, Lecture			
10	04/06/11	Wed	Structural Surfaces: Membranes, Lecture			concepts due
	04/08/11	Fri	Case and Quiz	x	x	
11	04/13/11	Wed	Seismic Design and High-Rise Buildings, Lecture			
	04/15/11	Fri	Design Workshop			
12	04/20/11	Wed	Lecture: Design of Structures Course evaluation			
	04/22/11	Fri	Workshop Presentations			workshop due
	05/09 - 05/12		Final Exam (date tbd)			

6203M3

City of Wood

Spring 2011

Instructor: Jonathan Levi

Course Syllabus

Rationale

Timber, used for structure and finish, has dominated the American settlement project since its inception in the 17th c. The convergence of abundant native forests, prodigious shipwrighting and medieval frame techniques created the foundation for a material culture which governs how we, as a nation, relate to nature, to community and to ourselves. Today, wood construction (mostly housing) accounts for a plurality of the national capital output including all types of buildings and fixed equipment. Its consideration from the perspectives of design and technique is inevitable for any theory of architecture which seeks to broaden the positive social influence of design. If we look objectively at the American city with its compact steel and masonry core and low density but relatively vast and massively populated surrounding rings we can see that, despite the myth of the gray concrete metropolis, we live very largely in a warm thin shelled 'City of Wood'.

But, apart from the convenience of production, is this the city we wish to live in? What are the deficiencies of our wood city? How do its spatial propensities and material boundaries promote the aggregation of community? How does its visual language accommodate the expressive needs of institutions? What does its touch say of permanence? Finally what is its future? Is the future to be governed by substitute materials or can new techniques marry the economic and ecological relevance of renewable wood to the need for greater functionality, durability and dignity?

To answer these global questions, we must look at the specific details of wood construction to understand the relationship between the techniques of production and the resulting effect at the scale of human occupation. We will explore the morphology of structure, the categorization of components, the sequencing of assembly, the durability and fit of joints, the ecology of materials and thermal performance, the ergonomics of proportion and the pleasure and signification of color, texture and composition. In the end we will make judgements about the tried and true and venture proposals for progress both incremental and radical.

Content

The subject matter will consist of three large conceptual components representing different categories of knowledge, skill and art. First, the student will be required to gain fundamental data about the materials, techniques and production processes which constitute contemporary wood construction and to some extent its contributory historical antecedents. Second, the course will provide an introduction to the habits and rigors of mind, hand and computing which are employed in orchestrating construction as well as making precise technical discernments about the assembly and functionality of full scale

details. Finally, these technical processes and conceptual tools will be contextualized within architecture's larger artistic, social and cultural project and within the student's overall development as a designer.

Fundamental data will include:

- Light construction site work
- Concrete foundation types
- Timber and lumber
- Engineered timber and lumber
- Supplemental steel
- Prefabricated members
- Alternative structural materials and assemblies
- Methods of fabrication/mass customization
- Sheathing and decking
- Fasteners and connectors
- Timber frame morphology/structural joining
- Platform frame morphology
- Platform frame assembly
- Manufactured housing
- Thermal insulation and weatherproofing
- Advanced light frame envelopes
- Light frame cladding, trim and transitions
- Exterior horizontal and vertical openings
- Roof surfaces
- Interior horizontal and vertical openings
- Finish lumber and veneers
- Interior surfaces and casework

Process and representation will include:

- Building code response
- Means of representing structure
- Construction document/specification organization and layering
- Scales of representation
- Detail isolation- Typical vs. atypical conditions
- Detail conceptualization/sketching
- Detail induction and deduction
- Small scale assembly and construction sequence
- Small scale function
- Durability and weathering
- Structural armatures
- Systematic detail morphologies
- Tracing three dimensional continuities
- Non represented intersections

Design contextualization will include:

- Site and detail
- Resonance of scales
- Scale contrast and bridging

Small scale figuration
Small scale iconology
Modeling of surfaces
Modeling of surface transitions
Joints: Abutment, overlap and interpenetration
Expression/suppression of structure
The 'content' of materials
Material selection and form
Politics of material selection
Politics of craft and mechanization
Systematic vs. non organic form
Totalization vs. differentiation
Manipulation of light and shadow
Generation of proportions
Comfort and ergonomics

Methodology

The method of the course will be divided into two phases: Instructor lectures and conversations will present the outlines of the course material in words and images. The conversations will be built around video projected improvisational sketches which will convey technical information but also demonstrate a model process for detail problem solving and representation. The conversations will include discussions of submitted student work. The second phase of activity will be student work in two distinct formats:

Course project:

The course project will consist of a single two storey elevation or building front of the student's individual design. The elevation design will emerge over the course of the module together with the detail subjects. There will be four detail subjects grouped into two exercises. These process details will interact with the concept structure and then be brought together formally at the end of the course in a juried final presentation. Teaching assistants will provide weekly desk critiques to assist the students in the accurate development of the exercises.

Case Study:

Each case study section will prepare a collaborative study of a built work by a contemporary architect. The case studies will focus on interpretation of document sets and revealing problems and innovations in wood detailing. The case studies will be presented in class for group analysis and discussion.

Readings and References

Web site:

The course will maintain a web site with postings of assignments, lecture/conversation images, updated bibliography, conversation sketches and selected student submissions.

Required Reading:

Allen, Edward J., Fundamentals of Building Construction, Materials & Methods. 3rd ed. New York: John Wiley, 1999.

References:

Massachusetts State Building Code. 8th Edition. One and Two Family Dwelling Code.
Available on the web: www.state.ma.us/bbrs/code.htm

Ching, Frank. Building Construction Illustrated, 2nd Ed. New York: John Wiley, 1998.

Evaluation

The basis of the final grade will be:

Class participation 20%

Course project: 60%

Case study (based on individual contribution): 20%

Course attendance is required. More than 2 absences will result in grade reduction.

GSD_6203M4_SP2011

Materials, Constructions, Processes

Instructor	Eric Höweler, ehoweler@gsd.harvard.edu
TAs	Alison von Glinow vonglinowa@gmail.com Etien Santiago santiago@gsd.harvard.edu Michael Mahal michaelmahal@hotmail.com Corey Wowk cwowk@gsd.harvard.edu André Albuquerque Passos apassos@gsd.harvard.edu
Course Type	Lecture
Credits	2
Schedule	Tuesday and Thursday 8:30 – 10:00 *
Location	109 Gund Hall
Prerequisites	6111M1 Materials and Construction 6112M2 Energy, Technology and Building 6203M3 Science and Technology

Course Description

The course introduces a conceptual framework for the design of building assemblies, as informed by a clear understanding of construction technologies and of the properties of building materials. Building materials are presented and analyzed with emphasis on their physical and architectural properties, functions, and behavior in manufactured and installed assemblies. The design of building envelopes in various materials is examined as integrated subsystems of components in relation to the forces that shape their composition. The methodology and format of the design of building detailing are discussed, and the roles of the various participants in this process are reviewed.

This course addresses the steel frame and the glass envelope as building technologies and also as cultural artifacts. The course will review the history of building envelopes, from the separation of structure from enclosure (the curtain wall and the steel frame), to the hybrid systems of exo-skeletal bundled tube and steel shell. With a focus on building systems, assemblies and details, the course will review developments in cladding design, and cover high-performance building envelopes that address energy efficiency and sustainable design. Contemporary case studies will include in tall buildings, museums and bridges. Invited guests will include architects, structural engineers and cladding consultants. Assignments will explore the detailing of systems from part to whole, with an emphasis on the interrelationship between the technical detail and the overall building expression.

Requirements

In addition to the two lectures per week, guest lectures and field trips to construction sites are scheduled. Attendance of all of these is mandatory. Each student is expected to spend 4-6 hours per week on assignments and required readings. The final grade is distributed as follows: Assignment 1: 20%, Assignment 2: 20%, Assignment 3: 40%, class participation 20%.

Schedule**

March 8	Tues	Introductory Lecture – Depth to Surface Reading: Joe Morgenstern, "City Perils, The Fifty-Nine Story Crisis", <i>The New Yorker</i> . Assignment 1.1 issued
March 10	Thurs	Guest Speaker – Les Robertson (LERA) Reading: Cecil Balmond, Informal, pp. 13-125. Reading: Andrea Deplazes, <i>Constructing Architecture</i> , pp113-138 (Why Steel?)
March 15	Tues	Spring Break (no class)
March 17	Thurs	Spring Break (no class)
March 22	Tues	Lecture - Evolution of Building Envelopes

		<p>Reading: Andrea Deplazès, <i>Constructing Architecture</i>, pp147-166 (Glass-crystalline, amorphous)</p> <p>Reading: Edward Allen, <i>Fundamentals of Building Construction</i>, Ch 19 (Designing Cladding Systems), and Ch 21 (Cladding with Metal and Glass)</p> <p>Reading: Rayner Banham, "The Glass Paradise," pp. 337-342.</p>
March 24	Thurs	<p>Lecture - Façade Systems</p> <p>Reading: Edward Allen, <i>Fundamentals of Building Construction</i>, Ch 11 (Steel Frame Construction)</p> <p>Reading: Michael Wigginton, <i>Glass in Architecture</i>, pp 84-107 (Glass in Architecture)</p> <p>Assignment 1.1 due</p> <p>Assignment 1.2 issued</p>
March 29	Tues	<p>Lecture – Case studies</p> <p>Reading: Jenny Lovell, <i>Building Envelopes, An Integrated Approach</i></p>
March 31	Thurs	<p>Guest Speaker</p> <p>Reading: Kiel Moe, <i>Integrated Design in Contemporary Architecture</i></p> <p>Assignment 1.2 due</p> <p>Assignment 2 issued</p>
April 5	Tues	<p>Lecture – Case studies</p> <p>Reading: Reiser + Umemoto, <i>Atlas of Novel Tectonics</i>, pp. 18-35</p>
April 7	Thurs	<p>Guest Speaker</p> <p>Reading: Nina Rappaport, "Deep Decoration," in <i>Decoration</i>, 30 60 90, 2006.</p> <p>Reading: David Leatherbarrow, Mohsen Mostafavi, <i>Surface Architecture</i>, pp 1-78, 215-242.</p> <p>Assignment 2 due</p> <p>Assignment 3.1 issued</p>
April 12	Tues	<p>Lecture - Function of Ornament</p> <p>Reading: Farshid Moussavi, Introduction to <i>Function of Ornament</i></p> <p>Reading: Robert Somol, "12 Reasons to get in Shape," in <i>Content</i>, pp.</p>
April 14	Thurs	<p>Guest Speaker - Ben Pell</p> <p>Reading: Ben Pell, "The Articulate Surface," pp .</p> <p>Reading: Robert Levit, "Contemporary Ornament", in <i>Harvard Design Magazine</i></p> <p>Assignment 3.1 due</p> <p>Assignment 3.2 issued</p>
April 19	Tues	<p>Lecture –Envelopes and Politics</p> <p>Reading: Alejandro Zaera Polo, "The Politics of the Envelope," in <i>Log 13/14</i></p> <p>Reading: Alejandro Zaera Polo, "The Politics of the Envelope," in <i>Log 16</i></p>
April 21	Thurs	<p>Lecture / Discussion</p> <p>Reading: <i>From Control to Design, Parametric/Algorithmic Architecture</i></p> <p>Assignment 3.2 due</p> <p>Assignment 3.3 issued</p>
TBD		<p>Final Review (Piper Auditorium)</p> <p>All assignments due (1.1, 1.2, 2, 3.1, 3.2, 3.3)</p>

* Changes to the schedule, if necessary, will be announced via email and the course web site.

** Schedule of site visit may need to change depending on site constraints.

Additional Suggested Readings:

- Emily Abruzzo, Jonathan Solomon, eds., *Decoration, 30 60 90*, 2006
- Bill Addis, *The Art of the Structural Engineer*, Artemis, 1994.
- Edward Allen, *Fundamentals of Building Construction*, Wiley, 2004.
- Francisco Asensio Verver, *The Architecture of Glass*, Arco, 1997.
- Cecil Balmond, *Informal*, Prestel, 2002.
- Reyner Banham, "The Glass Paradise," in *The Light Construction Reader*, Moncelli, 2002.
- Michael Bell, Jeannie Kim, editors, *Engineered Transparency*, Princeton Architectural Press, 2009.
- Adriaan Beukers, Ed van Hinte, *Lighness*, 010, 2001.
- Francois Blanciak, *Siteless, 1001 Building Forms*, MIT Press, 2008.
- Eve Blau, "Tensions in Transparency," *Harvard Design Magazine* 29, Fall Winter 2008-2009.
- Beatriz Colomina, *Privacy and Publicity*, MIT Press, 1996.
- Andrea Compagno, *Intelligent Glass Facades*, Birkhäuser, 1995.
- Andrea Deplazes, *Constructing Architecture, Materials Processes Structures*, Birkhäuser, 2005.
- Hisham Elkadi, *Cultures of Glass*, Ashgate, 2006.
- Virginia Fairweather, *Expressing Structure*, Birkhäuser, 2004.
- John Fernandez, *Material Architecture*, Architectural Press, 2006.
- Annette Fierro, *The Glass State, The Technology of the Spectacle*, MIT Press, 2003.
- Edward Ford, *Details of Modern Architecture*, MIT Press, 1997.
- Dan Graham, *Two Way Mirror Power*, MIT Press, 1999.
- Gramazio & Kohler, *Digital Materiality in Architecture*, Lars Muller Publishers, 2008.
- Todd Gannon, ed, *The Light Construction Reader*, Monacelli Press, 2002.
- Oliver Herwig, *Featherweights*, Prestel, 2003.
- Herzog, Kripner, Lang, *Facade Construction Manual*, Birkhäuser, 2004.
- Herzog & de Meruon, *Prada Aoyama Tokyo*, Fondazione Prada, 2003.
- Hindrichs, Heusler, *Facades, Building Envelopes for the 21st Century*, Birkhäuser, 2004.
- John Hix, *The Glass House*, Phiadon, 1996.
- Brooke Hodge, *Skin + Bones: Parallel Practices in Fashion and Architecture*
- Alan Holgate, *The Art of Structural Engineering, The Work of Jörg Schlaich*, Edition Axel Menges.
- Eric Höweler, "Optimized Envelopes: Seattle Public Library's Structural Shell," *Praxis* 6, 2004.
- Eric Höweler, "Thermal Space," in *HK LAB 2*, Map Book Publishers, 2006.
- Eric Höweler, "Vertical Horizons, Curtain Wall Backgrounds," *Dichotomy: Speculations*, 2002.
- Helmut Jahn, Werner Sobek, *Archineering*, Hatje Cantze, 1999.
- Hanif Kara, *Design Engineering AKT*, Actar, 2008.
- Jeffrey Kipnis, "The Cunning of Cosmetics," in *The Light Construction Reader*, Monacelli, 2002.
- Knaack, Klein, Bilow, Auer, *Facades*, Birkhäuser, 2007.
- Phyllis Lambert, *Mies in America*, CCA, 2001.
- Annette LeCuyer, *Steel and Beyond*, Birkhäuser, 2003.
- Matthys Levy, Mario Salvadori, *Why Buildings Fall Down*, WW Norton 1987.
- Patrick Loughran, *Falling Glass*, Birkhäuser, 2003.
- Ellen Lupton, *Skin, Surface, Substance + Design*, PAP, 2002.
- Greg Lynn, Shoen Yoh, Prefectura Gymnasium, *Folding in Architecture, AD*, 1993.
- Reinhold Martin, *The Organizational Complex*, MIT Press, 2003.
- Detlef Mertens, *The Presence of Mies*, PAP, 1994.
- Farshid Moussavi, *The Function of Ornament*, 2006.
- Scott Murray, *Contemporary Curtain Wall Architecture*, Princeton Architectural Press, 2009.
- Oesterle, Lieb, Lutz, Heusler, *Double Skin Facades*, Prestel, 2001.
- Ben Pell, *The Articulate Surface*, Birkhauser, 2010
- Henry Petroski, *To Engineer is Human*, Vintage, 1992.
- Ulrich Pfammatter, *Building the Future*, Prestel, 2008.
- Antoine Picon, Alessandra Ponte, eds., *Architecture and the Sciences*, PAP 2003.
- Quetglas Josep, *Fear of Glass*, Birkhäuser, 2001.
- Nina Rappaport, *Support and Resist*, Monacelli Press, 2008.
- Peter Rice, *An Engineer Imagines*, Ellipsis, 1993.
- Colin Rowe, "Chicago Frame", *Mathematics of the Ideal Villa*, MIT Press.
- Andrew Saint, *Architect and Engineer*, Yale University Press, 2007.
- Hilary Sample, "Maintenance Architecture," *Praxis* 6, 2004.
- Paul Scheerbarth, *Glass Architecture*, Praeger Publishers, 1972.
- Schittich, Staib, Balkow, Schuler, Sobek, *Glass Construction Manual*, Birkhäuser, 2007.
- Schulitz, Sobek, Habermann, *Steel Construction Manual*, Birkhäuser, 2000.
- Michael Wigginton, *Glass in Architecture*, Phiadon, 1996.

6205 Environmental Technologies in Buildings – Course Syllabus

Term: Spring 2011
Department: Architecture
Instructor: Christoph Reinhart (reinhart@gsd.harvard.edu)
Office hours: <http://www.signupgenius.com/go/office37>
Teaching Fellows: Diego Ibarra (dibarra@gsd.harvard.edu) and
Holly Samuelson (hwasilow@gsd.harvard.edu)
Teaching Assistants: Lian Chang (lchang1@gsd.harvard.edu)
Time & Location: Lecture - Tuesdays 14:00 - 15:30, Gund Hall 111
Lecture - Thursdays 14:00 - 15:30, Gund Hall 111
Workshops – TBA

Course Description

The primary focus of this course is the study of the thermal, luminous and acoustic behavior of buildings in an architectural context. The course examines the basic scientific principles underlying these phenomena and introduces students to a range of technologies and analysis techniques for designing comfortable indoor environments. Students will be challenged to apply these techniques and explore the role light, energy and sound can play in shaping architecture.

Following a brief review of how to analyze a site's climate and local energy mix, the first part of the course is dedicated to the principles of heat storage and heat flow in and around buildings. Basic manual and computer-based methods to predict the energy use of buildings will also be discussed. In order to introduce students to the effective use of computer simulations in the design process, two *Building Optimization Games*, will be organized during which students will compete who develops the building with the lowest energy use or the best comfort conditions (if the building is naturally ventilated).

The second part of the course will introduce students to the art and science of lighting buildings along with manual and computer-based methods for analyzing daylight within and around buildings.

Following a brief introduction to building acoustics, the last part of the course will touch upon a number of technologies and climatization concepts including natural ventilation, life cycle assessment as well as conventional and emerging HVAC systems.

The course format consists of biweekly lectures and occasional workshops. Individual and group assignments as well as in-class presentations and exercises will help students to study the use of environmental technologies in contemporary buildings.

Learning Objectives

The course aims to help students to:

- ❑ understand and apply the scientific principles underlying the thermal, luminous and acoustic behavior of buildings,
- ❑ learn to evaluate the pros and cons of a range of technologies for creating comfortable indoor environments,
- ❑ acquire the knowledge required to critically discuss/present the environmental concept of a building.

Format

The course format will consist of biweekly lectures and weekly student presentations that are accompanied by occasional evening workshops. Attendance of all lectures is required. More than two unexcused absences will reduce your mark by up to 20%.

Requirements

The following deliverables will be required to pass this class:

- ❑ Timely completion of five assignments that will be distributed via the icourse web site. Assignments have to be submitted in paper format in class on the specified date as well as electronically via the icourse web site. Late assignments will be downgraded one percentage point for each day that they are submitted late. It is up to you to plan your time accordingly.
- ❑ AIA COTE Presentations: You will be working in a group of 5-6 students on a 30 minute in – class presentation plus a report on one of the AIA Cote Top Ten Projects 2010 (www.aiaopten.org/hpb/grid2010.cfm?project_id=1704§ion=16). Presentations should have the following format:
 - Provide an overview of the main environmental features of the building (15 minutes).
 - For each building one focus area has been identified that the presenters should discuss and analyze in more detail based on what they have learnt in class (10 minutes).
 - Discuss what you like and/or dislike about the building and its environmental concept (5 minutes).

The accompanying report should be self contained, follow the overall structure of the presentation and summarize the main results and conclusions. The presentations and reports both have to be submitted at least 30 minutes before the lecture starts via the icourse website.

- ❑ Active participation in class discussions. We will be staging two interactive *Building Optimization Games* in class on Feb 24 and Apr 7 during which students will work in groups of 5 to 6 (same groups as for the AIA presentations) with a dedicated energy modeller. The groups will compete who manages to reach the lowest energy use or best comfort conditions in a school and an office building in Boston.

Methods of Assessment:

Grades will be determined based on:

- Quality and timely submission of completed assignments (50%).
- Class Presentation and report (30%).
- Participation in class discussions (20%).
- Members of the winning groups in the 'Building Optimization Games' will each get an additional 10% per win.

Bibliography

Information required for completing the assignments will be provided through the lecture notes as well as the readings on the course web site. However, the following list of textbooks is recommended for additional reading.

- G. Z. Brown and Mark DeKay, Sun, Wind & Light: Architectural Design Strategies (2nd edition), John Wiley & Sons, ISBN: 0-471-34877-5 (paperback), 2001 (~\$67)
- Roger Benham, *Architecture of the well-tempered environment* (2nd edition), The University of Chicago Press, Chicago, ISBN 0-226-03698-7 (paperback), 1984 (~\$35)
- Norbert Lechner, *Heating, Cooling, Lighting: Design Methods for Architects* (2nd edition), John Wiley & Sons, ISBN: 0-471-24143-1 (hardcover), 2001 (~\$85)
- Stephen Szokolay, *Introduction to architectural science* (1st edition) Elsevier Ltd., ISBN 0-7506-5849-5 (paperback), 2004 (~\$40)
- Manfred Hegger, Matthias Fuchs, Thomas Stark, Martin Zeumer, *Energy Manual: Sustainable Architecture*, Construction Manuals, Birkhäuser, 2008 (~\$70)

Software

- We will be using a new plug-in for Rhino called DIVA-for-Rhino (www.diva-for-rhino.com) for solar radiation and daylighting analysis.
- To assess the thermal performance of buildings during the *Building Optimization Games* we will be using DesignBuilder/EnergyPlus. A free 30 day version of DesignBuilder can be downloaded from the DesignBuilder website. The school also has 15 seats of DesignBuilder that can be used from your personal computer via VPN.
- Even though this is not required for this course, you may want to get a temporary, free copy of Autodesk Ecotect from <http://students5.autodesk.com/> as well as the Climate Consultant (www.gsd.harvard.edu/research/gsd-square/Publications/ClimateAnalysisWorkshop.pdf).

Week	Tuesday Lecture (14:00 – 15:30; Room:111)	Thursday Lecture (14:00 – 15:30; Room: 111)	AIA Code Project (focus topic) presented in Tuesday Lecture	Evening Workshop	Assignment (due date and contact TA/TF)
1	Jan 25 Course Introduction; IDP and Energy Use in Buildings	Jan 27 Measuring Climate; Thermal Comfort; Climate Adaptation (Lecture and Visit of the GSD Weather Station)			Ass 1 - Psychrometry (Feb 17, Chan)
2	Feb 1 Solar Radiation; Where is the Sun? How to design a Shading System.	Feb 3 Radiation maps; Sky Models; Window Technologies			
3	Feb 8 Heat Storage and Thermal Mass	Feb 10: Conduction and Convection	355 11 th Street (Shading Systems, Ibarra)		Ass 2 – 'R' value & Thermal Mass (Feb 24, Samuelson)
4	Feb 15 Infiltration and Internal Gains	Feb 17 Load Calculations (hand calculations)	Homer (Passive Design Strategies, Samuelson)	Feb 19 - Simulation Workshop (Ibarra)	
5	Feb 22 Load Calculations (computer simulation)	Feb 24 Building Optimization Game I (fully conditioned building)	Special No. 9 House (Affordable Green Housing, Samuelson)		Ass 3 - Simulation Report I (Mar 3, Samuelson)
6	Mar 1 Daylight & Photometry	Mar 3 Electric Lighting	Omega Center (Towards Net Zero, Samuelson)		
7	Mar 8 Daylighting Design Principles	Mar 10 Daylight Simulations & Metrics, Pattern Guide (class from 10:00 AM to 1 PM in Stubbins)	Kaust (Solar Gain Control, Ibarra)	DIVA (Jakubiec)	Ass 4 - Daylighting (Mar 31, Ibarra)
8	Spring Recess				
9	Mar 22 Solar Hot Water and PV Discuss plans and costs of Harvard projects. (Samuelson)	Mar 24 Local Field Trip Visit Solar Hot Water and Photovoltaic Systems on Campus (Samuelson)	Manassas Park (Daylighting & Views Ibarra)		
10	Mar 29 Climate Analysis of the 3 rd Studio Exercise (Ibarra)	Mar 31 Natural Ventilation - Physical Principles & Manual Methods	Twelve West (On-site Energy Generation Ibarra)		
11	Apr 5 Natural Ventilation - Simulation Approaches	Apr 7 Building Optimization Game II (Naturally Ventilated Building)	Watsonville (Water Conservation, Samuelson)		Ass 5 - Simulation Report II (Apr 14, Ibarra)
12	Apr 12 HVAC I (M Herman Buro Happold)	Apr 14 HVAC II (M Herman Buro Happold)	Manitoba Hydro Place (Natural Ventilation Ibarra)		
13	Apr 19 Acoustics Physical Principles, Room Acoustics & Sound Attenuation	Apr 21 Acoustics -- Case Studies (C Rosenberg & B Markham, Acentech TBC)			
14	Apr 25 Life Cycle Assessments (J Ochsendorf MIT TBC)		Kroon Hall (LCA, Samuelson)		

SYLLABUS & SCHEDULE

Teachers

Maryann Thompson
Jay Wickersham

Description

This course, for students in the fourth semester of the M. Arch. I program, examines basic issues arising in contemporary architectural practice. The course challenges the students to examine critically a broad range of professional, political, business, and ethical problems that they are likely to face in practice. Each unit focuses on a case study that describes the actual experience of an architect, including several architects of national and international reputation. The subjects of the cases include: obtaining a commission, controlling construction costs, conflicts between the client and the community, the advantages and disadvantages of specialized practice, new forms of project delivery, monitoring a contractor's performance, working in another country, methods of collaboration, and the impacts of new technology. Three or four of the architects whose cases are studied visit the class as guest lecturers.

Each unit contains material to supplement the case study, exposing the student to related topics such as the roles of professional organizations, standard AIA contract forms, government regulation and design review, the economics of practice, architectural competitions, etc. Many of the units also have companion exercises that present an ethical dilemma for class discussion, centering on an architect's conflicting duties to clients, the art and craft of architecture, colleagues, and the public.

Each student chooses a category for a written research paper, from a prescribed list. The student selects a specific topic within the general category, does appropriate research and field work, and submits a ten page paper which he or she may be called upon to present to the class.

Readings

Rather than a purchased reader, all course materials are available at the Frances Loeb Library on Reserve and on the course website.

Requirements

Each week students are required to complete the reading assignments, attend and actively participate in class meetings, and submit a written 1-paragraph reading response to the TFs each Sunday by 8 PM, respecting the next day's readings. (The paragraph may respond to a question posed in the introductory essay to that day's materials, or critique some aspect of the readings, or pose a provocative new question.) Each student will complete a written research paper, and selected students will deliver oral presentations in class. There is a final exam at the end of the course.

Grading	Class Attendance and Weekly Reading Responses	10%
	Research Paper	40%
	Final Exam	50%

Additional credit will be given, at the discretion of the professors, to those students who make a significant contribution to class discussions, make a significant presentation of his or her term paper in class, and/or consistently pose provocative comments and questions to the reading assignments. Students may find it helpful to form small study groups, so they can collaborate in reviewing and discussing the materials and preparing for the final exam.

Schedule - Spring 2011

**1) Introduction
January 24**

A) Introduction to the course & research papers

[hand out research paper sign-up sheet]

B) Lecture / discussion: Overview of Architectural Profession in US

- 1-1 NCARB, "Architectural Organizations and the Practice of Architecture in the United States" – on line
- 1-2 NCARB, "Legislative Guidelines and Model Law" – on-line (read only the portion on Legislative Guidelines)
- 1-3 Robert W. Gordon, "Professionals and Professionalism"

[break; TFs sort and assign research paper categories]

C) Introduction to professional ethics; the AIA and NCARB ethical codes

- 1-4 NCARB, "Rules of Conduct"
- 1-5 AIA, "2007 Code of Ethics and Professional Conduct"

D) Ethics exercise: The Citicorp Building

- 1-6 Joe Morgenstern, "City Perils: The 59-Story Crisis," *The New Yorker* (29 May 1995): 45-53.
- 1-7 Eugene Kremer, "(Re)examining the Citicorp Case: ethical paragon or chimera?"
at: <http://journals.cambridge.org>.

**2) How to Get Work / Programming
January 31**

A) The client's perspective

Guest lecture: Timur Galen, Goldman Sachs

- 2-1 David Dunlop, "A New Goldman Sachs Headquarters Sneaks Into the Lower Manhattan Skyline," *New York Times* (August 24, 2008)
- 2-2 Paul Goldberger, "Shadow Building: The House that Goldman built," *The New Yorker* (May 17, 2010)

[break]

B) Lecture / discussion: The Architect Selection Process

[Maryann to discuss Foote School, the architect's perspective, with sample RFP's]

- 2-3 Thompson, Maryann, "Some Thoughts on RFQs, RFPs, and the Interview Process" (2009)

C) Case study / ethics exercise: Getting the Job

- 2-4 Victoria Beach & Carl Sapers, "How to Get Work: Haight's School in Windsor, VT"
- 2-5 Carl Sapers, "Ethical Boundaries"
- 2-6 Jay Wickersham, "A Different Viewpoint on Ethical Boundaries" (2009)

3) **Drawing Dreams**
February 7

A) Lecture / discussion: Building the Client Relationship - Programming, Scope, and Fee

3-1 Thompson, Maryann, "Programming"

B) Case study: Will Bruder's house in Phoenix, AZ

3-2 Beach, Victoria, "Drawing Dreams: Bruder's House in Phoenix, AZ"

3-3 Bruder, Will, "Programming Notes"

3-4 Sapers, Carl & Jay Wickersham, "The Architect's Responsibility Regarding Construction Costs"

3-5 AIA B101 Contract Form (2007 edition)

[break]

Video clips: *Mr. Blandings Builds his Dream House & The Fountainhead*

C) Ethics exercise: Fiduciary Duties of the Architect

3-6 Exercise: The Fiduciary Duties of the Architect

4) **Understanding Contracts**
February 14

A) Lecture / Introduction to contract and tort law

B) Role-playing exercise: Owner/Architect contract negotiation

[Readings to be reviewed and confirmed]

4-1 Sapers, Carl, "On Contracts"

4-2 Exercise on Contracts

4-3 Draft & Pay Contract AIA B101 2007 edition

4-4 Friendly Contract Cover Letter

4-5 Friendly Contract

4-6 Noble, Chris, "Negotiating Owner Architect Agreements"

[break]

C) Student report: Contracts and Laws

D) Ethics exercise: Competing Interests

4-7 Ethics exercise: Competing Interests

4-8 Surowieki, James, "The Talking Cure," *The New Yorker* (9 December 2002).

4-9 Murphy, Shelley, "Lahey Drug Favors," *Boston Globe* (9 November 2002).

February 21: No class – President's Day

5) **Who is the Client?**
February 28

A) Case study: Cobb's Hancock Tower in Boston

Guest speaker: Harry Cobb

- 5-1 Beach, Victoria, "Who's the Client? Cobb's Hancock Tower in Boston, MA" (1996)
- 5-2 Three Perspectives on the Hancock Building
- 5-3 Stratton, Arthur, Boston Globe Coverage, Nov - Dec 1967 (optional background on Hancock case study)
- 5-4 Jackson, Huson, "Architects's Role in Shaping His City: The Hancock Matter" (optional background on Hancock case study)

[break]

B) Student report: Public Design Review

C) Lecture / discussion: The Public Design Review Process, or, Who Speaks for the Public?

- 5-5 Wickersham, Jay, "Government Regulation of the Built Environment" (2009)
- 5-6 Cobb, Henry, "Ethics and Architecture"
- 5-7 Sapers, Carl, "The Morality of Design Choices"

6) **Changes in Project Delivery**
March 7

A) Different modes of project delivery:

Guest lecture by Chuck Thomsen, followed by panel discussion with Chuck, Jay, and Maryann

- 6-1 Thomsen, Charles, "Project Delivery Processes" (2006)
- 6-2 Noble, Christopher, "Where's Waldo?" (1995)
- 6-3 Sapers, Carl, "The Architect As Counselor" (1997)

[break]

B) Student report: Collaborators and Competitors

C) Case study / ethic exercise: Australian National Museum in Canberra

- 6-4 Wickersham, Jay, "Alliancing Case Study: The Collaborative Process to Design and Build the Australian National Museum" (2009).
- 6-5 Sudjic, Deyan, "Australia looks back in allegory at its inglorious past," *The Guardian* (2001).
- 6-6 Devine, Miranda, "Disclosed at last, the embedded messages that adorn museum," *Sydney Morning Herald* (2006).

No class – spring vacation
March 14

7) **Getting Quality**
March 21

A) Lecture / discussion: The Architect's Role During Construction

- 7-1 Sapers, Carl, "The Architect's Role in the Construction Phase" (2009)
- 7-2 AIA Excerpts: A201 General Conditions to Contract for Construction (2007 edition)

- 9-9 Bernstein, Fred, "Hi, Gorgeous, Haven't I Seen You Somewhere?" *New York Times* (2005)
9-10 Moral Rights Articles

10) **We're not in Kansas Anymore**
April 11

A) Case study: Richard Rogers's Office Complex in Berlin, Germany

- 10-1 Beach, Victoria, "East Meets Est: Rogers' Office Complex in Berlin, Germany"
10-2 Wickersham, Jay, "International Design Practice and Globalization"
10-3 Frampton, Kenneth, "Critical Regionalism"
10-4 Barton, "Berlin is Architecturally Lost" (Rogers interview, 1999 – optional)
10-5 Kramer, "Letter from Europe," *The New Yorker* (1999) - (optional)

B) Ethics Exercise: Globalization and Questionable Clients

- 10-6 Pogrebin, Robin, "My Client's the Dictator," *New York Times* (2008)

[Break]

C) Student report: Globalization of Design Practice

D) Architecture for the Under-served

Guest lecture: Michael Murphy, Mass Design Group

- 10-7 Shulman, Ken, "Social Design: Straight Out of School," *Metropolis* (January 2011)
10-8 [other readings TBD]

11) **The Impact of Technology on Practice**
April 18

A) Designers and builders: Gehry Partners, SHoP, and other emerging models

Guest lecture: Danielle Etzler

- 11-1 Changing the Way We Practice Part I
11-2 Goldberger, Paul, "Good Vibrations"
11-3 Changing the Way We Practice Part II
11-4 [other readings TBD]

B) Lecture / Discussion: The Implications of BIM

- 11-5 Wickersham, Jay, "Legal and Business Implications of Building Information Modeling (BIM) and Integrated Project Delivery (IPD)"
11-6 ENR Special Report on BIM (Nov. 2008)

[break]

C) Student report: Innovations in Information Technology

D) Ethics exercise: Claiming Credit

- 11-7 Ethics exercise: Claiming Credit

12) **Career Paths and Alternative Practice Models**
April 25

A) Shaping a Practice and a Career

Guest lecture: Mack Scogin and Merrill Elam

12-1 [Readings TBD]

B) After you graduate: Demystifying the IDP Process

Guest speaker: Rachel from Maryann's office to discuss IDP

C) Course wrap-up

Appendix 2
Architecture Faculty Resumes

Iñaki Ábalos, RIBA

Design Critic in Architecture and Urban Planning and Design

Courses Taught:

SPRING 2010 1318 VERTICAL SCAPES. (Verticalism and the integration of disciplines)
SPRING 2010 9206AUPD A Cartography of Sustainability

Education:

Doctor of Architecture, Escuela Técnica Superior de Arquitectura de Madrid (ETSAM) 1991
Escuela Técnica Superior de Arquitectura de Madrid (ETSAM) 1978

Teaching Experience:

guest professor at the Harvard University Graduate School of Design, 2010
Kenzo Tange Professor in Harvard University 2009
Chaired Professor, Architecture School of Madrid
Visiting Professor in Architectural Association (London)
Visiting Professor in EPFL (Lausana)
Visiting Professor in Columbia University (New York)
Visiting Professor in Princeton University (New Jersey)
Visiting Professor in Cornell University (Ithaca)

Professional Experience:

Founding member of Ábalos+Sentkiewicz arquitectos (2007-present)
Director of the Laboratorio de Técnicas y Paisajes Contemporáneos, Madrid, (since 2002)
Founding member of Ábalos&Herreros (1984-2006)
Scientific committee of the Study Center of the Canadian Centre for Architecture (CCA), Montreal (since 2005)
Management board of the Barcelona Institute of Architecture (since 2008)

Selected Publications

Le Corbusier. Rascacielos (Ayuntamiento de Madrid, 1988)
Tower and office (The MIT Press, Cambridge [Mass.], 2003)
Natural-artificial (ExitLMI, Madrid, 1999), with Juan Herreros
La Buena Vida (Editorial Gustavo Gili, Barcelona, 2000) ("The Good Life", GG, 2001, translation to the English, "Boa Life", GG, 2002, translation to the Portuguese)
Atlas pintoresco (volume I, GG, 2005 and volume II, GG, 2008) (Editorial Gustavo Gili, Barcelona, 2005 and 2007)
Alejandro de la Sota (Fundación Caja de Arquitectos, Barcelona, 2009) with Josep Llinàs and Moisés Puente.
Campos de Batalla" (COAC publications, 2005)
Cuatro Observatorios de la Energía" (COA, 2007)
editor *Naturaleza y artefacto* (Editorial Gustavo Gili, Barcelona, 2009).

Professional Memberships

Royal Institute of British Architects

Martin Bechthold

Professor of Architectural Technology

Courses Taught

SPRING 2011	6202	Analysis and Design of Building Structures II
FALL 2010	6317	CAD/CAM: Introduction to applications in Architecture
SPRING 2010	1320	TRACES
SPRING 2010	6415	Construction Automation
FALL 2009	6201	Analysis and Design of Building Structures I

Education

2001 Harvard University Graduate School of Design, Doctor of Design, Architecture
1991 Rheinisch-Westfälisch-Technische, Hochschule (RWTH) Aachen, Germany, Diplom-Ingenieur Architecture

Teaching Experience

2008 - Professor of Architectural Technology, Harvard University Graduate School of Design
2004 - 2008 Associate Professor of Architecture, Harvard University Graduate School of Design
2004-2005 Baumer Visiting Professor, Ohio State University Mar
2001 - 2003 Assistant Professor of Architectural Technology, Harvard University Graduate School of Design
2000 - 2001 Instructor in Architecture, Harvard University Graduate School of Design Fall

Professional Experience

Private practice, 1992-present

Recent Research

2011-ongoing Low Carbon Envelopes The research develops a framework for the design-to production process of sustainable products for high-performance building envelopes. Sponsor: Miniwiz.
2010 - ongoing Ceramic Futures This Project studies innovative strategies for customization in the ceramics industry. Sponsor: ASCER..
2010 – present Design Robotics Group: Founder and director of interdisciplinary research group at Harvard's Graduate School of Design.
2009 - 2011 Low2No - Case Study This Project researches the emerging role of a new type of design competition in shaping a broad national agenda in sustainable design and development. Sponsor: Sitra.
2007-2009 Light and Structures - Marble Fabrications Sponsored by the International Masonry Institute this project focuses on the use of robotic waterjet technology in the production of innovative transparent marble structures
2007-present Construction Robotics Current research project focuses on the use of industrial robots in the fabrication of architectural components. One of the first test-cases will be the production of a structural stone screen produced using a robotic waterjet cutter and other CNC machines.

Selected Publications

"Performatism or Performance-Based Design?" Book Chapter in: Grobmann, Y., and Neuman, E.: Performatism: Form and Performance in Digital Architecture. London: Routledge. 2011
M. Bechthold et. al.: "Integrated Environmental Design and Robotic Fabrication Workflow for Ceramic Shading Systems" in.: Proceedings of 28th International Symposium on Automation and Robotics in Construction (ISARC2011). Seoul. 2011
Mayer M, Bechthold M, Ibanez M, "Fabrication of Free-Form Sandwich Panels Using A Multi-Axis Water Jet Cutter", in: Ravichandran G (Ed.), Proceedings of the 9th International Conference on Sandwich Structures, California Institute of Technology. 2010
"On Shells and Blobs" reprint in: Corser, R.: " Fabricating Architecture: Selected Readings in Digital Design and Manufacturing." Princeton Architectural Press. 2010
"The Return of the Future" in Oxman, R. (Ed): "New Structuralism: Design, Engineering and Architectural Technologies". AD 04/2010
"A Continuous Challenge in Custom Construction" in: Girmscheid, G., Scheublin, F. (Ed.): New Perspective in Industrialization in Construction - A State-of-the-Art Report. pp. 53 - 66. ETH Zurich. 2010
"More Bang for the Bucks" in: GAM 06. pp 128-139. No. 06. 2009
"Innovative Surface Structures". London: Taylor & Francis. Abingdon, 2008
"A Folded Arch – Experiments in Fiber-Reinforced Concrete". IASS Symposium December 2007: Structural Architecture – Towards the future looking at the past. Venice, Italy. 2007
"Teaching CAD/CAM – Pedagogy, Methods, Results". In: Kieferle, J, Ehlers, K. (Ed.) Predicting the Future. Proceedings, eCAADe 2007, Frankfurt, Germany
Structures. 6th edition, with D. Schodek. Upper River Saddle: Prentice Hall. 2007
"Surface Structures in the Digital Age: Studies in Ferrocement" in: Lloyd-Thomas, K. Material Matters, London, Taylor & Francis. 2006

Professional Memberships

2003 – present International Association of Shells and Spatial Structures (IASS)
2000 - 2005 Society of Manufacturing Engineers, USA
1994 - Chamber of Architects of Northrhine-Westphalia, Germany

Eve Blau

Adjunct Professor of the History of Urban Form

Courses Taught

SPRING 2011	9107	Baku: Oil City
FALL 2010	4501	Proseminar in History, Theory and Urban Design
FALL 2010	4205M1	Buildings, Texts, and Contexts: Modernity and Architecture 1900-1945
SPRING 2010	4401	Transparency
FALL 2009	4130	Scale: City, Object, Field

Education

1978	Yale University, Ph.D. (History of Architecture)
1974	Yale University, M.A. (History of Architecture)
1972	University of York, England, B.A. Hons. (English)
1965-69	Ecole d'Humanité, Goldern, Switzerland

Teaching Experience

2008-	Director of Master in Architecture Degree Programs, Harvard University Graduate School of Design
2004-	Adjunct Professor of Architectural History, Harvard University Graduate School of Design
2000-03	Lecturer, Department of Architecture, Harvard University, Graduate School of Design
2003	Lecturer, Princeton University, School of Architecture
2000	Lecturer, Yale University, School of Architecture
1995	Robert Sterling Clark Visiting Professor of Art History, Williams College, Graduate Program in the History of Art
1994	Lecturer, Harvard University, Graduate School of Design, Department of Urban Design
1990	Lecturer, Harvard University, Graduate School of Design, Department of Architecture

Professional Experience

1984-2001	Curator of Exhibitions and Publications (Adjunct, 1990-2001) Canadian Centre for Architecture, Montreal Head, Department of Exhibitions and Publications, (1984-1990)
1978	Arcade Gallery, London, England, Assistant to Dr. Paul Wengraf

Publications: Books and Edited Volumes:

2009	Architecture in the Time of the Vietnam War: Protest, Politics and Pedagogy. Yale University Press [edited volume]
2007	Project Zagreb: Transition as Condition, Strategy, Practice, (with Ivan Rupnik), Barcelona and NY: Actar
2003	Urban Form. Städtebau in der postfordistischen Gesellschaft. Co-editor (with Renate Banik-Schweitzer). Vienna: Löcker Verlag
2001	Architecture or Revolution: Charles Moore and Yale in the late 1960s, Exhibition Catalogue, Yale University School of Architecture
1999	The Architecture of Red Vienna, 1919-1934, The MIT Press.
1999	Shaping the Great City: Modern Architecture in Central Europe, 1890-1937, co-editor (with Monika Platzer). Prestel Verlag
1999	Mythos Grosstadt. Architektur und Stadtbaukunst in Zentraleuropa 1890-1937, co-editor (with Monika Platzer). Prestel Verlag. [German ed.]
2000	L'Idée de la grande ville: L'architecture moderne d'europe centrale, 1890-1937, co-editor (with Monika Platzer). Prestel Verlag. [French ed.]
1999	Architectural History 1999/2000: A Special Issue of JSAH. Editor. Journal of the Society of Architectural Historians, vol. 58, no. 3 (September 1999). A special double issue on the discipline of architectural history at the turn of the century/millennium.
1997	Architecture and Cubism, co-editor (with Nancy J. Troy). The MIT Press
1989	Architecture and Its Image: Four Centuries of Architectural Representation, Eve Blau and Edward Kaufman, editors. Canadian Centre for Architecture
1989	L'architecture et son image: Quatre siècles de représentation architecturale, co-editor (with Edward Kaufman). CCA/Editions du Méridien, [French ed.]
1982	Ruskinian Gothic: The Architecture of Deane and Woodward, 1845-1861. Princeton: Princeton University Press

Publications: Articles, Essays, Reviews:

2008	Tensions in Transparency: The Dialectical Logic of SANAA's Architecture, Harvard Design Magazine, Summer/Fall 2008
2008	Supranational Principle as Urban Model: Otto Wagners Grostadt and City Making in Central Europe in Histoire de l'art du XIXe siècle (1848-1914), bilans et perspectives (colloque, Paris, 2007), Paris.
2008	L'Architecture et l'urbanisme des villes d'Europe central durant la première moitié du XXe siècle, Perspective 2008-3 [Paris 9/08]
2008	The Multiple Logics of the 21st Century Urban Campus: Some Thoughts on the Relevance of American Models and Experience, <i>Covijek i Prostor (Man in Space)</i> , Zagreb (September 2008) : 57-61; 71-73.
2007	Transparency and the Irreconcilable Contradictions of Modernity, <i>PRAXIS 9</i> (2007): 50-59.
2007	Limites territoriales/Spatial Boundaries, <i>Repenser les limites: l'architecture travers l'espace, le temps et les disciplines / Changing Boundaries: Architectural History in Transition</i> , Paris: Institut National d'Histoire de l'AR

Preston Scott Cohen

Gerald M. McCue Professor in Architecture and Chair of the Department of Architecture

Courses Taught:

SPRING 2011 1315 Type and Topography
FALL 2010 1101 First Semester Core: Introduction to Design and Visual Studies in Architecture
SPRING 2010 1316 Foggy Architecture
FALL 2009 1101 First Semester Core: Introduction to Design and Visual Studies in Architecture
FALL 2009 2102M2 Projective Representation in Architecture

Education:

Harvard University, Graduate School of Design, 1985 Master of Architecture
Rhode Island School of Design, 1983 Bachelor of Architecture, 1982 Bachelor of Fine Arts

Teaching Experience:

2008- Harvard University Graduate School of Design, Chair of the Department of Architecture
2003- Harvard University Graduate School of Design, Gerald M. McCue Professor of Architecture
2003-2008 Harvard University Graduate School of Design, Director of the Master of Architecture Degree Programs
2002-2003 Harvard University Graduate School of Design, Professor of Architecture
1995-2001 Harvard University Graduate School of Design, Associate Professor of Architecture
1992-95 Harvard University Graduate School of Design, Assistant Professor of Architecture
1989-92 Harvard University Graduate School of Design, Design Critic in Architecture
2004 University of Toronto, Frank Gehry International Visiting Chair
2002 University of California Los Angeles, Perloff Visiting Professor
1997 Princeton University School of Architecture, 1997 Visiting Associate Professor of Architecture
1993-98 Rhode Island School of Design, European Honors Program, Visiting Faculty, Honors Summer Program, Rome
1989 Ohio State University, Adjunct Assistant Professor of Architecture

Professional Experience:

2004- Preston Scott Cohen, Inc., Cambridge, MA
1988-89 Prentice and Chan, Ohlhausen Architects, New York, NY
1986-87 Hardy Holzman Pfeiffer Associates, New York, NY
1984 Peter Eisenman, Architect, New York, NY
1980 Albert Ledner, Architect, New Orleans, LA
1979 Kinney and Stone, Architects, Austin, TX
1978 Contacts Consultants and Architects, Austin, TX

Selected Publications:

Forthcoming *Amir Building, Tel Aviv Museum of Art* (forthcoming, 2012)
The Return Of Nature, co-authored and edited with Erika Naginski (forthcoming, Routledge 2012)
2004 "Intersection in the Architecture of Rafael Moneo", *Prototipo*, Lisbon, Portugal
Silvetti's Audiences", *Jorge Silvetti, Lectures at Harvard*, Harvard GSD
"Circulatory Anomalies", *OZ Journal of Architecture*
2003 "Tel Aviv Museum of Art", *32 New York Beijing*
"Geometric Sublimation", *The Good, the Bad and the Beautiful*, Sylvia Lavin and Helene Furjan, Editors
The Synagogue and the Architect", in *Flemington Jewish Community Center, National Design Competition*,
Phyllis Lerner, editor, 2002.
2002-05 *Permutations of Descriptive Geometry*, (forthcoming textbook)
2002 "Casa Torus", *Via Arquitectura*, Colegio Oficial de Arquitectos de la Comunidad Valenciana, May 2002
2001 "Bona Fide Modernity", (Scott Cohen and Robert Levit), *Assemblage* 41
"Toroidal Architecture", *Contemporary Design Techniques, Architectural Design*, London
"Temporary MoMA, Goodman House, Museum of Art and Technology", *Architecture and Urbanism (A&U)*, May
2001
Contested Symmetries and Other Predicaments in Architecture, Princeton Architectural Press
"Regular Anomalies", *Newsline*, Vol.13, No.1, Columbia University
2000 "The Tubular Embrasure at the Sacristy of San Carlo ai Catinari in Rome", *AA Files*, London, June 2000
RA Revista de Arquitectura, Pamplona, Spain, Fall 2000
"Terminal Lines", *Architecture and Urbanism (A&U)*, Tokyo, Feb. 2000
"Torus House", *Global Architecture*, GA Houses Project 2000, Tokyo
1999 "Torus House", *Arch+* 148, Berlin, October 1999
1998 "The Anamorphic Imperative", *RISD Works*
1996 "Stereotomic Permutations", *Architectural Design*, Spring 1996
Appendx 3, Spring 1996

Felipe Correa

Assistant Professor of Urban Design, Department of Urban Planning & Design

Courses Taught:

SPRING 2011 1202 Fourth Semester Core: Architectural Design
SPRING 2010 1202 Fourth Semester Core: Architectural Design

Education:

Master of Architecture and Urban Design, Harvard University Graduate School of Design, Cambridge; June 2003
Bachelor of Architecture, Tulane University, New Orleans; May 2000

Teaching Experience:

2008- Harvard University Graduate School of Design, Assistant Professor in Urban Design
2003-08 Harvard University Graduate School of Design, Design Critic in Urban Design
2005 Harvard University Graduate School of Design, Career Discovery Program, Principal Instructor in Urban Planning and Design
2002 Universidad San Francisco de Quito, School of Architecture, Studio Instructor and Series Coordinator

Professional Experience:

Somatic Collaborative, Cambridge, July 2003 present
Advisor, Commission de la Biental Panamericana de Quito, Quito, Ecuador; 2004 to the present
Member, UP Editorial Board, Universidad de Palermo, Buenos Aires, Argentina; Spring 2006 – present

Selected Publications

2007 Correa, Felipe; *Deccan Traverses: The making of Bangalores Terrain* [Book Review], in *Harvard Design Magazine Online*, Issue #26, Summer 2007
Correa, Felipe with Joan Busquets; *Quito: A Flatbed Site as an Agent for a New Centrality*; Harvard Design School, 2007.
Correa, Felipe ; *City in Suspension: New Orleans and the Construction of Ground*; in *Architectural Design*, march 2007; edited by Michael Spens
2006 Correa, Felipe with Joan Busquets; *Cities 10 Lines: a New Lens for the Urbanistic Project*; Nicolodi Editore, 2006
2005 Correa, Felipe with Joan Busquets; *New Orleans, Strategies for a City in Soft Land*; Harvard Design School, 2005.
Correa, Felipe with Rodolfo Machado; *Provoking a New Form of Urbanity: Rethinking the Corvin Promenade*, Budapest; Harvard Design School, 2005
2003 Correa, Felipe; Defensive Urbanisms Research Series
Iss. 01 - *Negotiations between Topography and Human Settlement in Latitude Zero*; Cambridge; Spring 2003

Selected Research:

Scarcity: Bipolar Urbanisms in the Sonoran Desert, Graham Foundation Grant for Research Development, Spring 2008
Quito, a Flatbed Site as an Agent for a New Centrality, Corporacion de Salud Ambiental de Quito, Research Grant and Seminar Funding, Fundacion Vida Para Quito, Fall 2005
New Orleans; Strategies for a City in Soft Land Research Project in association with Joan Busquets, Harvard Graduate School of Design, Fall 2004 / Spring 2005. Sponsored by Tulane University Center for Bioenvironmental Studies
Tinker Research Travel Grant awarded by the David Rockefeller Center for Latin American Studies; Harvard University, Cambridge; Fall 2002
Defensive Urbanisms Research Series - Seminar 1: *Defensive Urbanisms-01 Negotiations between Topography and Human Settlement in Latitude Zero*; Quito-Ecuador; Summer 2002

Danielle Etzler

Assistant Professor of Architecture

Courses Taught:

SPRING 2011	1102	Second Semester Core: Introduction to Design and Visual Studies in Architecture
FALL 2010	1201	Third Semester Core: Architectural Design
SPRING 2010	1102	Second Semester Core: Introduction to Design and Visual Studies in Architecture
FALL 2010	6111M1	Materials and Construction: An Introduction to Techniques, Composition and Strategies
FALL 2009	1101	First Semester Core: Introduction to Design and Visual Studies in Architecture

Education:

Columbia University, Graduate School of Architecture, Planning, and Preservation, Master of Architecture, 1995
Bennington College, Bennington, Vermont, Bachelor of Arts, major in Painting 1986
Vermont Studio School, Johnson Vermont, Residency in Painting, 1986

Teaching Experience:

Harvard University Graduate School of Design Fall 2009-Present, Assistant Professor in Architecture
Harvard University Graduate School of Design Spring 2009, Design Critic in Architecture
Bennington College Spring 2004, Visiting Professor Visual Arts Department
Columbia University 1993-1995, Graduate School of Architecture, Planning, and Preservation, Teaching Assistant
Building Technologies Department
Bennington College Summer 1986, July Program Life Drawing Instructor

Professional Experience:

SHoP Architects, PC New York, NY, Associate Principal 2004-2010
Liederbach and Graham Architects Chicago, IL, Project manager, 2003-2004
Hammond Beeby and Babka, Inc. Chicago, IL, Project Manager, 1998-2002
R. A. Heintges Architects Consultants New York, NY, Project Manager, 1995-1997
Ryall Porter Architects New York, NY 1994-1995
Margaret Jenkins Dance Company San Francisco, CA 1990-1992, Company Manager
ODC/San Francisco San Francisco, CA 1990-1992, Production Manager
New Performance Gallery San Francisco, CA 1988-1990, Technical Director
Lighting Designer San Francisco, CA 1988-1992

Licenses/Registration:

NCARB Certificate #59786
State of Illinois License #001-018123
State of New York License # 030778-1
Certificate in Mediation, 2009, Friends Conflict Resolution Center, Philadelphia, Pennsylvania

Selected Publications:

Theories of Practice; Five Positions in Contemporary Swiss Architecture, Harvard University Graduate School of Design 2009
Abstract: Columbia Architecture, Planning, and Preservation 1999 & 1995
INDEX Architecture: A Columbia Architecture Book 2003

Andreas Georgoulas

Lecturer in Architecture

Courses Taught:

SPRING 2011	6328	In Search of Design through Engineers
SPRING 2011	6339	Towards a Sustainable Infrastructure
FALL 2010	5333	Sustainable New Cities
FALL 2010	7411	Design and Development: from Concept to Implementation
SPRING 2010	6328	In Search of Design through Engineers
SPRING 2010	9206A02	Towards A Sustainable Infrastructure
FALL 2009	7411	Design and Development: from Concept to Implementation
FALL 2009	7440	Leading the Design Firm

Education:

Harvard University, Graduate School of Design 2008, Doctor of Design. Thesis topic: *"Designing in Uncertainty: The I-SASP model for Tactical and Innovative Risk Management for the Hi-Performing Professional Practice."*

Harvard University, Graduate School of Design 2005, Master in Design Studies: Real Estate Development and Project Management

National Technical University Of Athens, School of Architecture 2003, Diploma in Architecture Engineering: Professional Degree Program.

Universita Degli Studi Di Roma La Sapienza, School of Architecture 2001, Erasmus scholar in Architecture

Architectural Association, School of Architecture 1999, Certificate in Sustainable Environmental Design. Thesis project: Sustainable Environmental Design Solutions for the Public Realm.

Teaching Experience:

Lecturer, Harvard Graduate School of Design 2008 - Present

Teaching Fellow, Harvard Graduate School of Design 2006 - 2008

Teaching Assistant, Harvard Graduate School of Design 2004 - 2006

Professional Experience:

DHA City Karachi, Defense Housing Authority, Pakistan 2010 – 2011: *Consultant to Master Planning JV (Osmani Ltd, RMJM, Doxiadis & Associates)*

6th Economic City Development Project in the Kingdom of Saudi Arabia 2007 – 2008: *Consultant to project sponsor/ owner*

General Services Administration, U.S.A. 2005 – 2008: *Consultant*

UniCredit Markets and Investment Banking, Munich, Germany summer 2007: *Associate, Infrastructure Group*

OBERMEYER HELLAS Ltd, Athens, Greece 2003 – 2004: *Project Manager*

HOCHTIEF GmbH, New Athens International Airport, Greece 1998 – 2000: *Construction Site Engineer*

Selected Publications:

Sustainable Infrastructure. Spiro Pollalis, Andreas Georgoulas, Stephen Ramos, Daniel Schodek, (editors). Routledge (2012 print)

"Sustainable and Environmental Assessment of Infrastructure Projects." Book chapter in *Sustainable Infrastructure*. Spiro Pollalis, Andreas Georgoulas, Stephen Ramos, Daniel Schodek, (editors). Routledge (2012 print)

Integration of Business and Design for Sustainable Development. Robert Eccles, Amy Edmondson, Spiro Pollalis, and Andreas Georgoulas, Harvard Graduate School of Design: Design and Technology Report Series (In preparation) 2011

In Search of Design through Engineers. Hanif Kara and Andreas Georgoulas Harvard Graduate School of Design (In preparation) 2011

Assessment Methodologies for Sustainable New Cities. 2nd EnviroCities conference on Green Cities, Dubai, UAE. November 2010

How to Improve the Quality of Human Life and Technology in Future City. Green Growth for Generation with Information Technology, 2010 Ubiquitous Eco City, Incheon Free Economic Zone, Korea. September 2010

The Zofnass System for Assessing Sustainable Infrastructure Projects. Infrastructure Sustainability and Design Conference, Harvard University, Cambridge, MA. April 2010

Towards the Development of a Rating System for Sustainable Infrastructure: a Checklist or a Decision-Making Tool? Cities of the Future Conference, Boston, MA. March 2010

Allocating Risks and Rewards in Sustainable Redevelopment of Brownfields. Environmental Industry Summit, San Diego, CA. March 2010

Assessing Sustainable Infrastructure Projects. 20th Annual EFCG CEO Conference for E/C firms, New York, NY. October 2009

Design Firm Economics at Market Recessions and Issues on Research and Education in Integrated Design. 2nd Annual Design Firm Leadership Conference, Harvard University, Cambridge, MA. September 2009

The Alliancing Contracting Method. 19th Annual EFCG CEO Conference for E/C firms, New York, NY. October 2008

Professional Memberships:

Harvard Hellenic Society; Urban Land Institute; Technical Chamber of Greece; Hellenic Association of Architects

K. Michael Hays

Eliot Noyes Professor of Architectural Theory

Courses Taught:

SPRING 2011	3435	The Architectural Imagination (Graduate Seminar in General Education)
SPRING 2011	4418	Beginnings of Architecture
FALL 2010	3436	Critical Preservation Practices
FALL 2010	4201M1	Buildings, Texts, and Contexts: Classicism: From Theory to History
FALL 2010	4202M2	Buildings, Texts, and Contexts: Architecture and Theory
SPRING 2010	3305	The Architectural Imaginary: Experimental Architecture of the 1970s
FALL 2009	4201M1	Buildings, Texts, and Contexts: Classicism: From Theory to History
FALL 2009	4202M2	Buildings, Texts, and Contexts: Architecture and Theory
FALL 2009	4501	Proseminar in History, Theory and Urban Design

Education:

1990 PhD in the Field of Architecture, Art, and Environmental Studies Massachusetts Institute of Technology. Major field: European modernism; minor field: critical theory

1979 MArch in Advanced Studies in History and Theory of Architecture, Massachusetts Institute of Technology

1976 BArch, Georgia Institute of Technology

Teaching Experience:

2002- Eliot Noyes Professor of Architectural Theory, Harvard University GSD

2008- Co-Director of Doctoral Programs, Harvard University Graduate School of Design

1995-2005 Director, Advanced Studies Programs, Harvard University GSD

1995-2001 Professor of Architectural Theory, Harvard University GSD

1990-1995 Associate Professor of Architecture, Harvard University GSD

1988-1990 Assistant Professor of Architecture, Harvard University GSD

1992 Visiting Lecturer in Architecture, Columbia University

1992 Visiting Lecturer in Architecture, Cornell University

1986-1988 Lecturer in History and Theory of Architecture, Coordinator, Undergraduate Program in the History and Theory of Architecture, Princeton University

1986-1988 Lecturer in History and Theory of Architecture, Princeton University

1980-1986 Assistant Professor of History and Architecture, Rhode Island School of Design

1986 Visiting Lecturer in Architecture, Massachusetts Institute of Technology

1986 Visiting Critic in Architecture, Cornell University

1986 Visiting Critic in Architecture, University of Miami

1976-1977 Instructor in Architecture, Georgia Institute of Technology

Professional Experience:

1980-1988 Consultant in architecture for design firms including: Machado and Silvetti Associates, Inc., Boston; Tippetts, Abbott, McCarthy, Stratton, Boston; Schwartz/Silver Architects, Boston; Koetter Kim and Associates, Boston; Charles Hilgenhurst Associates, Boston; Anthony Ames and Kemp Mooney, Atlanta

Licenses/Registration:

Registered Architect in the Commonwealth of Massachusetts

Selected Publications:

2009 *Architecture's Desire: Reading the Late Avant-Garde*, (Cambridge: MIT Press)

2008 *Buckminster Fuller: Starting with the Universe*, with Dana A. Miller (New Haven: Yale University Press)

2003 *Scanning: The Aberrant Architectures of Diller + Scofidio*, ed. Aaron Betsky and K. Michael Hays (New York: Whitney Museum of American Art)

2002 *Sanctuaries, the Last Works of John Hejduk* (New York: Whitney Museum of American Art, 2002)

1985-2001 Founder and Editor of *Assemblage*, A Critical Journal of Architecture and Design Culture, published by the MIT Press

1998 *Architecture Theory since 1968*, ed.. Cambridge: MIT Press.

Oppositions Reader, ed.. New York: Princeton Architectural Press.

1996 *Hejduk's Chronotope* ed. New York: Princeton Architectural Press.

1994 *Unprecedented Realism: The Architecture of Machado and Silvetti*. New York: Princeton Architectural Press.

1992 *Modernism and the Posthumanist Subject*. Cambridge: MIT Press.

Selected Articles:

2003 "The Autonomy Effect," in *Bernard Tschumi*, ed. Giovanni Damiani (New York: Rizzoli)

2002 "Foreward," in *Jean Baudrillard and Jean Nouvel, The Singular Objects of Architecture* (Minneapolis: University of Minnesota Press). 2nd ed. 2005.

2001 "The Mies Effect," in *Mies in America*, ed. Phyllis Lambert (Montreal: CCA; New York: Whitney Museum of American Art)

"Prolegomena Linking the Advanced Architecture of the Present to that of the 1970s through Ideologies of Media, the Experience of Cities in Transition, and the Ongoing Effects of Reification," *Perspecta* 32 (MIT Press)

John Hong

Adjunct Associate Professor of Architecture

Courses Taught:

SPRING 2010 1202 Fourth Semester Core: Architectural Design
FALL 2009 1201 Third Semester Core: Architectural Design
FALL 2009 9206XDEP New Trajectories: Convergent Flux, Korea

Education:

1993-96 Harvard Graduate School of Design, Master in Architecture with Distinction
1987-91 University of Virginia, Bachelor of Science in Architecture with Honors

Teaching Experience:

2007+ Adjunct Associate Professor, Harvard Graduate School of Design
2006-07 Design Critic in Architecture, Harvard Graduate School of Design
2004-06 Lecturer, Northeastern University

Professional Experience:

2003+ SsD, Co-principal
1997-01 Project : Architecture PC, design principal
1990-95 Leers Weinzapfel Associates, designer
William Rawn Associates, designer
Polshek Partnership, designer
Tod Williams Billie Tsien Associates, intern

Licenses/Registration:

Registered in New York, Massachusetts, Rhode Island, and Virginia, LEED accredited, NCARB certified

Selected Publications:

2012 *Convergent Flux: Contemporary Architecture in Korea*. John Hong and Jinhee Park, authors, Birkhäuser GmbH, Basel, 2012
Ecological Urban Architecture. 'Interdependent Urbanism,' John Hong, Birkhäuser GmbH, Basel, 2012
Dwell Magazine. 'Clover Food Lab,' Aaron Britt, January 2012
Dwell Magazine. 'Braver House,' Aaron Britt, February 2012

2011 *Space Magazine*: White Block Gallery, Lee Sang-leem, publisher and editor, Seoul, Korea, June 2011
21st Century Sustainable Homes. Mark Cleary, The Images Publishing Group Pty Ltd., Victoria, Australia, 2011

2010 *The New Modern House: Redefining Functionalism*. Jonathan Bell & Ellie Stathaki, Lawrence King Publishing
Rematerial: From Waste to Architecture, Alejandro Bahamon and Maria Camila Sanjines, W. W. Norton & Company.
Harvard Design Magazine, 'Idea Driven Practices: What 8 Young GSD Designers Do' HDM 32: Spring/Summer 2010

2009 *The Boston Globe*, 'Thinking Green, Going Global,' Robert Campbell, 14 March
AV Magazine: Proyectos, Barcelona, Spain
Space Craft 2: Fleeting Architecture, Klanten, Feireiss, and Meyer eds

2008 *Young Architects 9: Proof*, Princeton Architectural Press
The Architect's Newspaper, 'Ordos or Ardor', New York, 19 November 2008
Modern Shoestring, Susanna Serifman, Monicelli Press

2007 *Contemporary Design in Detail: Sustainable Environments*, Yenna Chan, Rockport Publishers
ArchitectureBoston, 'Re-Imagining City Hall,' September 2007
The New Yorker, 'Salvage Artists,' Paul Goldberger, 19 March 2007

2006 *Dwell Magazine*, 'Houses That we Love,' Shonquis Moreno, November 2006
Architectural Record, 'Archrecord 2: For and About the Emerging Architect,' Ingrid Spencer, Sept 2006
Metropolis Magazine, 'Big Dig House,' Ken Shulman, June
PBS special, 'Design: e2,' airs June-July
The Boston Globe, 'The House the Central Artery Built,' Robert Campbell, March

2005 *Metropolis Magazine*, 'The Road to Innovation,' Laurie Manfra, January
ArchitectureBoston, 'Year in Review,' January
Boston Globe Magazine, '2050 Future Shock,' Doug Belkin, January

2004 *Dwell Magazine*, 'Beantown Dream,' Virginia Gardiner, October
The Boston Globe, 'He Could Call It His Big Digs,' Anthony Flint, April
Metropolis Magazine, 'Next Generation Winner,' Alex Marshall, June

Eric Höweler, AIA LEED AP

Assistant Professor of Architecture

Courses Taught:

SPRING 2011 1202 Fourth Semester Core: Architectural Design
SPRING 2011 6203M4 Materials, Constructions, Processes: City of Steel
FALL 2010 1201 Third Semester Core: Architectural Design
SPRING 2010 1102 Second Semester Core: Introduction to Design and Visual Studies in Architecture
SPRING 2010 6203M4 Materials, Constructions, Processes
FALL 2009 1101 First Semester Core: Introduction to Design and Visual Studies in Architecture

Education:

Master of Architecture 1995, Cornell University, College of Architecture, Art and Planning
Bachelor of Architecture 1994, Cornell University, College of Architecture, Art and Planning

Teaching Experience:

Assistant Professor in Architecture, Harvard Graduate School of Design, 2011- present
Design Critic in Architecture, Harvard Graduate School of Design 2008- 2011
Lecturer, Massachusetts Institute of Technology, 2006-2007
Design Critic in Architecture, Harvard Graduate School of Design, Fall 2005
Adjunct Professor, City College New York, 2005
Visiting Professor, Berlin Summer Program, University of Toronto, Summers 2003 & 2005
Visiting Professor, Hong Kong Summer Program, University of Toronto, Summer 2002
Teaching Assistant (Design Studio), Cornell University, 1995

Professional Experience:

Höweler + Yoon Architecture LLP/ MY Studio, Boston MA, 2005- present
Diller + Scofidio, New York, New York, 2002- 2005, Senior Designer
Kohn Pedersen Fox, Associates PC, New York, New York, 1995-2002; *Associate Principal*

Licenses/Registration:

Registered Architect, NY, DC, NJ, VA, MA, RI
NCARB
LEED AP

Selected Publications, Books:

Platform 4, Harvard Graduate School of Design, Actar, 2011.
Expanded Practice: Projects by Howeler + Yoon Architecture / MY Studio, Princeton Architectural Press, New York, Fall 2009.
Public Works, Unsolicited Small Projects for the Big Dig, MAP Book, Hong Kong, Spring 2009.
Skyscraper, Vertical Now, Rizzoli Universe Publications, New York, 2003.
1,001 Skyscrapers, co-author J. Meejin Yoon, Princeton Architectural Press, New York 2000.

Selected Publications, Articles:

Book Review of *Urban Towers Handbook* by Eric Firley and Julie Gimbal, in *Urban Morphology*, Hong Kong, 2011.
Book Review of "The Articulate Surface" by Ben Pell, *Constructs Yale Architecture*, 2010.
"Verify in Field," *The Real, Perspecta4*, MIT Press, Spring 2010.
"Vertical Landscape as a Performative Surface," in *Thresholds 36*, Cambridge 2009.
"Concrete to Cosmetics," in *Heroic* at Pink Comma Gallery, Boston, September 2009.
"Form Follows Daylight, One Bryant Park," *Architectural Lighting*, March 2009.
"Public Works: Four Projects in Play," *In.Form*, Nebraska, 2007.
"Solid States: Jürgen Mayer H's Architectural Atmospheric," Introduction to Exhibition Catalogue, Staatliche Museen zu Berlin, 2005
"18 Degrees Inside, Hong Kong Thermal Space," *Hong Kong Lab 2*, Map Office Publications, Hong Kong, 2005
"Negotiating Place, Kohn Pedersen Fox's Global Practice," *Kohn Pedersen Fox*, Master Architects Series, Images Publications, Sydney, 2005

Professional Memberships:

American Institute of Architects

Christopher C. Hoxie
Lecturer in Architecture

Courses Taught:

SPRING 2011	2405	Immersive Environments II
FALL 2010	2107M2	Digital Media II: Developing Dynamic Content through Still and Moving Image
FALL 2010	2319	Immersive Environments
SPRING 2010	2405	Immersive Environments II
FALL 2009	2319	Immersive Environments

Education:

Harvard University Graduate School of Design, Cambridge, MA, Master of Architecture, 2007
Bennington College, Bennington, VT, BA, Visual Arts, Architecture / Sculpture, 1992

Teaching Experience:

Lecturer, Graduate School of Design, Harvard University, 2008-2009
Visiting Instructor, University of Pennsylvania School of Design, Department of Landscape Architecture, 2003

Professional Experience:

Principal, Chris Hoxie Design LLC, Brooklyn, NY, 2007 - present
Principal, BHCH LLC, Brooklyn, NY, 2004 - 2007
Designer and Technology Consultant, Mack Scogin Merrill Elam Architects, 2003 – 2007
Designer and Technology Consultant, Preston Scott Cohen Architect, 1996 – 2007
Senior Designer, KDLAB, NY, 2001 – 2003
Intern Architect / Project Manager, CR Studio, NY, 1999 – 2001
Intern Architect / Project Manager, Thompson and Rose Architects, MA, 1997 - 1999

Selected Publications:

2007 *Provisional Practice: Emergent Modes of Production in American Architecture*, Dreyfous, Kedan, Mutter, 2008. Forthcoming publication of current work, Fall 2009.

2006 *Catalytic Formations: Architecture and Digital Design*, Ali Rahim, Taylor Francis, 2006. Media design for monograph featuring 6 unbuilt projects by Ali Rahim

2005 Olympic Sculpture Park, Seattle, WA, Weiss Manfredi Architects – *Media Designer* Short Film commissioned by MoMA for Groundswell Exhibition

2001 *Contested Symmetries and Other Predicaments in Architecture*, Preston Scott Cohen, Princeton Architectural Press, *2001 Project Designer and Contributing Designer - Various Projects*.

2000 Yenching Wu Residence, Preston Scott Cohen - *Media Designer* 2002 San Francisco Museum of Art Permanent Collection

Timothy W. Hyde

Associate Professor of Architecture

Courses Taught:

SPRING 2011	1202	Fourth Semester Core: Architectural Design
SPRING 2011	4429	The Personifications of Modernism: Philip Johnson
SPRING 2011	9301	Independent Thesis in Satisfaction of Degree MArch
FALL 2010	4206M2	Buildings, Texts, and Contexts
FALL 2010	4501	Proseminar in History, Theory and Urban Design
FALL 2010	9301	Independent Thesis in Satisfaction of Degree MArch
SPRING 2010	4425	Histories of the Future
SPRING 2010	9301	Independent Thesis in Satisfaction of Degree MArch
FALL 2009	1201	Third Semester Core: Architectural Design
FALL 2009	4205M1	Buildings, Texts, and Contexts
FALL 2009	4501	Proseminar in History, Theory and Urban Design
FALL 2009	9203	Prep of Design Thesis Proposal for MArch
FALL 2009	9301	Independent Thesis in Satisfaction of Degree MArch

Education:

Harvard University, Ph.D., History and Theory of Architecture, 2007

Princeton University, M. Arch., 1996

Yale University, B.A., 1990

Teaching Experience:

Harvard University, Graduate School of Design, 2004-present

Northeastern University, Department of Architecture, 1998-2004

Professional Experience:

Design Associates, Cambridge, Massachusetts (1997- 2000)

Gaze Commercial, Saigon, Vietnam (1996- 1997)

Eisenman Architects, New York, New York (1991- 1993)

Licenses/Registrations:

Registered Architect, State of Vermont

Selected Publications, Books and Edited Volumes:

A Constitutional Modernism: Architecture and Civil Society in the Cuban Republic [manuscript under review at University of Minnesota Press]

Governing by Design, with Daniel Abramson and Arindam Dutta, eds. [University of Pittsburgh Press, forthcoming]

Selected Publications, Book Chapters, Articles, Essays:

"Bowler Hats," *Log 22* [forthcoming]

"Mejores ciudades, ciudadanos mejores: On Law and Architecture in the Cuban Republic," in *Governing by Design*, Daniel Abramson, Timothy Hyde, and Arindam Dutta, eds. [University of Pittsburgh Press, forthcoming]

"Turning the Black Box into a Great Gizmo," *Thresholds* 38 (2010): 80-83. [peer-reviewed]

"Conversation," *Praxis* 11 (2010): 133-137

"Proximate Utopia, or, The Semblance of the Future," *Harvard Design Magazine* 31 (Fall/Winter 2009/10): 135-140.

"Vaguely Familiar," *Without Out*, exh. cat., Massachusetts Institute of Technology, List Visual Arts Center, 2009.

"Turning the Black Box into a Great Gizmo," *Proceedings of the ACSA Annual Meeting*, 2009, 669-673. [peer-reviewed]

"Architecture in the Sixties and the Sixties in Architecture [Review Essay]," *The Sixties* 2:1 (2009): 97-105.

"Peter Eisenman's Alibi [Review Essay]," *Harvard Design Magazine* 28 (Spring/Summer 2008): 109-114.

"Planos, planes, y planificación: Josep Lluís Sert and the Idea of Planning," in *Jospe Lluís Sert: The Architect of Urban Design*, ed. Eric Mumford and Hashim Sarkis. (New Haven, Yale University Press, 2008), 55-75. [peer-reviewed]

"Some Evidence of Libel, Criticism and Publicity in the Architectural Career of Sir John Soane," *Perspecta* 37: *Famous* (2005): 144-163.

"Pilot Plan for Havana" and "Quinta Palatino," *Sert Architect, 1928-79: Half a Century of Architecture*, exh. cat., Josep Rovira ed., (Barcelona, Fundació Joan Miró, 2005).

"Allegories of the Postwar," *Proceedings of the ACSA Annual Meeting*, 2003, 248-252. [peer-reviewed]

"How to Construct an Architectural Genealogy" in *CASE: Le Corbusier's Venice Hospital and the Mat-Building Revival*, ed. Hashim Sarkis, Pablo Allard and Timothy Hyde. (Munich, Prestel, 2002), 104-117.

Professional Memberships:

Member, Society of Architectural Historians, (2000 -)

Member, College Art Association, (2007 -)

Member, Modernist Studies Association, (2007 – 2010)

Mariana Ibañez

Assistant Professor of Architecture

Courses Taught:

FALL 2010	1201	Third Semester Core: Architectural Design
FALL 2010	2324	Augmented Architecture
SPRING 2010	1102	Second Semester Core: Introduction to Design and Visual Studies in Architecture
FALL 2009	1201	Third Semester Core: Architectural Design

Education:

2002–2004	The Architectural Association, London, UK, Graduate School of Architecture, AAD[R]L (Design Research Laboratory); Master of Architecture and Urbanism, thesis honours; Thesis title: PULSE: Extreme Live and Work Environments at Heathrow Airport
1993–2000	University of Buenos Aires (UBA), Buenos Aires, Argentina, Bachelor of Architecture
2000	University Torcuato DiTella, Buenos Aires, Argentina, Research Module in Architecture: "Urban Interventions"
1997	University Torcuato DiTella, Buenos Aires, Argentina, Research Module in Architecture: "Urban Disasters: La Boca"
1996	Escuela de Bellas Artes Ernesto de la Carcova, Buenos Aires, Argentina, Research Module in Architecture: Art & Architecture: "The Museum as Interface"

Teaching Experience:

2007–present	Harvard University, Graduate School of Design, Cambridge, MA, USA, Assistant Professor
2006–2007	Harvard University, Graduate School of Design, Cambridge, MA, USA, Visiting Design Critic
2000-2002	University of Buenos Aires, FADU, UBA, Buenos Aires, Argentina, Design Studio Instructor, Arquitectura 3
2001-2002	University of Buenos Aires, FADU, UBA, Buenos Aires, Argentina, Design Studio Instructor, Landscape 5
2000-2001	University of Buenos Aires, FADU, UBA, Buenos Aires, Argentina, Course Instructor, Architectural Representation
1999-2000	University of Buenos Aires, FADU, UBA, Buenos Aires, Argentina, Design Studio Instructor, Arquitectura 5

Professional Experience:

IJK studio, Boston, Philadelphia - 2006 – present, Principal
Zaha Hadid Architects, London, UK – 2004/2006, Architect
ARUP, AGU [Advanced Geometry Unit], London, UK – 2004, Architect
Serie Architects, London, UK – 2003, Architect
Architectural Association Publications, London, UK – 2003, Designer
PAC+, Bs.As., Argentina – 2001/2002, Architect
FIV Arquitectura, Bs.As., Argentina, Principal – 1998/2002
Oscar Fuentes Arquitecto, BS.AS., Argentina - 1999/2001
Claudio Vekstein Arquitecto, BS.AS., Argentina - 1997/1998

Selected Publications:

- Immersive Kinematics - Forthcoming 2012, Published by Penn Press, Experiments in Physical Computation, co-edited with Simon Kim
- Interior Architecture of China, May 2010, Featured Project: Quarantine - from Crossing Dialogues for Emergency Architecture
- ReVista, Difference and Repetition - April 2010, The Argentinean New Wave, Interview by Maria Guest
- Harvard Design Magazine, April 2010, Idea-Driven Practices: What Nine Young Designers Do
- Boston Home Magazine, February 2010, The Next Generation of Design Stars, Interview by Rachel Levitt
- Thresholds magazine, issue 36: residual – December 2009, Layout designer
- ART BASEL Fair, Century - Basel, Switzerland - June 2009, Inevitable cultural negotiations when building a city in the 21st - Feature Ordos 100 projects
- Harvard Design Magazine, Issue 30 - Basel, Spring-Summer 2009, Ordos, Nine Houses by GSD Faculty - Feature 4-2-1 House - Ordos 100
- Crossing Dialogues for Emergency Architecture - May 2009, NAMOC [National Art Museum of China] Quarantine, Exhibition Catalogue
- a+u: Architecture in Croatia and Slovenia, Issue N°462 - March 2009, Consultant to the editorial team
- Thresholds magazine, issue 35: difference - February 2009, *Self-similarities*, co-author Simon Kim, Feature 4-2-1 House - Ordos 100
- Boston Globe, October 12th 2008, A View to Expanded Horizons, by Robert Campbell - New Trajectories Exhibition Review
- Harvard University Gazette, September 25th - October 1st 2008, New Trajectories: Contemporary Architecture in Croatia and Slovenia - Exhibition Review
- arq.i.tect (architecture.image.technology), issue 3.2 - September 2008, Feature of the Ordos Project
- New York Times, *In Inner Mongolia, Pushing Architecture's Outer Limits*, May 1, 2008, Ordos100 work reviewed, Fred Bernstein.

Florian Idenburg

Design Critic in Architecture

Courses Taught:

SPRING 2011	1202	Fourth Semester Core: Architectural Design
FALL 2010	1201	Third Semester Core: Architectural Design
SPRING 2010	1202	Fourth Semester Core: Architectural Design
FALL 2009	1201	Third Semester Core: Architectural Design

Education:

Master in Architectural Engineering, Delft University of Technology, 1999

Japan Prizewinners Program, Dutch Ministry of Education, Leiden University / JNI, Tokyo, 2000

Teaching Experience:

2007-2008	Design Critic, Harvard University, Graduate School of Design, Cambridge MA
2006-2007	Visiting Lecturer, Princeton University School of Architecture, Princeton NJ
2003	Teaching Associate, Rice University School of Architecture, Houston TX
2002	Teaching Associate, Ministerio de Fomento, Madrid, Spain
1997-1999	Teaching Assistant, Delft University of Technology, Faculty of Architecture, the Netherlands

Professional Experience:

2008-present	Principal, so-il, Brooklyn, New York
2006-2007	Principal, Moko Omaha Ltd. Amsterdam, the Netherlands
2003	Associate, Kazuyo Sejima + Ryue Nishizawa / SANAA, Tokyo, Japan
2000-2002	Designer, Kazuyo Sejima + Ryue Nishizawa / SANAA, Tokyo, Japan
1998-1999	Designer, NL Architects, Amsterdam, the Netherlands
1996	Intern, P.T. Han Awal & Architects, Jakarta, Indonesia

Licenses/Registrations:

Licensed architect in the Netherlands, 2006-present

Selected Publications

Florian Idenburg's writings have been published in a number of leading industry magazines such as *Domus*, *A+U*, and *Idea Magazine*

Richard W. Jennings, FAIA

Lecturer in Architecture

Courses Taught:

SPRING 2011	7440	Leading the Design Firm
FALL 2010	7407	Managing the Design Project
SPRING 2010	7413	Integrated Project Delivery
FALL 2009	7407	Managing the Design Project
FALL 2009	7440	Leading the Design Firm

Educational Credentials:

B.S.	University of Houston, 1973
M.B.A.	University of Dallas, 1976
M.Arch	NewSchool of Architecture, 2004
M.DesS.	Harvard University, 2005
D.Des.	Harvard University, 2008

Teaching Experience:

Lecturer in Architecture, Harvard University Graduate School of Design, 2008-present
Adjunct Professor, University of Texas at Austin School of Architecture, 2011-present
Teaching Fellow, Harvard University Graduate School of Design, 2006-2008
Lecturer at conferences and seminars, 1985-present
Instructor, Rice University School of Architecture, 1987-1992

Professional Experience:

Project Architect, Welton Becket & Associates, 1970-1972
Principal & Director, 3D/International, 1972-1980
President/CEO/Managing Principal, Sikes Jennings Kelly & Brewer, 1980-2002
Research Associate, Harvard University Graduate School of Design, 2006-2008
Senior Consultant, Environmental Financial Consulting Group, New York, NY 2007-Present

Licenses/Registrations:

Texas
California
New Mexico
New York
NCARB Certificate

Selected Publications and Recent Research:

4D Applications at 400 North Los Angeles. Harvard Case Study, 2005.
Construction Documentation: Shepley Bulfinch Richardson & Abbott. Harvard Case Study, 2006
Culture in Mergers and Acquisitions. Harvard Case Study, 2009
Integrated Design. A+U Magazine. Co-author. 2010
Transforming Architectural and Engineering Service Delivery. Current research.
Sustainability Rating Systems. Chap. in "Infrastructure Sustainability." 2012 Pub. Date

Professional Memberships:

Fellow, American Institute of Architects
Boston Society of Architects
American Planning Association
Project Management Institute

Ken Martin Kao, AIA
Lecturer in Architecture

Courses Taught:

FALL 2010 6413 Net Zero Energy Development: Sustainable Communities & Technology
FALL 2009 6413 ZED Workshop

Education:

Dr. Tech. Sci. Swiss Federal Institute of Technology, Zurich, ETH; *Dissertation: Frank Lloyd Wright: Experimentation in the Art of Building.*
Master of Architecture, Harvard Graduate School of Design, Cambridge MA; *Degree with Distinction, AIA Merit Award, Alpha Rho Chi Medal*
Bachelor of Arts, University of Pennsylvania, Philadelphia PA; *Magna Cum Laude, Degree with Distinction*

Teaching Experience:

Harvard University, Graduate School of Design, Cambridge MA, Lecturer in Architecture, 1988-present
Massachusetts Institute of Technology, Cambridge MA, Visiting Design Studio Critic and Lecturer, Fall 1995
Swiss Federal Institute of Technology, Zurich, ETH-Z, Design Studio Critic, 1983-1985
Rhode Island School of Design, ETH-Z Studies on American Architecture, Guest Lecturer and Studio Critic, Summers 1990-1992

Professional Experience:

Founding Principal, Kao Design Group, Somerville MA, 1995-present
Senior Associate, Jung|Brannen Associates, Boston MA, 1985-1994

Selected Publications

The Getty Grant Program – Architectural conservation reviews

- F.L. Wright's "Freeman House," Conservation, Pasadena CA
- F.L. Wright's "Falling Water" Restoration proposal, Bear Run PA
- F.L. Wright's Martin House Restoral Proposal, Buffalo NY
- F.L. Wright's Zimmerman House Restoration, Manchester NH

"F.L. Wright: Experiments in the Art of Building," MODULUS 22: CRAFT & ARCHITECTURE, University of Virginia Architectural Review, Princeton Architectural Press, 1993.

"Innovation and Tradition," Nader Ardalan, Arts & the Islamic World, 993. Architecture, Archaeology and the Arts in UAE, ADMA/OPCO Project. JBA

Frank Lloyd Wright: The Role of Technology and Experimentation in the Art of Building, Typescript, ETH-Z Dissertation, Zurich, 1991.

"Saekung Building, Choi & Kao Architects," SPACE – Art & Architecture, February 1990, No. 270

Die Lehre Als Programm – On Basic Design. Lehrstuhl Prof. Kramel, Contributor, ETH-Z. 1990.

"Monumentality and The City," ed., Harvard Architecture Review, IV, 1983 M.I.T. Press, 1984.

Professional Memberships:

Member, American Institute of Architects;
Member, Boston Society of Architects;
AIA Design Committee Member;
Glass Artists' Society Member;
American Solar Energy Society Member

Nico Kienzl

Lecturer in Architecture

Courses Taught:

FALL 2010 6112M2 Energy, Technology and Building

Education:

Doctor of Design, Harvard University Graduate School of Design, 2002

MS Building Technology, Massachusetts Institute of Technology, 2000

Diplom Ingenieur Architektur, Technische Universität München, 1995

Teaching Experience:

Visiting Lecturer | Columbia University GSAPP, 2008-present

Visiting Instructor | Pratt Institute, 2002-present

Thesis Reader | MIT, 2001

Instructor and Teaching Fellow | Harvard University, 2000-2002

Professional Experience:

Director, Atelier Ten, 2002-present

Researcher, Harvard Center for Design Informatics, 1999-2002

Designer, Architekturburo Herzog + Partner, 1995-1997

Selected Publications:

Blurring the Lines | Wiley-Academy, 2006

Mat Buildings & Environment: Examination of a Typology | Harvard University, 2005

Smart Materials and Technologies in Architecture | Architectural Press, 2005

Evaluating Dynamic Building Materials | Harvard University, 2002

Advanced Building Skins | MIT, 1999

Research:

As a director of Atelier Ten and leader of its global energy analysis practice, Kienzl consults on a wide variety of large scale residential, commercial and institutional buildings, as well as on master-plan and renovation work in the United States, Europe, and the Middle East. Kienzl has particular experience with the application of advanced building analysis for façade optimization, daylight and shading analysis, and optimization of building systems.

Professional Memberships:

General Services Administration Design Excellence Program, peer reviewer; US Green Building Council, LEED Accredited Professional

Sanford Kwinter

Professor of Architectural Theory and Criticism

Courses Taught:

SPRING 2011	3426	Light and Space: Experiments in Transforming the Photosphere
SPRING 2011	3437	Transformations in Spatial Thought: 1970-2000
FALL 2010	3434	Architecture and Art: From Minimalism to Neuro-phenomenology
SPRING 2010	3426	Light and Space: Experiments in Transforming the Photosphere
FALL 2009	3434	Architecture and Art: From Minimalism to Neuro-phenomenology
FALL 2009	4206M2	Buildings, Texts, and Contexts

Education:

1989	Ph.D., Columbia University
1982	M.Phil., Columbia University
1979	M.A., Columbia University
1978	D.E.A., Universit de Paris
1977	B.A., University of Waterloo/ University of Toronto

Teaching Experience:

2009-	Professor of Architectural Theory and Criticism, Department of Architecture, Harvard Graduate School of Design
2008-2009	Visiting Associate Professor, Department of Architecture, Harvard Graduate School of Design
2008	Visiting Lecturer, Harvard University, Graduate School of Design
1993-2008	Rice University
2007	Cornell University
2005-2007	Massachusetts Institute of Technology
2004	University of Pennsylvania
2001-2003	Visiting Lecturer, Harvard University, Graduate School of Design
1998, 2000	Columbia University
1993-1995	Architectural Association, London
1993	Visiting Lecturer, Harvard University, Graduate School of Design
1991	Ohio State University, School of Architecture
1991	Visiting Lecturer, Harvard University, Graduate School of Design
1988-1990	Whitney Independent Studies Program, New York
1985-1988	New School of Social Research, New York
1981-1984	Dept. of French and Romance Philology, Columbia University, N.Y.

Selected Publications:

Books

forthcoming	<i>New Babylons: Urbanism at the Turn of the Millennium</i> , Routledge
	<i>Soft Systems</i>
2007	<i>Far From Equilibrium: Essays on Technology and Design Culture</i> , ACTAR Press, Barcelona and New York
2001	<i>Architectures of Time: Toward a Theory of the Event in Modernist Culture</i> , MIT Press, Cambridge
	<i>Mutations</i> , with Rem Koolhaas and Stefano Boeri, Actar, Barcelona, 2001. French and Spanish Translations: <i>Mutations</i> , Actar, Barcelona, 2001. <i>Mutaciones</i> , Actar, Barcelona, 2001.
	<i>Mutations</i> , (different book), Tokyo, Japan

Edited Books

1999	<i>Pandemonium: The Rise of Predatory Locales in the Postwar World</i> , Princeton Architectural Press
1996	<i>Rem Koolhaas: Conversations with Students, (Flying the Bullet or When Did the Future Begin?)</i> Princeton Arch. Press
1992	<i>ZONE 6: Incorporations</i> , editor (with J. Crary), Zone Books, New York/ MIT Press, Cambridge. Spanish translation: <i>Incorporaciones</i> , Ediciones Catedra, Madrid, 1996.
1986	<i>ZONE 1/2 The Contemporary City</i> , editor (with M. Feher), Zone Books, New York/MIT Press, Cambridge

Articles

2008	The Agony and the Ecstasy, <i>Parametrics</i> , VERB Books, Actar, New York and Barcelona. (with Jason Payne) Bowery Ma, in <i>The New Museum</i> , New York. Eisenmans Lost Text, in <i>11+L</i> , Peter Eisenman, Pre-Textos de Arquitectura, Barcelona.
2007	The Pneumatic Universe of Coop Himmelblau, <i>BMW Welt</i> , Vienna. Notes on Abomination, <i>LOG</i> , NYC Interview, <i>PRINZEISENBETON</i> , Universitat der Angewandte Kunst Interview, Science and Architecture, <i>Manifold</i> , Houston Interview, Stadelshule Website, The Space of Communication
2006	The Garden and the Veil, in <i>Inside/Outside: Petra Blaisse</i> , NAI Publishers Architectures Scientific Revolution, <i>SEED Magazine</i> , Jan.-Feb. 2006, New York City
2005	Knowledge Activism, <i>Thirty-Two</i> , no. 7, New York Seven, <i>Tooling</i> , Aranda/Lasch, Pamphlet Architecture no. 27, Princeton Architectural Press, New York The Judo of Cold Combustion, <i>Atlas of Novel Tectonics</i> , Jesse Reiser and Nanoko Umemoto, Princeton Architectural Press, New York Confessions of an Organicist, <i>LOG 5</i> , New York, Spring

Andrea P. Leers, FAIA

Adjunct Professor of Architecture and Urban Design

Courses Taught:

SPRING 2011 1320 Beyond Paris: The Palaiseau Campus at Paris Saclay
SPRING 2010 1317 Beyond Paris [suite]: a New Campus for the University of Paris South XI at Saclay

Education:

1966 Master of Architecture, Graduate School of Fine Arts, University of Pennsylvania, Philadelphia, PA
1964 Bachelor of Arts, History of Art, Wellesley College, Wellesley, MA

Teaching Experience:

2009-2010 *Harvard University Graduate School of Design*, Director of the Master in Urban Design Degree Programs
2002-present *Harvard University Graduate School of Design*, Adjunct Professor of Architecture and Urban Design
2007 *University of Paris 1 Sorbonne*, Chaire des Amériques
2003 *University of Maryland, School of Architecture*, Kea Visiting Distinguished Professor
2001 *Harvard University, Graduate School of Design*, Visiting Critic
1998, 1999 *University of Pennsylvania, Graduate School of Fine Arts*, Department of Architecture, Visiting Critic
1996 *Harvard University, Graduate School of Design*, Visiting Critic
1995 *University of Virginia, School of Architecture*, Harry S. Shure Visiting Professor
1992-present *Harvard University, Graduate School of Design*, Instructor, Executive Education Programs
1991 *Tokyo Institute of Technology, Department of Architecture*, Visiting Critic
1990 *Harvard University, Graduate School of Design*, Visiting Critic
1983 *University of Pennsylvania, Graduate School of Fine Arts*, Department of Architecture, Visiting Critic
1981-1988 *Yale University, School of Architecture*, Adjunct Associate Professor and Visiting Critic
1979 *MIT, Department of Architecture and Planning*, Visiting Critic
1975-1978 *Harvard University, Graduate School of Design*, Visiting Critic

Professional Experience:

1983-present Leers Weinzapfel Associates Architects, Inc. Boston, MA. Founding Principal
1978-1982 Andrea Leers Architect, Arlington, MA. Principal
1970-1978 A+H Browning Associates Arlington, MA. Principal
1969-1970 Ashley, Myer, Smith Architects, Cambridge, MA. Architect
1966-1969 Earl R. Flansburgh and Associates, Cambridge, MA. Apprenticeship

Licenses/Registration:

Licensed architect: Massachusetts, Connecticut, Maine, North Carolina, Florida

Selected Publications:

2011 *Made to Measure: The Architecture of Leers Weinzapfel Associates*. Princeton Architectural Press, New York, NY (reviewed by ArchNewsNow.com, June 24th, 2011)
2006 Urban Design and The Courthouse: How Sites Shape Courthouse Design, *Celebrating the Courthouse*, Ed. Steven Flanders, W.W. Norton & Co., New York, NY
1997 Japan's Palace of Justice, "Shin'ichi Okada Monograph, *The Japan Architect*, vol. 25.
1996 William S. Saunders, editor. *Reflections on Architectural Practice in the Nineties*, How Should Architects Respond to Changes in Practice? New York: Princeton Architectural Press, 40-43.
1995 Welcoming the West: Japan's Grand Resort Hotels, unpublished manuscript
1991 A Sense of Place in the Landscape: Two Recent Projects by Hisao Koyama, *Shin-Kenchiku*.
1989 Book Review: *The Making of Modern Japanese Architecture: 1868 to the Present* by David Stewart. Extending and Redefining Traditions: Recent Boston Architecture, With Alex Krieger, *A+U*.
1988 Two Ando Buildings: Mt. Rokko Chapel and Mon Petit Chou, Architecture.
1986 Boston Looks at Tokyo, *Build Boston Magazine*.
Tadao Ando's Mt. Rokko Chapel, *A+U*.
1984 General Research Archives at Tokyo University by Hisao Koyama, *Architecture*.
The Introduction of 2x4 Construction in Japan, *Nikkei Architecture*.
1983 Recent Work of Fumihiko Maki, *Japan Architect*.

Professional Memberships:

American Institute of Architects, College of Fellows;
Boston Society of Architects

George L. Legendre

Adjunct Associate Professor of Architecture

Courses Taught:

FALL 2010	1304	Rising Mass 2
FALL 2010	2404	Superficial Spaces
FALL 2009	1306	Mies Immersion
FALL 2009	2404	Superficial Spaces / Formalism Now

Education:

Harvard University Graduate School of Design, Cambridge MA. Master in Architecture February 1994.
School of Architecture of Paris-Belleville Paris, France. Diploma of Architecture DPLG (B.Arch) with distinction, July 1991.
Lyceum Lavoisier Paris, France. Baccalauréat C. Three-year maths and physics high school degree program.

Teaching Experience:

As of Sept. 2011	Adjunct Associate Professor, Harvard Graduate School of Design (GSD), Cambridge MA
Oct 1, 2008-2011	Design Critic, Harvard Graduate School of Design (GSD), Cambridge MA
Oct 1, 2001-2008	Unit Master, Diploma Unit 5, Architectural Association School of Architecture, London
Sept. 20, 2003-2005	Visiting Lecturer, Princeton University School of Architecture
Jan 2001-May 2002	Lecturer in Architecture, Harvard University GSD, Cambridge MA, USA
July 1995-July 2000	Assistant Professor of Architecture, Harvard University GSD, Cambridge MA, USA.

Professional Experience:

As of Feb. 2004	Director, IJP Corporation (IJP)
Since April 2004	Director and CTO, IJP London
July 2001-April 2004	Technical Architect, Skidmore Owings & Merrill LLP, London UK
Feb. 1994-July 1995	Architect, Gwathmey Siegel and Associates Architects, NY, NY

Books/Essays/Reviews:

Upcoming 2012	Singapore Weather Report , in [Untitled] by Hanif Kara and Andreas Georgoulas, NYC Actar, 2012.
September 2011	Pasta By Design , Thames and Hudson, London 2011. Foreword by Paola Antonelli, Senior Curator. MoMA NYC.
July 2011	Mathematics of Space, AD . Guest-edited by George L. Legendre, Wiley & Sons London. <i>The Mathematics of Sensible Things</i> (pp. 8-18). <i>IJP Explained</i> (pp. 44-54). <i>Pasta By Design</i> (pp100-102). <i>Implicit Fields MOCAPE Shenzhen</i> (pp. 118-122, with Max Kahlen).
April 2009	Only Connect , book review of <i>The Grid Book</i> by Hannah Higgins, in RIBA Journal 4/2009 London.
September 2008	New Things , GSD 08 Platform, Harvard Graduate School of Design Cambridge MA.
October 2007	AA Files 56 , AA Publications, London. Special issue on IJP. George L. Legendre in conversation with Bernard Cache. George L. Legendre in conversation with Hans-Ulrich Obrist.
October 2006	Mathematical Form* : John Pickering and the Architecture of the Inversion Principle, essay on the work of British artist and mathematician J. Pickering, 100 PP. AA Publications, London.
June 2006	Atlas of Novel Tectonics , book review of Reiser + Umemoto in AA Files 54, summer 2006.
March 2006	Bodyline , The End of our Meta-Mechanical Body, a book of short stories on showing the body in the age of meta-mechanical reproduction, 54 PP. AA Publications, London, March 2006.
July 2005	Shin & I , essay on the ontology of the surface. AA Files 52, AA Publications, London 2005.
March 2003	IJP: The Book of Surfaces , 164 PP. A classic book on the mathematics and philosophy of the architectural surface, AA Publications, London, 2003 (out of print).
September 1999	On Metric Equivalence , essay on mathematical projection and algorithmic programming. Appendix: Culture/Theory/Praxis, issue 5, Harvard University Cambridge MA, summer 1999. Related patent assessment by Harvard OTT case Liaropoulos-Legendre/S1463-97 (inconclusive).
March 1997	On the Computer Reconstruction of Related Historical Material , in "Retrospection, Baccio Bandinelli e il Coro del Duomo a Firenze", with Christine Smith and Jude Leblanc, Harvard GSD.
October 1995	Iconicity and Instrumentality , a discussion with Peter Eisenman, in Cahiers de L'IRCAM, Review of Musicology and Theory, 1995. IRCAM, Centre Georges Pompidou, Paris France.

New Media & Cd-Rom Publications:

March 2003	Reverse Picture of the Self . interactive Java installation on the dynamic deformation of surfaces. Architectural Association School of Architecture, London.
July 1999	SaltoArte , Tumbling Art, VRML installation project, in collaboration with Larry D. Burks . SIGGRAPH 99, 26th International Conference on Computer Graphics and Interactive Techniques. Published in the Conference Abstracts and Applications (CAA). Sketches and Applications/Creative Applications programs , Los Angeles, California.
March 1998	A virtual Library for the Information Age . International design Competition. VRML/Javascript prototype for a spatial search engine. Available upon request.

Professional Memberships:

Society of Authors, London United Kingdom; American Society for Engineering Education

Jonathan Levi, FAIA

Adjunct Professor of Architecture

Courses Taught:

SPRING 2011	6203M3	Materials, Constructions, Processes: City of Wood
FALL 2010	1201	Third Semester Core: Architectural Design
SPRING 2010	6203M3	Science and Technology: Construction Technology
FALL 2009	1201	Third Semester Core: Architectural Design

Education:

1981 M.Arch., Yale School of Architecture, New Haven, Connecticut.
1977-78 Attended, Harvard Graduate School of Design, Cambridge, Massachusetts.
1976 B.A., Yale College, New Haven, Connecticut.

Teaching Experience:

2007-pres. Harvard Graduate School of Design Adjunct Professor.
2000-pres. Harvard Graduate School of Design Adjunct Associate Professor.
1985-2000 Harvard Graduate School of Design Design Critic, Lecturer.

Professional Experience:

1995-pres. Jonathan Levi Architects Principal 266 Beacon Street Boston, MA
1994-1995 Stein/Levi Architects Principal Jonathan Levi, FAIA – 266 Beacon Street Boston, MA
1984-1994 Jonathan Levi Architect Principal Eight Alton Place Brookline, MA
1981-4 Hammond, Beeby & Babka Project Designer/Architect 440 N. Wells Street Chicago, IL

Licenses/Registration:

Licensed architect: Massachusetts - 2007-present

Selected Publications:

May Residence: The Sourcebook of Contemporary Architecture, Àlex Sánchez Vidiella, Collins Design and Loft Publications, Spain, 2007, pp494-501.
FlexDorm Design Concept: The 21st Century Project Design Showcase: The Home, James Baumann, 2007, pp14-23.
FlexDorm Design Concept: The Boston Globe, "College Dorms Get High-Tech Treatment", Peter Schworm, September 2, 2007, ppB2, B7.
FlexDorm Design Concept: Architectural Record, "Competition Rethinks Student Housing for the Echo-Boom Generation", Alan Brake, April 2007, p40.
FlexDorm Design Concept: The Chronicle of Higher Education, "The Dorm Room of the Future", Lawrence Biemiller, February 23 2007, ppB12-B13.
Harvard Graduate Student Housing: Architecture Boston, "Jonathan Levi FAIA Conversations on Architecture", Rachel Levitt, March/April 2005, pp9-10.
Brookline Residence: New Houses, Llorenç Bonet, Harper Design and Loft Publications, 2005, pp124-131.
May Residence: Houses-Casas-Häuser, eds. Hugo Kliczkowski and Alejandro Bahamón, HK-Onlybook (Madrid)/Loft Publications (Barcelona), Spain, 2005, pp91-99.
Harvard Graduate Housing Complex: "Jonathan Levi Architects Creates Affordable University Housing That Encourages A Sense of Community Among Graduate Students", Architectural Record, December 2004, pp. 186-191.
May Residence: House Design, Loft Publications, Barcelona, Spain, Fall 2004.
Patent Window: Facade Construction Manual, Institute for Internationale Architektur-Dokumentation Redaktion Detail, Munich, Germany, 2004.
Brookline Residence, May Residence: The Distinctive Home: A Vision of Timeless Design, J. Eck, Taunton Press, 2003, pps66, 157.
Holocaust Memorial in Charleston: "Millennium Awards Issue", Faith and Form, Vol. 34, no. 1/2001, p27.
The Belmont Hill Club, The John D. Runkle School & The May Residence: "The Year in Review Issue", ArchitectureBoston, vol. 3, no.5, 2000, pp 42, 49 & 58.
Holocaust Memorial in Charleston: Harvard Design Magazine, Winter 2000, pp 105.
Holocaust Memorial in Charleston: "The Holocaust: A Reconciliation of Two Portraits", cover feature, B. Meyer/J. Levi, Faith and Form, Vol. 32, no. 3/1999, pp8-9.
Holocaust Memorial in Charleston: "Holocaust Memorial, Charleston, SC", World Magazine – Journal of the Unitarian-Universalist Society, Dec. 1999, pp48.
Belmont Hill Club: Harvard Design Magazine, Fall 1999, pp98.
May Residence: "A Modern Treehouse", R. Campbell, Boston Globe, Jul 8, 1999, ppF1, 8.
Holocaust Memorial in Charleston: "Architect/Sculptor"s Statement", J. Levi, Dedication Catalog, pp 2.
Holocaust Memorial in Charleston: "Remembering", R. Behre, Charleston Sunday Post and Courier, Jun 6, 1999, pp1.
May Residence: Harvard Design Magazine, Fall 1998, pp98.

Professional Memberships:

American Institute of Architects, Fellow

Peter Lynch

Lecturer in Architecture

Courses Taught:

FALL 2010 2101M1 Visual Studies

Education:

B. Arch., Irwin S. Chanin School of Architecture, Cooper Union for the Advancement of Science and Art. Recipient of the AIA Henry Adams Medal, New York Society of Architects' Matthew Del Gaudio Award, and the Abraham E. Kazan Fund Prize for Urban Design Studies, June 1984

Teaching Experience:

Instructor, graduate seminar, Parsons The New School for Design, Spring 2010.
Instructor, undergraduate seminar, Parsons The New School for Design, Spring 2008, Spring 2009, Spring 2010.
Visiting Professor, Musashino Art University, Tokyo, November 2009.
Distinguished Visiting Professor and Assistant Adjunct Professor, undergraduate thesis design studio, School of Architecture and Environmental Studies, City College of New York, Fall 2005-present.
Adjunct Professor, Rhode Island School of Design, Fall 2009.
Adjunct Professor and External Examiner, Dalhousie University School of Architecture, Halifax, March 2003-present.
Instructor, New York Institute of Technology, Spring 2008.
Tutorial Professor, VIII Taller de Arquitectura en Santander, Colegio Oficial de Arquitectos de Cantabria, Santander, Spain, July 2007.
Adjunct Professor, graduate design studio, School of Architecture and Environmental Studies, City College of New York, Summer 2006.
Adjunct Professor, undergraduate seminar, School of Architecture and Environmental Studies, City College of New York, Spring 2006.
Architect-in-Residence and Head, Architecture Department, Cranbrook Academy of Art, Bloomfield Hills, Michigan, August 1996-July 2005.
Tutorial Professor, II Taller de Arquitectura en Santander, Colegio Oficial de Arquitectos de Cantabria, Santander, Spain, July 1997.
Adjunct Professor, freshman design studio, City College of New York, Spring 1992, 1994, 1995.
Co-instructor, design seminar, Graduate School of Architecture, Planning, and Preservation, Columbia University, New York, Fall 1993.
Adjunct Professor, sophomore design studio, School of Architecture and landscape Architecture, Rhode Island School of Design, Providence, Fall 1992.

Professional Experience:

Principal, Peter Lynch Architect, 1991-present
Co-director, THEM architecture | design, New York NY, 2006-present
Partner, "Building Culture" non-profit organization dedicated to improving sustainability in China, 2006-present
Partner, Metasus design studio, Hong Kong and Shenzhen, China, 2005-present
Inter, Project Architect, Associate, Steven Holl Architects, 1984-1990

Licenses/Registration:

Registered Architect: New York 1988, NCARB 1995, Michigan 1998, New Jersey 2003
Certified Permaculture | Designer, October 2006

Selected Publications:

"Villa for an Industrialist," in Marc Kristal, *Re:Crafted* (New York: Monacelli Press, April 2010).
"House for an Industrialist," in Fran Leadon, Ed., *Research & Design: Faculty Work* (Philadelphia: Oscar Riera Ojeda, 2009).
Peter Lynch and Gustavo Crembil, "No Resistance," *Journal of Architecture Education* 62:4, May 2009. Received 2009-2010 JAE/ACSA "Best Design-as-Scholarship Article Award."
"The Image of the Contemporary City," in *VIII Taller de Arquitectura en Santander* (Colegio Oficial de Arquitectos de Cantabria: Santander, Spain, in publication).
"An Imaginary Reconstruction of the Sky Over Moscow," in *El Lissitzky Wolkenbugel 1924-1925*, ed. Francisco Burgos and Gines Garrido (Madrid: Editorial Rueda, 2005). Also published in *32 Magazine* 5/6 (Winter 2005), 24-27.
"Architectural Research in Academia," *Scroope* 16 (Cambridge Arch. Journal) (September 2004).
"Peter Lynch," *Architectural Design* (September/October 2004, Vol. 74 #5), p. 53-57.
Peter Lynch: The Cranbrook Monographs (Bristol, England: Telos Art Publishing, 2003).
"Open Planning and Urban Design," in *Emerging Issues and New Directions of Urban Design and Planning* (Seoul, Korea: Dankook University, 2003), p. 11-34.
"Orientation of the Cranbrook Architecture Department," "History of the Cranbrook Architecture Department," "An Interview," *Dialogue* 40 (Taiwan Architecture Journal (September 2000): 114-125.

Panagiotis Michalatos

Lecturer in Architecture

Courses Taught:

SPRING 2011	6425	Optimizations
SPRING 2011	6426	Performance Domains
FALL 2010	6338	Computational Design [Numerical Descriptions as Design Tools]

Education:

2002 – 2004	Art and Technology master course, Chalmers and IT-Universitet, Gothenburg, Sweden, Master of Science (MSc); Thesis Title: “Epipeda: An idiosyncratic tool for design”
Winter-Summer 1999	Oulu School of Architecture, Oulu, Finland; Participation in the MonArch program through Erasmus
1994 – 2001	National Technical University of Athens [NTUA] school of architecture, Athens, Greece, Degree of Architect Engineer; Thesis Title: “Route 203”

Teaching Experience:

2010-2011	Lecturer in Architecture, Harvard University Graduate School of Design
Spring 2008	Workshop in KTH school of Architecture, Stockholm, Sweden

Professional Experience:

2006 - today	Adams Kara Taylor [a WYG Group Company] consulting civil and structural engineering, London, UK; Computational Design Researcher, Software Development and Design Consultant
2004-2007	CCAP [dance company], Stockholm, Sweden; Interaction design

Selected Publications:

Jun. 2009 IL GIORNALE DELL'ARCHITETTURA, N. 74, GIUGNO 2009 I Informatica [Interview]
Dec. 2008 Simplexity, the programming craft and architecture production, GSD[Harvard] Critical Digital 1
Sep. 2008 Computational Design Consultancy, eCAADe 2008, Antwerp, Belgium, Conference Presentation / Publication
Sep. 2008 Simplexity, eCAADe 2008, Antwerp, Belgium, Conference Presentation / Publication
Dec. 2007 Computational Methods for Free-Form Surfaces, IASS 2007 Venice, Italy, Conference Presentation / Publication: International Association for Shell and Spatial structures: “Structural Architecture - Towards the future looking to the past”.
Oct. 2007 Structural Information as Material for Design: ACADIA 2007, Halifax, Canada, Conference Presentation / Publication
Sep. 2007 Simplexity: Embedding Structural Analysis in the Design Process, Article: VERB Magazine, “Monograph Parametric / Algorithmic Design”, September 2007.
Sep. 2007 Discretization of Continuous Surfaces as a Design Concern, eCAADe 2007, Frankfurt, Germany, Conference Presentation / Publication

Selected Research:

2008-2009 Structural Patterns, London, UK
P.art, Adams Kara Taylor
• Designed and developed computer software that performs real time structural FE analysis of complex forms and implements advanced form finding and topology optimization algorithms that help explore the geometric patterns that emerge from our current understanding of structures.

2007-today Effective Material Distributions, London, UK
P.art, Adams Kara Taylor
• Designed analytical method for optimizing the material efficiency and structural capacity of architectural designs based on topology optimization.

2006-2008 Finite Elements Method for Architectural Design, London, UK
P.art, Adams Kara Taylor
• Developed computer software that performs structural analysis on complex architectural envelopes and presents feasible framing solutions based on geometric patterns.

Summer 2004 Picture this! Context aware photography, Gothenburg, Sweden
Viktoria Institute
Developed software prototype for a research group [Lalya Gaye, Sara Ljungblad and Maria Håkansson] experimenting with visually imprinting context related information [noise, movement etc...] to photos taken by mobile devices.

2004 Art & Technology, IT-Universitet , Chalmers,
Epipeda. Software development, synchronous multiuser design tool based on associative geometry

2002 Art & Technology, IT-Universitet , Chalmers,
Optical Flow. Development of software for real time motion analysis and Applications in visual movement reinterpretation.

Rafael Moneo

Josep Lluís Sert Professor in Architecture

Courses Taught:

SPRING 2011	3331	Conversations on Architecture of the Second Half of the XXth Century
SPRING 2011	3450	The Beginnings of a Project: A Reflection on Design Methodologies Through Four Case Studies.
SPRING 2010	3211	Behind Today's Architectural Trends
SPRING 2010	3406	The Beginnings of Design: Living Together with Other Buildings

Education:

1976-77 Visiting Fellow, Cooper Union School of Architecture
1976-77 Visiting Fellow, Institute for Architecture and Urban Studies of New York City
1963-65 Fellow, the Spanish Academy of Rome
1961 Technical School of Architecture, Madrid

Teaching Experience:

1991-present Josep Lluís Sert Professor of Architecture, Harvard Graduate School of Design
1985-90 Chairman of the Architecture Department, Harvard Graduate School of Design
1980-85 chaired professor, School of Architecture in Madrid
visiting professor at the architecture schools at Princeton, Harvard, and the architecture department of the Federal Polytechnic School in Lausanne, Switzerland
1970-80 chaired professorship in architectural theory, Technical School of Architecture in Barcelona
1966-70 Technical School of Architecture in Madrid

Professional Experience:

1965-present, private practice, Madrid

Selected Publications:

Rafael Moneo has developed an extensive body of work as architectural critic and theoretician. His collected writings will in the future be published by CLUVA in Milan, Italy, and by the M.I.T. Press in Cambridge, Massachusetts. The majority of the texts gathered in these volumes were first published in *Oppositions* and *Lotus* magazines, and in *Arquitectura Bis*—an architecture journal co-founded by Rafael Moneo.

Professional Memberships:

Member of the American Academy of Arts and Sciences
Member of the Accademia di San Luca di Roma
Member of the Swedish Royal Academy of Fine Arts
Honorary Fellow of the American Institute of Architects
Honorary Fellow of the Royal Institute of British Architects.

Awards:

In 1992, Rafael Moneo was awarded the Gold Medal for Achievement in the Fine Arts by the Spanish Government, and he was honored as Doctorate Honoris Causa by Leuven University in February of 1993. In May 1993, Moneo was awarded the Arnold W. Brunner Memorial Prize in Architecture by the American Academy of Arts and Letters and in June of that year he was awarded the Prince of Viana Prize by the Government of the Province of Navarra (Spain). In November 1993, he was awarded the 1993 Schock Prize in the Visual Arts by the Schock Foundation and the Royal Academy of Fine Arts in Stockholm. In April 1994, Moneo received a "Laurea ad Honorem" from the School of Architecture of Venice, and in 1996, he received the Pritzker Prize, the Gold Medal of the French Academy of Architecture, and the Gold Medal of the International Union of Architects. In May 1997 Rafael Moneo became Académico Numerario in the Royal Academy of Fine Arts of San Fernando in Madrid and in October 1997 Honorary Doctor of Technology from the Royal Institute of Technology of Stockholm. In 1998 he received the Antonio Feltrinelli Prize from the Accademia Nazionale dei Lincei in Rome. On 12 November 2003 he was awarded the Royal Gold Medal, by the Royal Institute of British Architects

Toshiko Mori, FAIA

Robert P. Hubbard Professor in the Practice of Architecture

Courses Taught:

FALL 2010	1302	Global Redesign Project 2. Resonance: Virtual and Real: Design of a Performing Arts Center
FALL 2010	3432	Global Redesign Project
FALL 2009	1303	Global Redesign Project I: Le Kinkeliba
FALL 2009	3432	Global Redesign Project

Education:

1996 Harvard University Graduate School of Design Hon. M. Arch

1976 Cooper Union School of Architecture B. Arch

1970-71 Cooper Union School of Art

Teaching Experience:

2002-2008	Harvard University Graduate School of Design, Chair, Department of Architecture
1999-2008	Harvard University Graduate School of Design, Thesis Director
1995-	Harvard University Graduate School of Design, Professor in the Practice of Architecture with tenure
1994	Columbia University School of Architecture, Visiting Critic
1994	Harvard University Graduate School of Design, Visiting Critic
1993	Yale University School of Architecture, Visiting Critic
1992	Yale University School of Architecture, Eero Saarinen Visiting Professor
1989	Harvard Graduate School of Design, Visiting Critic
1988-95	Cooper Union School of Architecture, Associate Professor
1980,83-88	Cooper Union School of Architecture, Design Critic
1982	Parsons School of Design, Design Critic

Professional Experience:

1981-	Toshiko Mori Architect, New York, NY
1976-81	Edward Larrabee Barnes and Associates, New York, NY
1974-75	Isamu Noguchi Sculpture Studio (part time)
1973-74	ELS Design Group Urban Design (part time)
1972-73	Tod Williams and Associates (part time)
1971-72	Systems Design Concept, Westside Highway Project (part time)

Licenses/Registrations:

NCARB certified; Registered Architect of the States of Missouri, New Jersey, Minnesota, Rhode Island, Connecticut, Michigan, Massachusetts, Florida, Maine, New York

Selected Publications, Books:

Forthcoming	<i>Textile Tectonic</i> , ed. Toshiko Mori, George Braziller
Fall 2010	<i>Solid States: Changing Time for Concrete</i> , "Opportunity in Transition: The Reinventing of Concrete," Princeton Architectural Press
Fall 2010	<i>Material Design: Informing Architecture by Materiality</i> , "Weaving: The Tectonics of Textiles," Birkhauser Verlag
Spring 2010	<i>Ecological Urbanism</i> , "Balances and Challenges of Integrated Practice," Lars Muller Publishers
Spring 2010	<i>Exploration: The Architecture of John Ronan</i> , Princeton Architectural Press, foreword by Toshiko Mori
Spring 2008	<i>Tokyo Life</i> , intro. Toshiko Mori, Rizzoli Press
Spring 2006	<i>Japan-ness in Architecture</i> , MIT Press, foreword by Toshiko Mori
2004	<i>10x10_2 100 Architects 10 Critics</i> , "Resilience, Resistance, and Restraint" and texts on 10 architects
2003	<i>The Favela-Barrio Project</i> , "Urbanism and Magical Realism"
2002	<i>Sanctuaries – The Last Works of John Hejduk</i> , Preface
2002	<i>Immaterial/Ultramaterial</i> , ed. Toshiko Mori, George Braziller
2001	Immaterial/Ultramaterial Exhibition Brochure

Selected Publications, Articles:

Oct 2006	<i>Harvard Bookstore</i> , "Featured Scholar: Interview with John Maeda"
Oct 2006	<i>The Architect's Newspaper</i> , "Architecture Seen Between the Cracks"
Winter 2005	<i>32BNY</i> , "Jinhua Architecture Park"
1998	<i>Harvard Design Magazine</i> , "Design and Fabrication"
1997	<i>Harvard Design Magazine</i> , "Look Again"
1996	<i>GSD News</i> , "Teaching and Research"
Jan 1991	<i>Metropolis</i> , "The City of Tokyo Has a Center But This Center Is a Void"
1984	<i>Japan Interior</i> , "Museum Stores"
1979	<i>Japan/New York</i> , "Six Interviews with Artists"

Professional Memberships:

World Economic Forum Global Agenda Council on Design; American Institute of Architects, Fellow

Farshid Moussavi, RIBA

Professor in Practice of Architecture

Courses Taught:

SPRING 2011 1312 The Function of Time: The Contemporary Art Museum
SPRING 2011 3409 The Function of Style: 2000-2010
SPRING 2010 1312 The Function of Roofs: The Urban Mall
SPRING 2010 3409 The Function of Style: 2000-2010

Education:

Master in Architecture with Distinction (MARCH II), Graduate School of Design, Harvard University, USA
Dipl. Architecture Degree , Bartlett School of Architecture, University College London University

Teaching Experience:

2005 - Professor of Architecture without limit, Harvard GSD, USA
2005 Kenzo Tange Visiting Design Critic, Harvard GSD, USA
2005 Head of Institute of Architecture, Academy of Fine Arts, Vienna, Austria
2002 Professor at the Academy of Fine Arts, Vienna, Austria
2002 Visiting Critic University of California Los Angeles, USA
2001 Visiting Critic Columbia University, USA
1993- 2000 Unit Master Architectural Association School of Architecture, London, UK
1999 Visiting Critic Princeton University, USA
1998 Visiting Critic Columbia University, USA
1997 Visiting Critic, Berlage Institute of Architecture, Amsterdam, Holland
1993-1995 Design Professor at Hoger Architectuur Instituut Sint-Lucas, Gent, Belgium.

Professional Experience:

In May 2011, Moussavi has founded her new practice, Farshid Moussavi Architecture (FMA).
Moussavi was previously co-founder and co-principal of the award-winning Foreign Office Architects (FOA).

Selected Publications:

The Function of Form by Farshid Moussavi, Published by Actar; Barcelona, Spain, 2009
The Function of Ornament by Farshid Moussavi, Published by Actar; Barcelona, Spain, 2002
FOA's Ark_Evolving Container for the Proliferating, Singularities, Korean Architecture & Culture, 2004
FOA Recent Projects, Published as 2G, No. 16, Barcelona, Spain 2001
The Yokohama Project: A monograph by Actar, Barcelona, Spain 2002
ElCroquis No 136, Madrid, Spain, 2003
Phylogenesis: FOA's ark, Published by Actar; Barcelona, Spain 2003

Exhibitions:

2011: La Ville Fertile at Cite de l'architecture du patrimoine, France
2010: Why Design Now? at Cooper Hewitt National Design Triennial, USA
2009: Gwangju Design Biennale, Korea
Dentelles d'architecture at MAV, France
2008: Future, Non-Future at the AA, London
Skin+Bones: Parallel Practices in Fashion and Architecture, London, Tokyo and LA
2007: Love & Money: the Best of British Design Now Retrospective show on FOA held at MOCA, Cleveland
2006: Carsten Holler's Unilever Series Show, Tate Modern, with the Hypothetical Slide; House project, London
UK; Design of Future City Exhibition Barbican Art Gallery, London, UK
2005: Groundswell: Constructing the Contemporary Landscape, MoMA New York, USA; Monographic show on FOA, Harvard University, Graduate School of Design
Monographic show on FOA, Bratislava, Slovakia
2004: Monographic show on FOA, Fargfabriken Center for Contemporary Art and architecture in Sweden
2003: FOA's phylogenesis at the Museum fur Angewandte Kunst (MAK), Vienna;
Monographic Show at the Institute of Contemporary Art (ICA), London

Professional Memberships:

Member of the Architects Registration Board
Chartered member, Royal Institute of British Architects

Mark Mulligan

Adjunct Associate Professor of Architecture

Courses Taught:

SPRING 2011 6311 Innovative Construction in Japan
FALL 2010 6111M1 Materials and Construction: An Introduction to Techniques, Composition and Strategies
FALL 2010 6204 Building Technology
SPRING 2010 6311 Innovative Construction in Japan
FALL 2009 6111M1 Materials and Construction: An Introduction to Techniques, Composition and Strategies
FALL 2009 6204 Building Technology

Education:

1990 Harvard University, Cambridge, Massachusetts, Master of Architecture, 1990 Graduated with distinction
Thesis: Music and Architecture: a violin shop in the North End
1984 Yale University, New Haven, Connecticut Bachelor of Arts in architecture, 1984 Graduated *summa cum laude*

Teaching Experience:

2011- Harvard University Graduate School of Design Director of the Master in Architecture Degree Programs
2007- Harvard University Graduate School of Design Adjunct Associate Professor in Architecture
1997-2007 Harvard University Graduate School of Design Lecturer in Architecture
1996-1998 Harvard University Graduate School of Design Design Critic

Professional Experience:

Mark Mulligan, architect
Maki and Associates, Tokyo, Japan, 1990-96
Diener+ Diener Architekten, Basel, Switzerland, 1989

Licenses/Registrations:

Licensed in Massachusetts

Selected Publications:

Nurturing Dreams: Collected Essays on Architecture and the City by Fumihiko Maki, Mark Mulligan, editor, MIT Press (Forthcoming)

Japanese Modern Architecture: Projects and Itineraries Mark Mulligan, Peking University Press (Forthcoming)

Japan Transfer. Co-edited with Andrea Leers, Harvard GSD, 2003.

UME, vol. 17: Casa Hayes

Dwell: Corbu Meets Costa Rica (Casa Hayes) by Nancy Levinson, June 2003.

Journal of Architecture and Building Science: The problem of enduring, December 2003.

Harvard Design Magazine:

The Game Has Changed: scenes of Tokyo (with photos by Harry Gruyaert), summer 2001;

Heimlich Manoeuvres book review, fall 1997;

Engineers of Dreams book review, spring 1995;

Structure in Sculpture book review, summer 1994;

An Interview with Fumihiko Maki, spring 1994.

Harvard Architectural Review #9: Architectural Research, contributing editor, Rizzoli, 1990-93.

Japanese-English translation:

Various essays in *Case: Sendai Mediatheque*, 2001

Ephemeral light in *Immaterial/Ultramaterial*, 2001

Space Design: special issue on Hong Kong (winter 1992)

Japan Architect, vol. 17 (spring 1995)

Erika Naginski

Associate Professor of Architectural History

Courses Taught:

SPRING 2011	3435	The Architectural Imagination (Graduate Seminar in General Education)
SPRING 2011	4203M3	Buildings, Texts, and Contexts
SPRING 2011	4423	The Shapes of Utopia
FALL 2010	4201M1	Buildings, Texts, and Contexts: Classicism: From Theory to History
FALL 2010	4202M2	Buildings, Texts, and Contexts: Architecture and Theory
FALL 2010	4428	Visionary Architecture
SPRING 2010	3504	PhD Methodology Seminar
SPRING 2010	4203M3	Buildings, Texts, and Contexts
FALL 2009	4201M1	Buildings, Texts, and Contexts: Classicism: From Theory to History
FALL 2009	4202M2	Buildings, Texts, and Contexts: Architecture and Theory
FALL 2009	4423	The Shapes of Utopia

Education:

University of California, Berkeley, Ph.D., History of Art (June 1997)

Boston Museum School (1988-1989)

New York University, B.F.A. summa cum laude (June 1987)

Université de Paris IV (Fall 1986)

Teaching Experience:

Harvard University, Graduate School of Design, Associate Professor (2007-present)

Massachusetts Institute of Technology, Department of Architecture, Associate Professor (2006-2007)

Massachusetts Institute of Technology, Department of Architecture, Alfred Henry and Jean Morrison Hayes Career Development Chair (2003-2006)

Massachusetts Institute of Technology, Department of Architecture, Assistant Professor (2001-2006)

University of Michigan, Department of the History of Art, Visiting Assistant Professor (1999-2000)

University of Michigan, Department of Romance Languages and Literatures, Lecturer (1995-1996)

University of California, Berkeley, Department of History of Art, Graduate Student Instructor (spring 1990, spring 1991, spring 1992, spring 1995)

Selected Publications

Books:

• *Sculpture and Enlightenment* (Los Angeles: Getty Research Institute, 2009), Finalist/Honorable Mention, Association of American Publishers 2009 PROSE Awards

Edited volumes:

• with Preston Scott Cohen, *The Return of Nature: Sustaining Architecture in the Face of Sustainability* (New York: Routledge, forthcoming 2012)

• with Patrick Haughey, eds., *Concerto Barocco: Essays in Honor of Henry A. Millon*, special issue of *Thresholds* 28 (Spring 2005)

• with Stephen Melville, Philip Armstrong, eds., *Polemical Objects*, special issue of *Res. Anthropology and Aesthetics* 46 (Autumn 2004)

• ed., *Writing on Drawing*, special issue of *Representations* 72 (Fall 2000)

Journal Articles:

• with Malcolm Baker, Guilhem Scherf, and Hans Körner, "Débat: La sculpture du XVIII^e siècle," *Perspective, la revue de l'INHA* 3 (July 2011): 283-297

• "Historical Pyrrhonism and Architectural Truth," *Journal of Visual Culture* (Dec. 2010): 329-343

• "Architecture at the Threshold," *Perspecta* 43 (Sept. 2010): 200-208

• "Preliminary Thoughts on Piranesi and Vico," *Res. Anthropology and Aesthetics* 53/54 (Spring/Fall 2008): 150-165

• "Julien's Poussin, or the Limits of Sculpture," *Res. Anthropology and Aesthetics* 46 (Autumn 2004): 134-153

• with Philip Armstrong, Stephen Melville, "Ad Rem," *Res. Anthropology and Aesthetics* 46 (Autumn 2004): 1-8

• "The Object of Contempt," *Yale French Studies* 101 (Spring 2002): 32-53

• "Riegl, Archaeology, and the Periodization of Culture," *Res. Anthropology and Aesthetics* 40 (Autumn 2001): 135-152

• "Drawing at the Crossroads," *Representations* 72 (Fall 2000): 64-81

Reviews articles and reviews:

• "Jacqueline Lichtenstein: *The Blind Spot*," *Art Bulletin* (Dec. 2010): 391-395

• "Eros-en-valise: Helen Molesworth, *Part Object Part Sculpture*," *Art Journal* (Fall 2007): 122-126

• "Mary Sheriff, *Moved by Love: Inspired Artists and Deviant Women in Eighteenth-Century France*," *The Art Bulletin* LXXXVII/4 (Dec. 2005): 724-728

• "Carol Armstrong, *Scenes in a Library*; Ann Bermingham, *Learning to Draw*; Stephen Bann, *Parallel Lines*," *The Art Bulletin* LXXXV/1 (Mar. 2003): 196-202

Professional Memberships:

Association of Art Historians, College Art Association, Modern Languages Association, British Society of Eighteenth-Century Studies

Paul Wesley Nakazawa, AIA, NCARB

Lecturer in Architecture

Courses Taught:

FALL 2010	1301	RioStudio
FALL 2010	7408	A New Framework for Practice
FALL 2009	7408	A New Framework for Practice

Education:

Master in Architecture, 1979 – Harvard University
Master in Business Administration, 1974 – University of Chicago
Bachelor of Arts, 1973 – University of Chicago

Teaching Experience:

Teaches practice and option studios in the Department of Architecture at Harvard University, Graduate School of Design (GSD). Previously taught vertical design studios (graduate and undergraduate) and professional practice at Southern California Institute of Architecture (SCIARC), and undergraduate design studios at the University of North Carolina at Charlotte. Former executive coordinator for SCI-FI, a post-graduate master in architecture program at SCIARC. Lectures at the Architectural Association (AA), London. External Examiner for the AA.

Professional Experience:*Practice (1982-Present)*

Registered Architect since 1982. Currently registered in six states and certified by NCARB. Has extensive experience in the US and internationally as a principal and/or company director of architectural and multi-disciplinary firms, including: Safdie Architects, Boston; Machado and Silvetti Associates, Inc., Boston; Ehrenkrantz, Eckstut & Kuhn Architects, New York; TRO/Jung Brannen, Boston. Founding shareholder and former company director, AMO, Inc., New York, the research and development arm of the Office for Metropolitan Architecture, Rotterdam.

Practice Consulting (1993-Present)

Consultant for the development of practice and business to leading firms in the disciplines of architecture, landscape architecture, urban design, and other allied fields. Clients have included: Office for Metropolitan Architecture, Rotterdam; Morphosis, Los Angeles; UN Studio, Amsterdam; Coop Himmelblau, Vienna; Snøhetta, New York; Michael van Valkenburgh and Associates, New York; Reed Hilderbrand, Cambridge; and many others.

Licenses/Registration:

Registered Architect – Connecticut, Illinois, Massachusetts, New Jersey, New York, North Carolina.
NCARB certificate holder.

Selected Publications:

Published articles and interviews in *Architecture* (US), *Architectural Record* (US), *Urban Land* (US), *Arquine* (Mexico), *Projecto* (Brazil), *Building Design* (UK), *World Architecture* (UK). Citations in numerous professional, trade and international press.

Selected Research:

Research focus on the social, economic, programmatic and spatial impacts of globalization on major urban regions. Specifically, the study of economic “super-clusters,” high concentrations of capital investment and world-class talent in delimited urban geographies. Recipient of two grants (2010) from Harvard University David Rockefeller Center for Latin American Studies (DRCLAS) regarding “Sustainable Development of Regional Economic Clusters and Networks” in Brazil. Currently working with other faculty members toward establishment of a shared research platform between the GSD and the Pontifícia Universidade Católica do Rio de Janeiro.

Professional Memberships:

American Institute of Architects
Boston Society of Architects
American Physical Society (American Institute of Physics)
New York Academy of Sciences

Antoine Picon

G. Ware Travelstead Professor of the History of Architecture and Technology

Courses Taught:

SPRING 2011	3504	PhD Methodology Seminar
SPRING 2011	4204M4	Buildings, Texts, and Contexts
SPRING 2011	4418	Beginnings of Architecture
SPRING 2010	4204M4	Buildings, Texts, and Contexts
SPRING 2010	4355	Architecture, Science and Technology, XVIIIth Century-Present

Education:

1976-1979, Ecole Polytechnique, Paris. Master of Science and Engineering.
1979-1981, Graduate of the Ecole Nationale des Ponts et Chaussées, Paris. Master of Engineering
1979-1984, Graduate of the Ecole d'Architecture de Paris-Villemin. Master of Architecture.
1985-1991, Doctor in history of the Ecole des Hautes Etudes en Sciences Sociales, Paris. PhD in History.
1994, Habilitation to supervise doctoral studies awarded by the Ecole des Hautes Etudes en Sciences Sociales, Paris.

Teaching Experience:

2010-Present, G. Ware Travelstead Professor of the History of Architecture and Technology at Harvard Graduate School of Design.
2008-Present, Co-Chair of the Doctoral Programs at Harvard Graduate School of Design.
2005-2008, Director of Doctoral Programs at Harvard Graduate School of Design.
2002-2010, Professor of the History of Architecture and Technology at Harvard Graduate School of Design.
1997-2002, Professor at the Ecole Nationale des Ponts et Chaussées.

Professional Experience:

1994-1997, Director of research at the Laboratoire Techniques, Territoires et Sociétés of the Ecole Nationale des Ponts et Chaussées.
1984-1994, Researcher at the Laboratoire Techniques, Territoires et Sociétés of the Ecole Nationale des Ponts et Chaussées, and at the Ecole d'Architecture de Paris-Villemin.
1981-1984, Coordinator of architectural research at the Bureau de la Recherche Architecturale, Ministère de l'Équipement.

Selected Publications:

Books:

Antoine Picon, *Les Saint-simoniens Raison, Imaginaire et Utopie*, Paris, Belin, 2002, 384 p.
Antoine Picon, *Tra Utopia e Ruggine: Paesaggi dell'Ingegniera dal Settecento a Oggi*, Turin, Umberto Allemandi & C., 2006, 157 p.
Antoine Picon, *Marc Mimram Architecte-Engineer: Hybrid[e]*, Gollion, Infolio, 2007, 240 p.
Digital Culture in Architecture: An Introduction for the Design Professions, Birkhäuser, Basel, 2010, 224 p. French translation: *Culture Numérique et Architecture: Une Introduction*, Birkhäuser, Basel, 2010, 224 p.

Books Edited:

Michèle Riot-Sarcey, Thomas Bouchet, Antoine Picon (ed.), *Dictionnaire des utopies*, Paris, Larousse, 2002, 284 p. Reprint of the French version in 2006 and 2008. Turkish translation: *Ütopiyalar Sözlüğü*, Istanbul, Sel Yayıncılık, 2003. Portuguese translation *Dicionário das utopias*, Lisbon, Texto E Grafia, 2009.
Antoine Picon, Alessandra Ponte (ed.), *Architecture and the Sciences: Exchanging Metaphors*, New York, Princeton Architectural Press, 2003.

Scientific Editions:

J.-N.-L. Durand, *Précis of the Lectures on architecture with Graphic portion of the Lectures on architecture*, English translation of the *Précis des leçons d'architecture données à l'École polytechnique de 1802-1805*, and the *Partie graphique des cours d'architecture faits à l'École royale polytechnique depuis sa réorganisation de 1821*, with an essay by Antoine Picon, "From "Poetry of Art" to Method: The theory of Jean-Nicolas-Louis Durand", Los Angeles, The Getty Research Institute, 2000, 346 p.
P. Enfantin, *Lettres sur la Vie Eternelle*, reprint of the original edition 1830-1831 of the letters of Enfantin to Duveyrier, François et Peiffer, with an essay by Antoine Picon, "La Vie Eternelle au Siècle de l'Industrie", Paris, Le Corridor Bleu, 2004, 108 p.

Scientific Articles:

Antoine Picon, "Architecture Numérique", in Ph. Dagen, F. Hamon (ed.), *Histoire de l'Art: Époque Contemporaine XIXe-XXIe Siècles*, Paris, Flammarion, 2011, pp. 604-605.
Antoine Picon, "Architecture and the Virtual: Towards a New Materiality", in *Zhuangshi*, 2011, n° 4 et 5, pp. 38-43, 44-49.
Antoine Picon, "Nature et Ingénierie: Le Parc des Buttes-Chaumont", in *Romantisme. Revue du Dix-Neuvième Siècle*, n° 150, 4th trimester 2010, pp. 35-49.
Antoine Picon, "De la Ruine à la Rouille: Les Paysages de l'Angoisse", in *Marne: Documents d'Architecture*, volume 1, December 2010, pp. 277-299.
Antoine Picon, "The First Steps of Construction in Iron: Problems Posed by the Introduction of a New Construction Material", in M. Rinke, J. Schwartz (eds.), *Before Steel: The Introduction of Structural Iron and its Consequences*, Zürich, Verlag Niggli, 2010, pp. 51-63.

Spiro N. Pollalis

Professor of Design Technology and Management

Courses Taught:

SPRING 2011	6339	Towards a Sustainable Infrastructure
FALL 2010	5333	Sustainable New Cities
FALL 2010	6201	Analysis and Design of Building Structures I
SPRING 2010	7222	The Bilbao Guggenheim Museum: Topics in Project Management
SPRING 2010	9206A	Rethinking a Library and a YMCA: the case of Warrensville Heights
SPRING 2010	9206A02	Towards A Sustainable Infrastructure
FALL 2009	7411	Design and Development: from Concept to Implementation
FALL 2009	9206A	Toward Socially-inclusive Sustainable Development
FALL 2009	9206A02	Rethinking Ekistics in the Information Age

Education

1994	Harvard University Cambridge, Massachusetts, Honorary Masters Degree in Architecture.
1980-82	Massachusetts Institute Of Technology Cambridge, Ma. Doctor of Philosophy in Civil Engineering, June 1982. Thesis on Analytical and Numerical Techniques for Predicting the Lateral Stiffness of Piles.
1983-85	Northeastern University Boston, Massachusetts Master's in Business Administration with specialization in High Technology, September 1985.
1977-79	Massachusetts Institute of Technology Cambridge, Ma. Master of Science in Ocean Engineering and Master of Science in Civil Engineering, February 1979. Thesis on Dynamic Analysis of Fixed Marine Structures.
1972-77	National Technical University of Athens Athens, Greece Diploma in Civil Engineering (5-year course), June 1977. Concentration on Structural Engineering.

Current Research

- IT-based space planning and visualization (sponsored by Microsoft and McGraw Hill)
- Project management of high profile buildings: project delivery and organizational schemes (sponsored by GSA)
- Energy efficient buildings: Building Envelopes consortium and portal (sponsored by a CDI and MIT led industry consortium)
- Contractual relations for IT-enabled projects (in collaboration with Gadsby Hannah LLP)
- Contemporary signature bridge design

Books:

- Becerik, B., and S.N. Pollalis, *Computer-Aided Collaboration in Managing Construction*, Harvard Design School, 2006.
- Pollalis, S.N., *Pockets of Innovation in Real Estate, Construction and the Internet*, Center for Design Informatics, Harvard Design School, 2002.
- Peiser, R, and S.N. Pollalis, *Mapping the Present: Real Estate, Construction and the Internet*, edited by K. Cacace, Harvard Design School, June 2001.
- Geraedts, Rob, *Remote Teaching: Prof. S.N. Pollalis in M2. Educational and Organizational Issues: Facts and Experiences*, Delft University of Technology, Faculty of Architecture, Department of Real Estate & Project Management, August 2000.
- Wiske, Martha Stone, David Eddy Spicer, Jae-Eun Joo, and James Moore. *Stretching Time and Space: New Educational Technologies at the Harvard Design School*, Harvard School of Education, November 2000.
- Pollalis, S.N., *What is a Bridge?*, MIT Press, Cambridge, 1999, paperback edition: 2002.
- Menheere, S.C.M. & S.N. Pollalis *Case Studies: Build Operate Transfer*, Bouwkunde, TU-Delft, 1996.
- Pollalis, S.N., editor *Uncertainty and Risk in International Construction Markets* Graduate School of Design, Harvard University, Cambridge MA, 1996.
- Menheere, S.C.M, S.N. Pollalis, and A.J. Bol *Hong Kong & China under Development* IPMMC, Utrecht, 1995.
- Pollalis, S.N., *Case Studies: Management and Technology in the Design Process*, Bouwkunde, TU-Delft, 1993.
- Pollalis, S.N., *Computer-Aided Project Management: A Visual Scheduling and Control System*, Vieweg Verlag, Wiesbaden, 1993.
- Pollalis, S.N., *A Visual Representation System for the Scheduling and Management of Projects*, AKS Publications, Delft, 1992.
- Pollalis, S.N., editor, *Architecture: Design Implementation*, ACSA, Washington DC, 1991.
- Pollalis, S.N., editor, *Microcomputers in Engineering Practice*, Boston Society of Civil Engineers Section of the American Society of Civil Engineers, Boston, 1986.

Papers, Conference Lectures, Interviews

- Pollalis, S.N., Planning BOT Projects, 2006, *International BOT Conference*, Dubai, December 9, 2006 .
- Pollalis, S.N., *A Competitive Model for Technology and City Planning: The Synergy of a Digital Urban Grid, a Wireless Cloud and Digital Architecture* , u-Happy conference, Seoul, November 16, 2006.
- Ku, K., and Pollalis, S.N., *3D Model-based Collaboration and Geometry Control: Research Needs for Contractual Standards: A Case Study of the Main Street Bridge, Columbus, Ohio*. European Conference on Product and Process Modeling, September 13-15, 2006, Valencia, Spain.
- Panushev, Ivan, S., and Spiro N. Pollalis, A Framework for delivery of Integrated Building Information Modeling, International Conference on Computing in Civil and Building Engineering, June 14-16, 2006, Montreal, Canada.

Christoph F. Reinhart

Associate Professor of Architectural Technology

Courses Taught:

SPRING 2011	6205	Environmental Technologies in Buildings
SPRING 2011	6332	Day-Lighting Buildings
SPRING 2010	6205	Environmental Technologies in Buildings
SPRING 2010	6420	Thermal Analysis of Buildings
FALL 2009	6112M2	Energy, Technology and Building
FALL 2009	6332	Day-Lighting Buildings
FALL 2009	7330	Design Research Methods

Education:

- 2001 Dr. Ing. Architecture, Technical University of Karlsruhe, Germany; Dissertation: *Daylight Availability and Manual Lighting Control in Office Buildings*.
- 1997 Dipl.-Phys., Albert-Ludwigs Universität, Freiburg, Germany;
M.Sc. Physics, Simon Fraser University, Vancouver, Canada

Teaching Experience:

- since 2008 Associate Professor of Architectural Technology, Harvard University, Graduate School of Design
- 2005 – 2007 Adjunct Professor, McGill University, School of Architecture

Professional Experience:

- 2004 – 2008 Associate Research Officer, National Research Council Canada
- 2001 – 2004 Assistant Research Officer, National Research Council Canada
- 1997 - 2001 Junior Researcher, Fraunhofer Institute for Solar Energy Systems, Germany

Recent Research:

- since 2002 DAYSIM, PI *Main developer of the daylighting design tool DAYSIM. The tool a user base in 96 countries affiliated to over 3500 Architecture & Engineering firms, universities and research institutions (www.daysim.com).*
- since 2010 EFRI-SEED: CREATING OPPORTUNITIES FOR ADAPTATION BASED ON PULSE (POPULATION IN URBAN LANDSCAPE FOR SUSTAINABLE BUILT ENVIRONMENT), Co-PI *National Science Foundation \$2,000,000 over 4 yr; PI: J Srebric (Penn State), Co-PI: J Spengler (Harvard School of Public Health).*
- 2010– 2011 DEVELOPMENT OF A CERMAIC SHADING SYSTEM, Co-PI *ASCER (Tiles of Spain) \$100,000 over 1 yr; Co-PI: M Bechthold.*
- 2009– 2011 THE USE OF BUILDING ENERGY SIMULATIONS DURING DESIGN, CONSTRUCTION AND OPERATION – AN OWNER’S PERSPECTIVE, PI *Development of Energy Modeling Guidelines for Harvard University; collaboration with the Harvard Office for Sustainability. Harvard Real Estate Academic Initiative \$37,000 over 2 yr.*
- 2009 – 2010 VISUAL COMFORT IN OPEN PLAN ENVIRONMENTS, PI *Dean’s Annual Research Grant Program \$27,000.*
- 2009 – 2010 THE DAYLIGHTING DASHBOARD, PI *Autodesk \$20,000.*
- 2009 – 2010 A RULE-OF-THUMB BASED DESIGN SEQUENCE FOR DAYLIGHTING, PI *William F Milton Fund. \$35,000.*

Selected Publications:

In Preparation

- Reinhart C F, *Daylighting Manual*, textbook on daylighting, Birkhäuser, Basel, to be published in 2012
- C F Reinhart, J Niemasz, J Mussman, M A St. Hilaire, E B Klerman, S Lockley, “Circadian Performance and Alertness in Daylit Classrooms: A Simulation Study”

Books And Book Chapters

- Reinhart C F, “Simulation-based Daylight Performance Predictions” book chapter in *Building Performance Simulation for Design and Operation*, Editors J Hensen and R Lamberts, Taylor & Francis, 2011.
- Reinhart C F, Wambsganß M, “Zusammenspiel Kunstlicht/Tageslicht.” chapter in *Bürogebäude mit Zukunft – Konzepte, Erfahrungen, Analysen*, TÜV Verlag, Colon, Germany, pp.118-130, 2005. (The book won the 2005 Innovation Price of the German Printing Industry.)
- Reinhart C F, “Energy Efficient Solar Buildings.” chapter in *The Future for Renewable Energies: Prospects and Directions*, James & James, London, pp. 79-114 , 2002.
- Reinhart C F, *Daylight Availability and Manual Lighting Control in Office Buildings – Simulation Studies and Analysis of Measurements*. Fraunhofer IRB Verlag, Stuttgart, Germany, 2001.

Papers In Refereed Journals

- C F Reinhart, T Dogan, D Ibarra and H W Samuelson, "Learning by doing – Teaching energy simulation as a game", submitted to the Journal of *Building Performance Simulation*, June 2011
- J A Jakubiec and C F Reinhart, “The „adaptive zone” – A concept for assessing glare throughout daylit spaces”, accepted for publication in *Lighting Research and Technology*
- C F Reinhart and J Wienold, "The Daylighting Dashboard - A Simulation-Based Design Analysis for Daylit Spaces", *Building and Environment*, 46:2, pp. 386-396, 2011.
- Reinhart C F, LoVerso V, “A Rules of Thumb Based Design Sequence for Diffuse Daylight”. *Lighting Research and Technology*, 42:1, pp.7-32, 2010.

Ingeborg M. Rocker

Associate Professor of Architecture

Courses Taught:

SPRING 2011	1102	Second Semester Core: Introduction to Design and Visual Studies in Architecture
FALL 2010	1101	First Semester Core: Introduction to Design and Visual Studies in Architecture
FALL 2010	9101	On The Bri(n)ck: Architecture of the Envelope
SPRING 2010	1202	Fourth Semester Core: Architectural Design
FALL 2009	1101	First Semester Core: Introduction to Design and Visual Studies in Architecture
FALL 2009	9206A03	On the Bri(n)ck: Architecture of the Envelope

Education:

2010	Princeton University, Princeton, USA Graduate School of Architecture; Ph. D.; Topic: Emerging Structures: Information Aesthetics and Architectures of the Digital Medium
1999 – 2003	Princeton University, Princeton, USA Graduate School of Architecture; MA (Master of Art in the History and Theory of Architecture)
2001 - 2002	Humboldt-Universität zu Berlin, Berlin, Deutschland Seminar für Ästhetik, Prof. Dr. Friedrich Kittler; Visiting Scholar
1995 - 1996	Columbia University, New York, USA Graduate School of Architecture, Planning and Preservation; MSAAD with prize
1994 - 1995	Rheinisch-Westfälische Technische Hochschule Aachen, Aachen, Germany Diploma with distinction, Best of the Year
1993 - 1994	University of Washington, Seattle, USA Graduate School of Architecture and Urban Planning
1988 - 1993	Rheinisch-Westfälische Technische Hochschule Aachen, Aachen, Germany Architecture
1987 - 1988	Rheinische Friedrich-Wilhelms-Universität Bonn, Germany Heinrich-Heine-Universität Düsseldorf, Germany Biology
1978 - 1987	Bischöfliche Maria-Montessori-Gesamtschule, Krefeld, Deutschland Abitur 1,9

Teaching Experience:

2005-present	Assistant Professor Harvard University, Graduate School of Design, Cambridge, USA
2005	Lecturer Princeton University, School of Architecture, Princeton, USA
2004	Lecturer University of Pennsylvania, School of Design, Department of Architecture, Philadelphia, USA
2002 - 2004	Instructor Princeton University, School of Architecture, Princeton, USA
2002 - 2003	Assistant Instructor Princeton University, School of Architecture, Princeton, USA
1999 - 2001	Assistant Instructor Princeton University, School of Architecture, Princeton, USA
2000	Initiator of the Doctorial Seminar in Architecture and Philosophy Parsons School of Design, New York, USA
1996	Assistant Instructor Columbia University, Graduate School of Architecture, Planning and Preservation, Columbia University, New York, USA
1992 - 1993	Student Tutor Rheinisch-Westfälische Technische Hochschule Aachen, Fakultät für Architektur, Aachen, Germany

Selected Publications:

Books:

2005 • *Re-Coded: Studio Rocker* Exhibition Catalogue, (Berlin: Aedes Gallery, 2005), 156 pages.

Chapters in Books:

- 2011 • "Recursions: Emerging Structures of Computer Generated Art and Architecture." In, Tomas Valena, Tom Avermaete and Georg Vrachliotis (eds.), *Strukturalismus in Architektur & Städtebau reloaded*. Book in Collaboration with TU Munich, TU Delft and ETH Zurich.
- 2011 • "Parametric Prototypes." In, Tom Verebes (ed.), *New Computational Paradigms: Parametrics & Prototypes*," (Xi'an: XUAUT Publications, Xi'an University of Architecture and Technology).
- 2010 • "Interface: between Analog and Digital Systems." In Aaron Sprecher, Shai Yeshayahu, and Pablo Lorenzo Eiroa (eds.), *Proceedings Acadia Conference 2010*, (New York City: The Cooper Union, USA).
- 2009 • "Computation in command? Fading Flamboyant Architectural Aesthetics." In: *Proceedings Second International Conference on Critical Digital: ,Who cares?' 18-19 April 2009, Harvard University, Graduate School of Design, ed. Kostas Terzidis*, (Cambridge: Harvard University, 2009), 9 – 11.
- 2008 • "Berechneter Zufall. Max Benses Informationsästhetik." In D. Gethmann, S. Hauser (Hg.) *Kulturtechnik Entwerfen: Praktiken, Konzepte und Medien in Architektur und Design Science*, (Bielefeld: transcript, 2009), 245 – 268.
 - "Architectures of the Digital Realm: Experimentations by Peter Eisenman | Frank O. Gehry." In J. Gleiter, N. Korrek, G. Zimmerman (Hg.), *Die Realität des Imaginären - Architektur und das digitale Bild, 10. Inter-nationales Bauhaus Kolloquium Weimar 2007*, (Weimar: Bauhaus-Universität Weimar, 2008), 249 – 262.

Articles in Magazines:

- 2011 • "A propos Parametricism: If, in what style should we build?" *Log*, (January 2011): 89-100.
- 2010 • "Analyzing Peter Eisenman," *Constructs, Yale School of Architecture* (Fall 2010): 10-11.
- 2010 • "Interview: Idea driven Practices," *Harvard Design Magazine*, no 32, (Spring/Summer 2010): 106-113.
- 2009 • "Vom Ornament zum Muster: Ästhetische Strukturen der 60er Jahre," *Zona* (Beilage *Abitare* 494) 4, (August 2009): 18–22. Engl. u. Germ. Translation X-XVI.

Allen Sayegh

Adjunct Associate Professor of Architectural Technology

Courses Taught:

SPRING 2011	2314	Responsive Environments
FALL 2010	2324	Augmented Architecture
SPRING 2010	1320	TRACES
SPRING 2010	2314	Responsive Environments
FALL 2009	2310	Sculpting in Motion

Education:

Harvard University Graduate School of Design, MDesS Digital Media 1996
American University of Beirut, Bachelor of Architecture 1992
Yerevan State University School of Engineering and Architecture Honorary PhD 2010

Teaching Experience:

2011 to Present	Harvard University Graduate School of Design- Adjunct Associate Professor of Architectural Technology
2010 to Present	Harvard University Visual and Environmental Studies Visiting Professor/Artist
2000 to 2011	Harvard University Graduate School of Design- Lecturer in Architecture
2008	Robert Reich School of Landscape Architecture Louisiana State University - Visiting Professor
2006 [Spring]	Graz University of Technology, Graz Austria - Design critic
1997-1998	Harvard University Graduate School of Design - Instructor

Professional Experience:

1999 to Present	INVIVIA Inc - President and Founder
1998-1999	Viant Corporation - Senior design consultant
1997-1998	Papyrus Inc - 3D Artist
1992-1994	Founding member DNA Studio

Selected Publications:

'Sculpting Motion' upcoming book, collaboration with Urs Hirschberg

Research, product releases, patents, inventions:

2006 Application switching via touch screen interface. Patent application. MS docket: 316100.01. [July 2006. Role played Lead Designer]
2006- Techniques for use with a calendar and messaging component. MS Dicket 318008.01. [December 2006 / January 2007. Role played Lead Designer]
Blob Body-Tracking technology [INVIVIA US patent pending]
Grand Prix Legends [Grand Prix Legends Video Game sold over 500,000 copies 1998-1999 Role: Lead Designer]
Harvard University 365 Years [Interactive CD-ROM design for Office of News and Public Affairs]
Projecting Beirut Interactive [CD-ROM GSD]

Professional Memberships:

DIGMA Design Industry Group of Massachusetts

Thomas Schroepfer

Associate Professor of Architecture

Courses Taught:

SPRING 2011	1202	Fourth Semester Core: Architectural Design
FALL 2010	1303	Dense + Green
SPRING 2010	1102	Second Semester Core: Introduction to Design and Visual Studies in Architecture

Education:

2004 Harvard University Graduate School of Design, Doctor of Design, Hochtief Full Scholarship.
2000 Harvard University Graduate School of Design, Master of Architecture with Distinction, Hochtief Scholarship.
1995 The Berlin University of the Arts, Germany, Diploma in Architecture (Dipl.-Ing. Arch.), *Summa Cum Laude (Gesamtnote Sehr Gut)*.
1995 The Cooper Union Irwin S. Chanin School of Architecture, Bachelor of Architecture, Cooper Union Full-tuition Scholarship.

Teaching Experience:

2009- Associate Professor, Harvard University Graduate School of Design.
2009 Visiting Researcher, Ecole Polytechnique Fdrale de Lausanne, Switzerland.
2005-2008 Assistant Professor, Harvard University Graduate School of Design.
2005 Visiting Researcher, National University of Singapore.
2004-2005 Design Critic, Harvard University Graduate School of Design.
2003-2004 Instructor, Harvard University Graduate School of Design.

Professional Experience:

2008 Leader, *Innovative Materials in Design*, Summer Workshop, Department of Architecture, INHA University, Korea.
2008- Editor, *Architectural Research Center Consortium Journal*.
2006-2007 Program Facilitator, *Inventioneering Architecture*, traveling exhibition and lecture series: Boston, Berlin, Dubai, Shanghai, Singapore, Switzerland. In collaboration with Swiss House for Advanced Research and Education (SHARE), Boston, MA.
2006- Consultant, *Harvard Allston Campus Project*, Cambridge, MA.
2003-2004 Architect, *B43*, Multi-family residence, Freiburg, Germany.
2001-2002 Project Leader, Research and Development Department, Hochtief Group, Essen, Germany.
2001-2002 Editor, *FuE Forum: Research and Development at Hochtief*
1997-2000 Architect, Hochtief Group, Essen, Germany
1995-1997 Architect, Studio Daniel Libeskind

Selected Publications:

Books:

Schroepfer, T. *Material Design*, Basel: Birkhuser (forthcoming Spring 2010).
Schroepfer, T., Christian Werthmann and Limin Hee *TransUrban: Charting Experiments for Cities of the Future Case Study 2: solarCity Linz*. Cambridge: Harvard University Graduate School of Design, 2008.
Schroepfer, T. *Globalization and Building Practice 2: Four case Studies in Asia*. Cambridge: Harvard University Graduate School of Design, (forthcoming).
Schroepfer, T., Christian Werthmann and Limin Hee *TransUrban: Charting Experiments for Cities of the Future Case Study 1: Vauban*. Cambridge: Harvard University Graduate School of Design, 2007.
Schroepfer, T. *Globalization and Building Practice 1: An Analytic Framework and Four Case Studies*. Cambridge: Harvard University Graduate School of Design, 2005.

Editorial Work

Member, Editorial Board *Architectural Research Center Consortium (ARCC) Journal*, since 2008.
Schroepfer, T. (subject ed.) *Principles of Construction: Facades*, Basel, Birkhuser, 2007.

Refereed Articles, Chapters, and Proceedings:

Schroepfer, T. and Limin Hee *Future Cities: Experiments in Sustainable Architecture and Urbanism*, in Sasha Tsenkova (ed.) *Urban Sustainability*, Calgary: University of Calgary Press, 2009.
Schroepfer, T. Possible Spaces, in Keyang Tang (ed.) *Story of Western Design Education*, Beijing: Peking University Press, 2009.
Schroepfer, T. Evaluating Green, in ACSA 97th Annual Meeting: *The Value of Design*, Washington: ACSA Press, 2009.
Schroepfer, T. and Limin Hee *Emerging Forms of Sustainable Urbanism*, in *Journal of Green Building*, Volume 3 Number 2, Glen Allen: College Publishing, 2008.
Schroepfer, T. *Exploring Materials in Design*, in *Folio 08*, Singapore: National University of Singapore, Department of Architecture, 2008.

Professional Memberships:

2008- Member, Editorial Board, *Architectural Research Center Consortium (ARCC)*. 2004- Member, Architecture Chamber, Baden-Wrttemberg, Stuttgart, Germany. 2004- Member, German Academic International Network. 1998-2004 Member, Architecture Chamber, Berlin, Germany.

Matthias Schuler

Adjunct Professor of Environmental Technology

Courses Taught:

SPRING 2010 6412 Sustainability

Education:

Diplom Ingenieur, M.S. Mechanical Engineering, University of Stuttgart, Germany

Teaching Experience:

Adjunct Professor of Environmental Technologies, Graduate School of Design, Harvard University

Lecturer, Graduate School of Design, Harvard University

University of Limerick

University of Stuttgart

Professional Experience:

2000 CEO and Partner, Transsolar Energietechnik GmbH

1992 Founder and Technical Director, Transsolar Energietechnik GmbH

Selected Publications:

Arch+, Harvard Design Magazine, XIA intelligente architektur and others

Suvarnabhumi Airport, Bangkok. AVedition 2007

BAYER Konzernzentrale, Birkhäuser 2004

POSTTOWER, Birkhäuser 2004

TRANSSOLAR – Climate Engineering, Birkhäuser

Architecture Engineering, Birkhäuser 2003

Glasbau Atlas. Edition Detail, 1st Edition, 1998. 2nd Edition, 2006.

Exhibitions:

Cloudscapes - Architectural Biennale 29th August – 21st November 2010

An indoor cloud based on the physical phenomena of saturated air and condensation droplets floated in an area of 8600sf in the Corderie del Arsenale. People crossed the 3–6.5ft thick cloud at a height of 10ft using the 250ft long ramp designed by Tetsuo Kondo interacting with different microclimatic conditions condensed within a few meters. *with Tetsuo Kondo Architects, Tokyo*

Mack Scogin, AIA

Kajima Professor in Practice of Architecture

Courses Taught:

SPRING 2011 1313 Your Space
SPRING 2010 1314 Where's Alice?

Education:

Master of Arts Honorary Degree, Harvard University, Graduate School of Design, Cambridge, Massachusetts, 2010
Bachelor of Architecture, Georgia Institute of Technology, College of Architecture, Atlanta, Georgia, 1966

Teaching Experience:

Kajima Professor in Practice of Architecture, Harvard University Graduate School of Design, Cambridge, MA, 2009–present
Kajima Adjunct Professor of Architecture, Harvard University Graduate School of Design, Cambridge, MA, 1990–2009
Herbert Baumer Distinguished Visiting Professor, The Ohio State University Austin E. Knowlton School of Architecture, Columbus, OH, 2003–2004
Chairman, Department of Architecture, Harvard University Graduate School of Design, Cambridge, MA, 1990–1995
Visiting Critic, Harvard University, Graduate School of Design, Cambridge, MA, 1989
Visiting Critic, Georgia Institute of Technology, College of Architecture, Atlanta, GA, 1987–1989
Visiting Critic, Rice University, School of Architecture, Houston, TX, 1984

Professional Experience:

Principal, Mack Scogin Merrill Elam Architects, Inc., Atlanta, GA, 2000–present
Principal, Scogin Elam and Bray Architects, Inc., Atlanta, GA, 1984–2000
President & Chief Operating Officer, Director of Design, Heery & Heery, Architects & Engineers, Inc., Atlanta, GA, 1981–1984
Vice President and Coordinator, Heery & Heery, Architects & Engineers, Inc., Atlanta, GA, 1978–1981
Senior Design Architect, Heery & Heery, Architects & Engineers, Inc., Atlanta, GA, 1967–1981

Licenses/Registration:

Connecticut Registered Architect / 2005; Georgia Registered Architect / 1972; Massachusetts Registered Architect / 2001;
New York Registered Architect / 2001; Pennsylvania Registered Architect / 2005 ; South Carolina Registered Architect / 2005 ;
Texas Registered Architect / 2003

Selected Publications:

Monographs

Mack & Merrill: The 1999 Charles & Ray Eames Lecture, University of Michigan, 2000
Scogin Elam and Bray: Critical Architecture / Architectural Criticism, Rizzoli, 1992

Essays And Text

GSA Design Awards 2004, "Jury Report" by Mack Scogin, Jury Chair, 2004
The Next Jerusalem, "The Palestine League" by Mack Scogin, The Monacelli Press, 2002
M Emory Games, "Introduction" by Mack Scogin, Rizzoli, 1995
AIA Reference Book 1993–1994, "AIA Atlanta Members, Mack Scogin." 1993
The American Dream, "Ernest Angley Lives the American Dream" by Mack Scogin, Georgia Institute of Technology, 1983

Exhibitions

"Exhibition of Work by Newly Elected Members and Recipients of Honors and Awards," American Academy of Arts and Letters, New York, New York, May–June 2011
"East and West Meet in Architecture Exhibition," Domus China, Joyart–798 Art District, Beijing, China, November 2010
"Maine Modern: 50 Years of Modern Architecture in Maine," Storefront for Architecture Maine, Portland, Maine, October–November 2010
"Southern Exposure: Contemporary Regional Architecture," Virginia Center for Architecture, Richmond, Virginia, February–June 2008
"Syracuse Builds: After the Masterplan," Syracuse University, School of Architecture, The Warehouse Gallery, Syracuse, New York, October–December 2007

Lectures and Symposia

"John Portman: A Life of Building" Screening and Panel Discussion with Ben Loeterman and Mickey Steinberg, High Museum of Art, June 2011
Harvard University, "The Eclipse of Beauty: Unsettling Beauty or Ugliness with Timothy Hyde, Catherine Ingraham and Mack Scogin" Symposium, April 2011
Harvard University, John Portman + Jack Portman with Mack Scogin, "Form," Discussion Moderator and Film Presentation, April 2010
Georgia Institute of Technology, Imagining a Better Future Symposium, Discussion Topic: "The Future as a Value / Commodity in the Present," March 2010
Buell Center, "Contemporary Architecture and Its Consequences: A meeting of US-based architects sponsored by the Temple Hoyne Buell Center for the Study of American Architecture, Columbia University," May 2009

Professional Memberships:

American Institute of Architects; U.S. Green Building Council Corporate Member

Jorge Silveti

Nelson Robinson Jr. Professor of Architecture

Courses Taught:

SPRING 2011	1318	The Architecture of Interstitial Urbanism
FALL 2010	3500	MArch II Proseminar
FALL 2009	3500	MArch II Proseminar

Education:

1983	M.A. (Hon.), Harvard University
1969	MArch, University of California at Berkeley
1966	Dipl Arch, University of Buenos Aires
1958	Degree in Musical Theory and Performance, Conservatorio de Musica de Buenos Aires

Teaching Experience:

1995-2002	Chairman, Department of Architecture, Harvard University Graduate School of Design
1983-90	Professor of Architecture in Design and Design Theory, Harvard University Graduate School of Design
1985-90	Director, Master in Architecture Degree Programs, Harvard University Graduate School of Design
1990-	Director, Master in Architecture thesis program, Harvard University Graduate School of Design
1992	Visiting Professor of Architecture, Nihon University
1982-86	Visiting Professor of Architecture, University of Palermo, Sicily
1980	Visiting Professor of Architecture, Polytechnic Institute of Zurich
1978-83	Associate Professor of Architecture, Harvard University Graduate School of Design
1975-78	Assistant Professor of Architecture, Harvard University Graduate School of Design
1973-75	Visiting Professor of Architecture, Carnegie-Mellon University
1969-73	Visiting Professor of Architecture, University of California at Berkeley

Professional Experience:

1985-present	Principal, Machado and Silveti Associates, Inc.
1974-85	Principal, Machado and Silveti Architecture and Urban Design

Selected Publications:

Invention/transformation: strategies for the Qattara/Jimi Oases in Al Ain / Editors: Jorge Silveti, Felipe Correa. Cambridge, MA: Harvard University Graduate School of Design, Abu Dhabi : Abu Dhabi Authority for Culture & Heritage (ADACH) [2010].

Introductions: Jorge Silveti, Edited by Rodolphe el-Khoury and with an essay by Preston Scott Cohen, Harvard Design School, 2004.

Superquadras, projections and pilotis: Design experiments on the preservation of Brasilia's architectural heritage / [author, Jorge Silveti et al. [Cambridge, MA] Harvard Graduate School of Design, 2004.

Enrique Norton; a house in the city / edited by Brooke Hodge, [photographs by Andrew Bush, foreword by Jorge Silveti]. Cambridge, Mass: Harvard Design School, 2003.

Buenos Aires natural + artificial : exploraciones sobre el espacio urbano, la arquitectura y el paisaje / Alberto Varas ; prólogo por Jorge Silveti ; Equipo de Investigación Buenos Aires 2000. Buenos Aires: Universidad de Palermo.

Architectural and Urban Environments of Sicily Volume 1: The First Year of Research by the Harvard University Graduate School of Design, Funded by the City of Caltagirone, Edited by: Jorge Silveti, Assistant editor: Thomas Rankin, Harvard University Graduate School of Design, 1989.

Ambiente architettonici e urbanistici della Sicilia: The first year of research by the Harvard Graduate School of Design / edited by Jorge Silveti; assistant editor Thomas Rankin. Cambridge, MA: Harvard University Graduate School of Design, c1989-

Mario Campi-Franco Pessina, Architects / essays by Werner Seligmann and Jorge Silveti; photographed and compiled by Eduard Hueber; series editor Kenneth Frampton. New York: Rizzoli, 1987.

Amancio Williams, Jorge Silveti, editor, Gabriel Feld, project assistant , Harvard University Graduate School of Design, 1987

On realism in architecture. In: *Harvard architecture review*, v. 1, Spring 1980

Answers to some questions that we didn't quite ask. In: *American Institute of Architects. Journal*, v. 68:6, Mid-May, 1979

Professional Memberships:

Member, Art of the Ancient World Visiting Committee at the Museum of Fine Arts, Boston, 2002 to present

Member, The Pritzker Prize for Architecture Jury, 1996 to present

Juror, Mies van der Rohe Prize for Latin American Architecture, 2000 to present

Fellow, American Academy in Rome

Member, Society of Fellows of the American Academy in Rome

Member, American Institute of Architects Awards of Excellence Juries in the following chapters: New York City, 1988; Los Angeles, 1994 and 1987; Iowa, 1987; Pennsylvania, 1983 and 1993

Juror, Progressive Architecture Awards, 1992

Christine Smith

Robert C. and Marian K. Weinberg Professor of Architectural History

Courses Taught:

SPRING 2011	4321	Rome and St. Peter's
SPRING 2011	4350	Michelangelo: Precedents, Innovations, Influence
FALL 2010	4358	Authority and Invention: Medieval Art and Architecture
SPRING 2010	4321	Rome and St. Peter's
SPRING 2010	4419	Hub of the Universe: Boston in the Gilded Age
FALL 2009	4358	Authority and Invention: Medieval Art and Architecture

Education:

Vassar College, 1962-66, B.A., magna cum laude

New York University, Institute of Fine Arts, M.A., October, 1968

New York University, Institute of Fine Arts, Ph.D., June 1975; Dissertation title: The Baptistery of Pisa

Teaching Experience:

1995- present:	Professor of the History of Architecture, Harvard University, Graduate School of Design
1993-1995:	Coordinator (department chair) for Art History, Syracuse University Program in Florence
1984-88, 90-93:	Lecturer, Syracuse University Program in Florence.
1981-88:	Adjunct Assistant Professor, Georgetown University, Charles Augustus Strong Center, Fiesole.
1985:	Lecturer, Smithsonian Institution, Research Associates Program, Washington, D.C.
1983-85, 1991:	Lecturer, University of Michigan and University of Wisconsin Program in Florence.
1983:	Lecturer on German Medieval Art at the Georgetown University Summer Session, Trier, West Germany.
1980-81:	Director, Summer Session, Rosary College Graduate School of Fine Arts, Villa Schifanoia, Florence.
1975-81:	Faculty Member, Rosary College Graduate School of the Fine Arts, Villa Schifanoia, Florence.
1980-81:	Lecturer, Summer Session, Michigan-Sarah Lawrence Program.
1979-86:	Lecturer, "Australians Study Abroad".
1979:	Lecturer, State University of New York, Urbino Program.
1979:	Lecturer, Hiram College, semester in Florence.
1978-80:	Lecturer, Summer Travel Seminar, State University of New York at New York at New Paltz: Adjunct Professor, 1980.
1977-80:	Guest Lecturer, Summer Travel Program, University of California at Berkeley.
1976-81:	Lecturer, California State University Colleges, semester in Florence.
1976-80:	Lecturer, State University Colleges of New York at Buffalo, semester in Florence.
1975-80:	Lecturer, Nasson College, semester in Florence.
1975:	Lecturer, Summer Session, Finch College Program in San Marino.
1975:	Part-time Lecturer, New York University.
1974-75:	Assistant Professor, Finch College.
1969-71:	Instructor in Florence, Finch College Junior Year Abroad Program.
1969:	Lecturer, Summer Session, New York University.
1969:	Part-time Instructor, Fashion Institute of Technology, New York
1968-69:	Teaching Assistant, City University of New York.

Selected Publications:

Work in Progress:

Architectural Descriptions in Western Europe and Byzantium. From Late Antiquity to the Renaissance, a collaborative project with Joseph O' Connor, Georgetown University (emeritus).

Maffeo Vegio: "De rebus antiquis memorabilibus S. Petri Romae", English translation and commentary on the text in collaboration with J. O'Connor.

Two Boston Cathedrals: Trinity Church and Holy Cross

Books:

Building the Kingdom. Giannozzo Manetti on the Material and the Spiritual Edifice, with Joseph O'Connor, MRTS, Tempe, 2007.

The Mosaics of St. Bartholomew's Church, New York, 2000.

Before and After the End of Time: Architecture and the Year 1000, Editor and principal author. Braziller, New York, 2000.

Retrospection: Baccio Bandinelli and the Choir of Florence Cathedral, Editor and principal author. Malden, 1997.

Architecture in the Culture of Early Humanism: Ethics, Aesthetics and Eloquence 1400-1460, Oxford University Press, New York, 1992.

The Chapel of St. Bartholomew's Church in the City of New York, Municipal Art Society, New York, 1991.

St. Bartholomew's Church in the City of New York, Oxford University Press, New York, 1988.

Klassische Ausgewogenheit innerhalb der Erscheinungsform des Neuen Realismus: George Soppelsa. Exhibition catalogue, Florence, 1981.

The Baptistery of Pisa, Garland Press: New York, 1978.

Ravenna, Scala: Florence, 1977.

Maryann Thompson, FAIA

Adjunct Professor of Architecture

Courses Taught:

SPRING 2011 7212 Issues in Architectural Practice and Ethics
FALL 2010 1201 Third Semester Core: Architectural Design
SPRING 2010 1202 Fourth Semester Core: Architectural Design
SPRING 2010 7212 Issues in the Practice of Architecture

Education:

Harvard University, Graduate School of Design, Master of Architecture, *Degree with Distinction, and the AIA Certificate of Merit for second highest academic standing.*

Harvard University, Graduate School of Design, Master of Landscape Architecture, *Degree with Letter of Commendation and the Kennedy Sheldon Knox Traveling Fellowship.*

Princeton University, B.A. Architecture, *Magna cum Laude.*

Teaching Experience:

2007- *Adjunct Professor*, Department of Architecture, Harvard University, Graduate School of Design.
2001-07 *Design Critic*, Department of Architecture, Harvard University, Graduate School of Design.
2001-06 *Thesis Advisor*, Department of Architecture, Harvard University, Graduate School of Design.
2000 *Visiting Associate Professor*, Department of Architecture, MIT.
1999 *Visiting Associate Professor*, Department of Architecture, MIT.
1998 *Harry S. Shure Professor of Architecture*, School of Architecture, University of Virginia.
1998 *Design Critic*, Department of Architecture, Harvard University, Graduate School of Design.
1998 *Distinguished Visiting Faculty from Practice*, College of Architecture and Urban Planning, the University of Michigan.
1997 *Visiting Faculty*, Department of Architecture, Rhode Island School of Design.
1995-96 *Design Critic*, Department of Landscape Architecture, Harvard University, Graduate School of Design.
1993 *Visiting Faculty*, School of Architecture, Northeastern University.
1992 *Visiting Adjunct Professor*, School of Architecture, Rice University.
1989 *Teaching Fellow*, Denise Scott Brown, Harvard Design School.
1988-89 *Studio Teaching Assistant*, Caroline Constant, Department of Architecture, Harvard University, Graduate School of Design.
1987-89 *Teaching Fellow*, Eduard Sekler, Harvard University, Graduate School of Design. Medieval and early 20th Century architectural history.

Professional Experience:

2000 Founder, Maryann Thompson Architects, Certified Woman-Owned Business in Massachusetts and New York

1989 Founding Partner, Thompson and Rose Architects

Licenses/Registration:

Massachusetts, Registered Architect since 1995;
New York, Registered Architect since 2003;
Connecticut, Registered Architect since 2005;
Ontario, Canada, Registered Architect since 2007;
Vermont, Registered Architect since 2010;
NCARB certified

Professional Memberships:

Fellow, American Institute of Architects

Elizabeth Whittaker

Adjunct Assistant Professor of Architecture

Courses Taught:

SPRING 2011	1102	Second Semester Core: Introduction to Design and Visual Studies in Architecture
FALL 2010	1101	First Semester Core: Introduction to Design and Visual Studies in Architecture
FALL 2009	1101	First Semester Core: Introduction to Design and Visual Studies in Architecture

Education:

Harvard University, Graduate School of Design, Masters in Architecture, 1999 *with Distinction*
North Carolina State University – School of Design, Bachelor of Environmental Design in Architecture, 1991

Teaching Experience:

Harvard University Graduate School of Design *Adjunct Assistant Professor of Architecture – July 2011*
Harvard University Graduate School of Design *Graduate Studio Instructor / Visiting Lecturer – Fall 2009/Spring 2011*
Massachusetts Institute of Technology *Graduate Studio Instructor / Visiting Lecturer - Spring 2009*
Northeastern University *Housing Studio Instructor / Visiting Lecturer – Fall 2007*
Boston Architectural College *Graduate Studio Instructor / Visiting Lecturer – Fall 2000*

Professional Experience:

Principal, MERGE architects Inc., Boston MA
Director-at-Large, Boston Society of Architects Board of Directors

Exhibitions / Installations

2010 „Social Boundaries: In or Out?“ - Midway Studios – Boston, Massachusetts
2008 „Parti Wall / Hanging Green“ Installation & Exhibition - Young Architects Boston (YAB) collaborative, Pink Comma Gallery – Boston, Massachusetts
2004 Olympic International Competition Exhibition - „Ephemeral Structures“ – Athens, Greece
2003 – “617” Emerging Artists - Villa Victoria – Boston, Massachusetts
1992 - Urban Residence for a Bibliophile - National Building Museum - Washington, D.C.

Professional Memberships:

Boston Society of Architects - Board of Directors, Director-at-Large (2006-2008)
YAB (Young Architects Boston) Design Collaborative, (Founded by Elizabeth Whittaker in 2008)
Boston Society of Architects Nominating Committee – (2011)
Boston Society of Architects Rotch Committee – (2008 – present)

Jay Wickersham, FAIA

Lecturer in Architecture

Courses Taught:

SPRING 2011	7212	Issues in Architectural Practice and Ethics
FALL 2010	7410	The Architect in History: The Evolution of Practice from the Renaissance to the Present
SPRING 2010	7212	Issues in the Practice of Architecture
FALL 2009	7410	The Architect in History: The Evolution of Practice from the Renaissance to the Present

Education:

Harvard Law School. J.D. 1994, *magna cum laude*.
Harvard Graduate School of Design, Master in Architecture, 1983.
Yale University. B.A. 1978, *summa cum laude*, Phi Beta Kappa.

Teaching Experience:

Harvard University Graduate School of Design, Lecturer in Architecture, 2000-present
Harvard University Kennedy School of Government, Lecturer in Planning and Environmental Law, 2000-present
Northeastern University, Department of Art and Architecture, Lecturer in architectural history, design, and theory, 1988-1990.

Professional Experience:

Founding Partner, Noble & Wickersham LLP, Cambridge MA
Assistant Secretary of Environmental Affairs, Commonwealth of Massachusetts, and Director of Massachusetts Environmental Policy Act (MEPA) Office, 1998-2002
Lawyer, Hill & Barlow, Boston MA, 1994-1998
Urban designer and planner, David Dixon & Associates, 1988-1991
Architect and Urban Planner at several Boston area design firms, 1983-1988

Licenses/Registration:

Registered lawyer and architect, Massachusetts

Selected Publications:

Books and Book Chapters:

"Reforming the Laws of Smart Growth and Sprawl," in *Sprawl: A Primer*, David Soule, Ed. (Island Press, 2004).
"Creative Zoning" (with Jack Wiggin), in *Community Preservation Handbook*, Elizabeth Hamin, ed. (UMass Press, 2004).
The State of Our Environment (Commonwealth of Massachusetts, Executive Office of Environmental Affairs, 2000).
"State and Regional Land Use Controls," in *Rathkopf's The Law of Zoning and Planning* (Clark Boardman Callaghan, 1996).
"Massachusetts Public Construction Law" (with Christopher Noble) in *Public Construction Law of the 50 States* (John Wiley: 1995).
"The Quiet Revolution Continues: The Emerging New Model for State Growth Management Statutes," *Harvard Environmental Law Review* (1994), reprinted in *1995 Zoning and Planning Law Handbook* (Clark Boardman Callaghan, 1995).
Mediation in the Preservation of Religious Properties (with Stanley Smith) (National Trust for Historic Preservation and Historic Boston, Inc., 1987).

Articles:

"Sacred Landscapes and Profane Structures: How Offshore Windpower Challenges the Environmental Impact Review Process," *Boston College Environmental Affairs Law Review* (Spring 2004).
"Educating Lawyers and Architects," *Architecture Boston* (Sept. 2003).
"EIR and Smart Growth," *Urban Land* (May 2003).
"Jane Jacobs's Critique of Zoning: From Euclid to Portland and Beyond," *Boston College Environmental Affairs Law Review* (2001).
"Managing Growth without a Growth Management Statute: The Uses of MEPA," *New England Planning* (April 2001).
"New Owner-Architect Agreement Seen as Favoring Architects" (with Penny Cobey), *Boston Business Journal* (Nov. 1997).
"D'Addario v. Cape Cod Commission: No Property Rights Revolution in the Courts," *Massachusetts Environment* (Sept. 1997).
"U.S. Supreme Court Endorses Use of TDRs," *New England Planning* (Aug. 1997).
"Anti-SLAPP Statutes," *Zoning and Planning Law Report* (Jan. 1997).
"Driving to Extremes: Planning to Minimize the Air Pollution Impacts of Cars and Trucks" (with Edith M. Netter), *Zoning and Planning Law Report* (Sept./Oct. 1993).
Architecture Editor, *Art New England*, 1989-92. Wrote feature articles on subjects including the new Urbanism, the Central Artery open spaces, regionalism in New England architecture, and the murals of Richard Haas.
"The Making of the Exeter Library," *Harvard Architecture Review* (1988).

Professional Memberships:

American Institute of Architects, elected to College of Fellows (2004); Director and Commissioner of Public Policy, Boston Society of Architects (2003-present); Trustee, The Boston Harbor Association (2003-present); Director, New England Chapter, Society of Architectural Historians (1990-92).

T. Kelly Wilson

Adjunct Associate Professor of Architecture

Courses Taught:

FALL 2010	2308	Drawing in the City of Rome (summer course)
SPRING 2010	2323	Spacial Ideas, Architectural Imagery: The Role of Drawing Towards Invention
FALL 2009	2101M1	Visual Studies
FALL 2009	2308	Drawing in the City of Rome (summer course)

Education:

1981	Master in Architecture, Harvard University
1978	Bachelor in Architecture, Auburn University
1977	Special Student Status, Graduate Architecture Studio, University of Virginia

Teaching Experience:

2000-	Adjunct Associate Professor of Architecture, Graduate School of Design (GSD), Harvard University
1996-2000	Assistant Professor of Architecture, Graduate School of Design (GSD), Harvard University
1997-	Harvard Rome Study Program, Program Director and Chief Critic
1996	MIT Rome Summer Program, Drawing Critic
1995	MIT Graduate School of Architecture, Visiting Assistant Professor
1993-96	Yale University Graduate School of Architecture, Visiting Critic
1987-95	Rhode Island School of Design, Sophomore Design studio critic, Drawing critic, Sophomore Architectural Design Critic and Coordinator
1978	Auburn University, Critic, Sophomore and Freshman Design Studio

Professional Experience:

1987-present	Independent Practice, Cambridge, MA. <i>Designer</i>
1983-1987	Schwartz/Silver Architects, Boston, MA., <i>Associate</i> .
1982-	The Architects Collaborative, Inc., Cambridge, MA.
1980-1982	Fred Koetter and Associates, Boston, MA.
1981	Sert Jackson and Associates, Cambridge, MA.

Selected Publications:

1997	<i>RISD Works In Progress</i> ; Fall Issue, The Roman Sketchbook <i>Harvard Design Magazine</i> , October Issue, Drawing Portfolio and essay
1992	<i>Architectural Rendering</i> , Quarto Books, Rotovision Publishers, Mies, Switzerland. Feature artists pg. 172.
1992	<i>Architecture</i> ; Wheeler School Library, Providence, RI. Publication of award winning design.
1991	<i>Architectural Record</i> ; Codex Corporate Headquarters. Rendering of the Great Atrium, Koetter-Kim Architects.
1990	<i>Boston: Past and Future</i> , publication edited by Alex Krieger. Designs and drawings executed for the Boston Plan of Fred Koetter.
1980	<i>The Harvard Advocate</i> , Advocate House Publishers, Cambridge, MA. Coverpiece.
1980	<i>Biennale de Paris</i> ; Urban Design Exhibition. Three projects exhibited from the Boston Plan.

Art Exhibitions:

2006	RISD Gallery, solo show
2005	Gurari Collections, Boston, MA, In + Around, solo show Spencertown Academy, Spencertown, NY, solo show
2004	Gund Hall Gallery, Harvard Univ., Resource Material, Location: Rome, two person show Gurari Collections, Boston, MA, New Work, solo show McCormick Gallery, Boston, MA, Group Show Art Access Gallery, Columbus, OH, Venice, Two Views, two person show
2003	McCormick Gallery, Boston, MA, Group Show Gurari Collections, Boston, MA, Sites + Sights, solo show
2002	Gurari Collections, Boston, MA, Recent Paintings, solo show Gurari Collections, Boston, MA, Mass to Light, solo drawing show
2001	Gurari Collections, Boston, MA, Above and Below, Bostons Big Dig, two person show. University Of Arkansas Gallery, Fayetteville, AK, Figured Light, solo show Bryan Roberts Gallery, Columbus, OH, Figured Light, solo show.
2000	Northeastern University, Boston, MA, Big Dig Shadows, Solo Show Harvard University, GSD, Cambridge, MA, Solid Fragments, Drawing Rome, solo show BEB Gallery, RISD, Providence RI, Industrial Landscape, three person show

Permanent Collections:

The Boston Public Library Collection of Prints and Drawings.
The Rhode Island School of Design, Office of the President.
Harvard University School of Design, Office of the Chairman
The Ralph Lauren Collection, New York, New York
Bain Capitol, Blasberg Collection, Boston
Curtis Collection, Boston

Andrew Witt

Lecturer in Architecture

Courses Taught:

FALL 2010 2107M1 Digital Media I

Education:

2007 Master of Architecture, *with Distinction*, Harvard University Graduate School of Design
2002 Master of Design, *with Distinction*, Harvard University Graduate School of Design
2001 B.S. Mathematics, B.A. Philosophy, *Summa Cum Laude*, Brigham Young University

Teaching Experience:

2010 Guest Lecturer, UPenn Paris, Paris, France
2009 Guest Lecturer, Swiss Federal Institute of Technology (ETH), Zurich, Switzerland
Guest Lecturer, Massachusetts Institute of Technology, Cambridge MA
2008 Visiting Faculty, Ecole Speciale D'Architecture, Paris, France
Guest Lecturer, Swiss Federal Institute of Technology (EPFL), Lausanne, Switzerland
2007 Guest Lecturer, Harvard University, Cambridge MA
2005 Visiting Faculty, Southern California Institute of Architecture, Los Angeles CA
Visiting Researcher, University of Hong Kong, Hong Kong, China

Professional Experience:

2009-present Director, Design Innovation. Gehry Technologies
2007-2009 Lead Consultant, Europe. Gehry Technologies
2004-2007 Senior Project Consultant and Project Consultant, Gehry Technologies
2003 Designer, Preston Scott Cohen Architects
2003 Design Collaboration Researcher, IBM Research. Thomas J. Watson Research Lab.
2002-2003 Design Informatics Researcher, Center for Design Informatics, Harvard University.

Selected Publications:

Oct. 2010 *Candide: The Journal of Architectural Knowledge*. "A Machine Epistemology in Architecture."
Sep. 2009 *Proceedings of the Design Modeling Conference*. "Large-scale Concurrent Design: The Case of Fondation Louis Vuitton" with Dennis Shelden and Tobias Nolte.
Sep. 2008 *Linear and Multilinear Algebra*. "Implicity Construction of Multiple Eigenvalues for Trees" with Charles Johnson and Brian Sutton.
Spring 2007 *Space Magazine*. Project "Seoul Long Beach"
Nov. 2007 *Surface Magazine*. Project "An Urban Hospital in Istanbul"
2004-2007 *GSD Studio Works*.
Summer 2004 *Proceedings of the 5th Conference on Designing Interactive Systems*. "Chat Spaces" with Werner Geyer et al.
Fall 2003 *Linear Algebra and Its Applications*. "On the Relative Position of Multiple Eigenvalues in the Spectrum of a Hermitian Matrix with a given Graph," with Charles Johnson et al.

Krzysztof Wodiczko

Professor in Residence of Art, Design and the Public Domain

Courses Taught:

SPRING 2011	2483	Interrogative Design: Animating Monuments
FALL 2010	2481	Interrogative Design: Projection/Instillation/Intervention
FALL 2010	2482	Art, Design and the Public Domain

Education:

Master of Fine Arts, (With Distinction) in Interior Architecture and Industrial Design from Academy of Fine Arts Warsaw (1968)
Honorary Degrees: Academy of Fine Arts in Poznan, Poland (2008), Maine School of Art (2007)

Teaching Experience:

Professor in Residence in Art, Design and the Public Domain, Harvard University, Graduate School of Design, 2010-present
Professor, Visual Arts Program, Department of Architecture, Massachusetts Institute of Technology, 1997-2010
Director, head: Interrogative Design Group, Center for Advanced Visual Studies, 1997-2010
New York University, Graduate Course in Public Art, Art Education Department (visiting professor, one semester) 2008
College of Architecture, Cornell University, Ithaca, New York (visiting professor one semester) 2008
College of Architecture, Cornell University, New York (visiting critic one semester) 2007
Maine College of Art, Portland, Maine (visiting faculty) 2000
Ecole Nationale Supérieure des Beaux Arts, Paris, France (professor) 1997
Department of Art and Design, Stanford University, California (visiting artist/lecture) 1994
Sculpture Department, Rhode Island School of Design, Providence (Visiting artist/lecture) 1993
Ecole Nationale Supérieure des Beaux Arts, Paris (Visiting Professor) 1991-1992
Department of Photography and Studio Art, California Institute of the Arts, Valencia, California (Assistant Professor) 1991
Summer Institute, Simon Fraser University, Vancouver (Visiting Professor) 1990
Sculpture Division, Cooper Union School of Art, New York (Visiting Professor) 1989
Academy of Fine Arts, Warsaw (Visiting Professor) 1988
Nova Scotia College of Art and Design, Halifax (Visiting Professor) 1985
South Australian School of Art, Adelaide, Australia (7-month residency/public lecture) 1981
Industrial Design Department, Ontario College of Art, Toronto (Instructor) 1979
Design and Studio Division, Nova Scotia College of Art and Design, Halifax (Visiting Professor) 1977-1979
Engineering and Aesthetics, Warsaw Polytechnic Institute (Instructor) 1970-1975
Basic Design Program, Department of Architecture of Interiors, Academy of Fine Arts, Warsaw (Teaching Assistant) 1969-1970

Professional Experience:

1970-1977 Chief industrial designer at Polish Optical Works (Polskie Zakłady Optyczne), Warsaw
1968-1970 Industrial designer at Central Industrial Design Bureau, of Polish Electronic Industry, UNITRA, Warsaw
1967-1976 Design Consultant Experimental Studio (Studio Experimentalne), Warsaw

Publications:

Selected films in distribution:

- Krzysztof Wodiczko: Projection in Hiroshima a film by Yosushi Kishimoto; Ufer! Art Documentary; Kyoto (VHS and DVD format, French and English subtitles) [Http://www.ufer.co.jp](http://www.ufer.co.jp)
- Krzysztof Wodiczko: Projections, a film by Derek May, production: National Film Board of Canada
- Krzysztof Wodiczko: Bunker Hill Projection, production: ICA Boston (DVD format) <http://www.artextbooks.com/ica.htm>
- Art 21: a Publication by Art in the Twenty-First Century: Season III DVD a PBS series <http://www.shoppbs.org/product/index.jsp?productId=2077665>

Permanent Public Art Projects

- Public School, Sunset Park, Brooklyn, New York City. (A permanent interior installation)
- Memorial to the Abolition of Slavery, Nantes, France, project developed with Julian Bonder, architect, (project in construction, to be completed in 2011).
- Facade of Public Safety Building, Cambridge a Responsive Illumination Project (completed in 2010)

Public Projections and Illumination Projects:

- Veteran's Flame, (Znicz wteranow), Wrocław (developed and realized with support support of the Festival Nowe Horyzonty and Stowarzyszenie rannych i poszkodowanych na misjach za granica. 2010
- Dublin Port, George Beckett Bridge, and other sites, Responsive Illumination (a proposal under consideration) 2010
- Facade of Public Safety Building, Cambridge a Responsive Illumination Project (completed) 2010
- Veterans Flame, Governors Island, New York City (developed with support of Creative Time organization) 2010
- Adam Mickiewicz Monument (organized by the Polish National Theater and the city of Warsaw to commemorate the anniversary of 1968 Polish students uprising) 2008
- Poznan Projection, Kings Castle, Interior projection Poznań, (developed with the support of Fundacja Signum and the Social Emergency and Homeless Center in Poznań 2008
- Facade of Zachęta Narodowa Galeria Sztuki, Warsaw 2005

Cameron Wu

Assistant Professor of Architecture

Courses Taught:

SPRING 2011	1102	Second Semester Core: Introduction to Design and Visual Studies in Architecture
FALL 2010	1101	First Semester Core: Introduction to Design and Visual Studies in Architecture
FALL 2010	2102M2	Projective Representation in Architecture
SPRING 2010	1102	Second Semester Core: Introduction to Design and Visual Studies in Architecture
FALL 2009	1101	First Semester Core: Introduction to Design and Visual Studies in Architecture
FALL 2009	2102M2	Projective Representation in Architecture

Education:

March 2003	Master of Architecture, Harvard University.
June 1993	B. S. E. Civil Engineering, Princeton University.

Teaching Experience:

July 2010-present	Assistant Professor of Architecture, Harvard University Graduate School of Design (Cambridge, MA)
Sep 2008–Jan 2010	Lecturer, Harvard University Graduate School of Design (Cambridge, MA)
Jan 2009–June 2010	Design Critic, Harvard University Graduate School of Design (Cambridge, MA)
Jan 2009–May 2009	Teaching Associate, Harvard University Graduate School of Design (Cambridge, MA)

Professional Experience:

Apr 2005–Dec 2008	James Carpenter Design Associates Inc (New York, NY)
Jan 2007–Present	Independent Design Practice (New York, NY & Cambridge, MA)
Sep 2003–Apr 2005	Independent Digital Media Practice (New York, NY)
May 2003–Jul 2003	Mack Scogin Merrill Elam Architects (Atlanta, GA)
Jun 1999–Apr 2003	Preston Scott Cohen, Inc (Cambridge, MA)
Mar 1997–Aug 1998	New Jersey Barn Company (Princeton, NJ)

Selected Publications:

2005-2009	Publication and credits of work made with James Carpenter Design Associates Inc. <ul style="list-style-type: none">• <i>The Architect's Newspaper</i>, October 06, 2009, "Farley Bound"• <i>The New York Times</i>, August 12, 2007, "A Museum To Get Lost In, and How Israel Is Fixing It"• <i>Environmental Refractions</i> (Birkhauser, Basel, 2006) Rendered illustrations for chapter titled "Apparatuses" including early film projects and Tulane Student Center.• <i>Architectural Record</i>, April 20, 2006, "Israel Museum Expansion Moving Forward"
2000-2003	Publication and credits of work made with Preston Scott Cohen Inc. <ul style="list-style-type: none">• -Rosa, Joseph. <i>Next Generation Architecture</i>. (Rizzoli, New York, 2003): Wu House• -<i>A+U Architecture and Urbanism</i> 01:05 No.368: Temporary MoMA proposal and Eyebeam Atelier competition• -<i>AA Files No.41</i> (Summer 2000) Regular Anomalies:The Case of the Tubular Embrasure of San Carlo ai Catinari

**Harvard University
Department of Architecture**

Visiting Team Report

Master of Architecture (degree + 3½ years)

The National Architectural Accrediting Board
15 March 2006

The National Architectural Accrediting Board (NAAB), established in 1940, is the sole agency authorized to accredit U.S. professional degree programs in architecture. Because most state registration boards in the United States require any applicant for licensure to have graduated from an NAAB-accredited program, obtaining such a degree is an essential aspect of preparing for the professional practice of architecture.

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I. Summary of Team Findings

1. Team Comments

The Harvard Graduate School of Design is a school of the highest stature within the world of architectural education. The School has attracted faculty of the highest caliber, each of whom has demonstrated excellence in the field of design or scholarship. The School is led by a distinguished Dean and the Architecture Department is led by an effective, dedicated and caring Head. A key resource of the School is its selected cadre of intelligent, inquisitive mature students who are eager to engage faculty in the process of becoming architects. The Department has the reputation of producing architects who are leaders in the profession and the worldwide architectural community.

Organization

The MArch I Program resides within the Architecture Department of the Harvard Graduate School of Design (GSD). The relationship of the GSD to the University is somewhat unusual in that the GSD operates to a great extent as an independent school within Harvard University. The GSD controls its own endowment and its own budget and derives less than 5% of its income from the University, generally in the form of grants. This administrative structure provides the GSD with considerable autonomy with the Dean reporting directly to the President

Harvard University does not have a school of art, and with the exception of the Carpenter Center located in Harvard College's undergraduate program, the GSD is the University's only "voice" for the arts within the context of the larger University. The void of arts within the University's programs provides the potential for the GSD to be the voice for art and design on the campus. The University also does not have a school of engineering; therefore, the GSD lacks the opportunity for coordinated technical interface and programs with the allied professions.

Students & Faculty

The students are bright, dedicated and committed with what appear to be excellent collaborative and communication skills. The student body is diverse with representation from around the world. The location of the studios on the open, terraced "trays" of Gund Hall physically contributes to the social and educational vitality of the student body.

There is a broad range of types of faculty including: endowed chairs; professors in practice; senior ladder faculty; lecturer's, adjunct and visitors. Harvard maintains a commitment to assuring the inclusion of internationally recognized professionals on the faculty.

Curriculum

The Program includes two years of core courses and studios with optional design studios in the fifth and sixth semesters and a thesis in the final semester. The Harvard system of using "case studies" is prevalent throughout the pedagogy of the school, which offers unique opportunities for critical thinking and an understanding of the issues that must be identified and addressed throughout the architectural design process. At times it appears that learning outcomes derived from the case study process may be different from those of a more traditional pedagogy and create outcomes that are broader or more holistic than the single topic format of the NAAB *Student Performance Criteria*.

Information and Other Resources

The school is supported by the outstanding Frances Loeb Library housing a variety of media and archive materials. The school is in the process of developing a comprehensive construction materials library.

The computer resources are commensurate with the quality of the school and student products demonstrate an understanding and proficiency with the provided hardware and software. The

shop facilities are expansive and include both traditional wood and metal shop facilities along with computer aided three-dimensional scanning, milling, laser cutting and rapid prototyping.

2. Progress Since the Previous Site Visit

Criterion 12.11 Non-Western Traditions

Awareness of the *parallel and divergent canons and traditions of architecture and urban design in the non-Western world*

Previous Team Report: Apart from the elective courses, the team could not find evidence that this criterion was being met. In view of the diversity of both the student body and the faculty and the global interest being addressed in many of the design studios, the team feels that a greater focus should be placed on non-Western history and building traditions.

This criterion is now met. Each student is required to take a course from a list of non-western history courses. In addition non-western content was included in the international studios and in the case studies of the materials courses.

Criterion 12.13 Environmental Conservation

Understanding of the *basic principles of ecology and the architects' responsibilities with respect to environmental and resources conservation in architecture and urban design*

Previous Team Report: Although we could not find any evidence in student work to satisfy this performance requirement we were told a search for a qualified teacher for this specialty is scheduled this year. The team recommends that this goal be expedited.

This criterion has been changed in the 2004 edition of the Conditions of Accreditation. Student Performance Criteria 13.15 Sustainable Design. This condition is still Not Met. The department has recently refocused the curriculum to assure an understanding of the science and principles of sustainability (energy conservation) with the goal of inculcating the culture of sustainability throughout the Program and especially in the studios. Unfortunately, this approach has not matured and evidence of principles of sustainability could not be found in the student work.

Criterion 12.19 Life-Safety Systems

Understanding of the *basic principles that inform the design and selection of life-safety systems in buildings and their subsystems*

Previous Team Report: The team was unable to find consistent evidence that all students understood the basic principles for the design and or the selection of life safety systems in buildings.

This criterion has been addressed since the previous visit and is now met; however, see the comments under that criterion.

Criterion 12.26 Building Economics and Cost Control

Awareness of the *fundamentals of development financing, building economics, and construction cost control within the framework of a design project*

Previous Team Report: The team could not find any evidence that satisfied this criterion. Students need to be introduced to the cost implications of design. Avoidance of this issue is one of the most critical failures in the education of the architect.

This criterion has been changed to Criterion 13.25 Construction Cost Control, and continues to be unmet. See comments under that criterion.

3. Conditions Well Met

Condition 3.9	Information Resources
Condition 3.10	Financial Resources
Condition 3.13.18	Structural Systems
Condition 3.13.24	Building Materials and Assemblies

4. Conditions Not Met

Condition 3.5	Studio Culture
Condition 3.13.15	Sustainable Design
Condition 3.13.16	Program Preparation
Condition 3.13.25	Construction Cost Control

5. Causes of Concern

The NAAB Team Visit

The rich faculty, student and physical resources were not well represented in the Architectural Program Report and the exhibits in the on-site Team Room. The APR relied too heavily on the overall attributes of the GSD and did not focus on the qualities of the MArch I Program under review. The Team Room initially presented only reductions of student work without the benefit of additional materials and the integration of supplementary written materials or physical models. The matrix and the course syllabi did not provide a concise summary of where evidence of conformance with the Conditions of Accreditation could be found. Considerable supplemental information was provided during the actual visit which greatly aided the review. The Program could benefit by sending representatives to courses in APR and Team Room preparation that are offered regularly by the NAAB.

II. Compliance with the Conditions for Accreditation

1. Program Response to the NAAB Perspectives

Schools must respond to the interests of the collateral organizations that make up the NAAB as set forth by this edition of the NAAB Conditions for Accreditation. Each school is expected to address these interests consistent with its scholastic identity and mission.

1.1 Architecture Education and the Academic Context

The accredited degree Program must demonstrate that it benefits from and contributes to its institution. In the APR, the accredited degree Program may explain its academic and professional standards for faculty and students; its interaction with other programs in the institution; the contribution of the students, faculty, and administrators to the governance and the intellectual and social lives of the institution; and the contribution of the institution to the accredited degree Program in terms of intellectual resources and personnel.

Met	Not Met
[X]	[]

There is little question the architecture Program benefits in being housed within the GSD, as well as Harvard University. This relationship allows the Program to attract an exceptional, diversified, and international student body and an exemplary faculty. The faculty is comprised of an important mix of nationally and internationally recognized designers, practitioners, theorists, and historians. The GSD provides excellent opportunities for interaction between the design disciplines through courses and design studios in which students from all design and planning disciplines may enroll.

While providing exceptional opportunities for international activities to its students, the Program is perceived as being somewhat insular by the University. Within this context, the GSD and the architecture programs hold a unique position in the University as one of the only units engaged in education in the creative arts and design. While this creates certain tensions within the University community, it provides the opportunity to generate offerings to the entire campus on design and the building arts. The opportunity exists to expose the broader educational community to the profession of architecture and educate future clients.

1.2 Architecture Education and Students

The accredited degree Program must demonstrate that it provides support and encouragement for students to assume leadership roles in school and later in the profession and that it provides an environment that embraces cultural differences. Given the Program's mission, the APR may explain how students participate in setting their individual and collective learning agendas; how they are encouraged to cooperate with, assist, share decision making with, and respect students who may be different from themselves; their access to the information needed to shape their future; their exposure to the national and international context of practice and the work of the allied design disciplines; and how students' diversity, distinctiveness, self-worth, and dignity are nurtured.

Met	Not Met
[X]	[]

Due to the diverse cultural and professional backgrounds of the students and faculty in the MArch I Program, exposure to national and international environments is ensured.

The Program itself recognizes that there are still some groups that are underrepresented; however, it is evident that the Program endeavors to achieve diversity.

In terms of academic development, students have the opportunity to individualize their studies and develop their personal interest by choosing advanced studio options that include international studio opportunities, and through the preparation of their masters thesis proposal.

The Student Forum at GSD provides the opportunity for students of the MArch I Program to assume leadership roles; it also serves as a means by which student concerns are discussed with the faculty and administration.

Since 1956, the AIAS has been the official voice of students to the educational system and the profession of architecture and design. AIAS is one of the four collateral organizations that make up NAAB. Since it was mentioned during the accreditation visit that the students are interested in forming a chapter at Harvard, the administration, faculty and students are encouraged to promote the creation of an AIAS chapter and join the more than 6,000 students all over the nation in promoting excellence in architectural education, training and practice of the profession.

1.3 Architecture Education and Registration

The accredited degree Program must demonstrate that it provides students with a sound preparation for the transition to internship and licensure. The school may choose to explain in the APR the accredited degree Program's relationship with the state registration boards, the exposure of students to internship requirements including knowledge of the national Intern Development Program (IDP) and continuing education beyond graduation, the students' understanding of their responsibility for professional conduct, and the proportion of graduates who have sought and achieved licensure since the previous visit.

Met	Not Met
[X]	[]

As demonstrated by the final studios, the students are prepared to transition into internship. Many currently work in offices and they are aware of IDP through the GSD Career Services office, as well as the required professional practice course.

1.4 Architecture Education and the Profession

The accredited degree Program must demonstrate how it prepares students to practice and assume new roles and responsibilities in a context of increasing cultural diversity, changing client and regulatory demands, and an expanding knowledge base. Given the Program's particular mission, the APR may include an explanation of how the accredited degree Program is engaged with the professional community in the life of the school; how students gain an awareness of the need to advance their knowledge of architecture through a lifetime of practice and research; how they develop an appreciation of the diverse and collaborative roles assumed by architects in practice; how they develop an understanding of and respect for the roles and responsibilities of the associated disciplines; how they learn to reconcile the conflicts between architects' obligations to their clients and the public and the demands of the creative enterprise; and how students acquire the ethics for upholding the integrity of the profession.

Met Not Met
[X] []

The GSD MArch I Program is focused on preparing students for practice. The faculty has a tradition of practice ranging from visiting faculty and lecturers to exemplary architectural practitioners with tenured positions as professors in practice.” The student body and the faculty are diverse from many parts of the globe and the GSD views itself as an international institution.

GSD students are sought for work by architectural firms throughout the world.

1.5 Architecture Education and Society

The Program must demonstrate that it equips students with an informed understanding of social and environmental problems and develops their capacity to address these problems with sound architecture and urban design decisions. In the APR, the accredited degree Program may cover such issues as how students gain an understanding of architecture as a social art, including the complex processes carried out by the multiple stakeholders who shape built environments; the emphasis given to generating the knowledge that can mitigate social and environmental problems; how students gain an understanding of the ethical implications of decisions involving the built environment; and how a climate of civic engagement is nurtured, including a commitment to professional and public services.

Met Not Met
[X] []

The Program is responsive to its multi-national student body and faculty through its international studios, global perspective on the design professions, and its course offerings. Especially strong are the explorations in housing and urban issues, and design experiences in other cultures. The case study method of teaching and learning supports this viewpoint by exploring a variety of architectural conditions in both design and practice around the world. The core design studios utilized the local context for projects such as Allston and the urban housing semester.

2. Program Self-Assessment Procedures

The accredited degree program must show how it is making progress in achieving the NAAB Perspectives and how it assesses the extent to which it is fulfilling its mission. The assessment procedures must include solicitation of the faculty’s, students’, and graduates’ views on the program’s curriculum and learning. Individual course evaluations are not sufficient to provide insight into the program’s focus and pedagogy.

Met Not Met
[X] []

The GSD annually prepares a Strategic Plan and the MArch I Program regularly provides self-assessment through the GSD’s Visiting Committee, the Alumni Council, Faculty Meetings and the Student Forum. Student’s are mature, vocal and suggest that the Program is responsive to their expressed needs. The Program could benefit from a more regularized process that would document the consolidated assessment and the formulation of written statements of expected new directions or outcomes based upon the self-assessment.

3. Public Information

To ensure an understanding of the accredited professional degree by the public, all schools offering an accredited degree program or any candidacy program must include in their catalogs and promotional media the exact language found in the NAAB Conditions for Accreditation, Appendix A. To ensure an understanding of the body of knowledge and skills that constitute a professional education in architecture, the school must inform faculty and incoming students of how to access the NAAB Conditions for Accreditation.

Met	Not Met
[X]	[]

The NAAB statement regarding the accredited degree and accessing the registration process MArch I Program is clearly and accurately reproduced in the GSD Student Handbook and Catalog, as well as the GSD Web Site. Further, the source for accessing the NAAB Conditions and Procedures for Accreditation are found in both the GSD Catalog and the Web Site

4. Social Equity

The accredited degree program must provide faculty, students, and staff—irrespective of race, ethnicity, creed, national origin, gender, age, physical ability, or sexual orientation—with an educational environment in which each person is equitably able to learn, teach, and work. The school must have a clear policy on diversity that is communicated to current and prospective faculty, students, and staff and that is reflected in the distribution of the program’s human, physical, and financial resources. Faculty, staff, and students must also have equitable opportunities to participate in program governance.

Met	Not Met
[X]	[]

The condition has been satisfied.

5. Studio Culture

The school is expected to demonstrate a positive and respectful learning environment through the encouragement of the fundamental values of optimism, respect, sharing, engagement, and innovation between and among the members of its faculty, student body, administration, and staff. The school should encourage students and faculty to appreciate these values as guiding principles of professional conduct throughout their careers.

Met	Not Met
[]	[X]

The architecture Program and the GSD have begun to look at the issues of studio culture, and have recently conducted a survey and studio study, the results of which have been distributed to the students and faculty. Yet while these steps have been taken, which include important suggestions that have had some impact on studio behavior(s), there is still no formal policy or set of procedures developed for implementing the policy. We encourage the School to complete this process that has been started and develop a written studio culture policy.

6. Human Resources

The accredited degree program must demonstrate that it provides adequate human resources for a professional degree program in architecture, including a sufficient faculty complement, an administrative head with enough time for effective administration, and adequate administrative, technical, and faculty support staff. Student enrollment in and scheduling of design studios must ensure adequate time for an effective tutorial exchange between the teacher and the student. The

total teaching load should allow faculty members adequate time to pursue research, scholarship, and practice to enhance their professional development.

Met	Not Met
[X]	[]

The Program has an excellent cadre of students, coupled with an exemplary and collegial faculty. The Program benefits from the staff support in the department as well as from the GSD administration and staff. The students and faculty benefit from excellent design studio ratios, ensuring appropriate time for critical dialogue. The GSD website, students and faculty handbooks, and catalogue provide formal access to full range of information.

7. Human Resource Development

Schools must have a clear policy outlining both individual and collective opportunities for faculty and student growth inside and outside the program.

Met	Not Met
[X]	[]

This is an exceptionally well funded Department, providing a wide variety of programs and opportunities for students. The sheer number of programs, lectures, symposia, and publications create an intellectual milieu that fulfills both the Program's and the GSDs mission. Some concern was expressed about the lack of support for assisting faculty in their engagement in scholarly and creative work.

8. Physical Resources

The accredited degree program must provide the physical resources appropriate for a professional degree program in architecture, including design studio space for the exclusive use of each student in a studio class; lecture and seminar space to accommodate both didactic and interactive learning; office space for the exclusive use of each full-time faculty member; and related instructional support space. The facilities must also be in compliance with the Americans with Disabilities Act (ADA) and applicable building codes.

Met	Not Met
[X]	[]

The facilities are outstanding. The open studio environment encourages a positive interaction between students in all the design disciplines, and also between various studio years. Facilities such as the Loeb Library, the shops, computer facilities, and cafeteria all contribute to the sense of community and support the GSD mission.

9. Information Resources

Readily accessible library and visual resource collections are essential for architectural study, teaching, and research. Library collections must include at least 5,000 different cataloged titles, with an appropriate mix of Library of Congress NA, Dewey 720–29, and other related call numbers to serve the needs of individual programs. There must be adequate visual resources as well. Access to other architectural collections may supplement, but not substitute for, adequate resources at the home institution. In addition to developing and managing collections, architectural librarians and visual resources professionals should provide information services that promote the research skills and critical thinking necessary for professional practice and lifelong learning.

Met	Not Met
[X]	[]

This Condition is Well Met - The Frances Loeb Library at the GSD houses one of the finest collections of material in the disciplines of architecture, landscape architecture, urban planning and design, and related subjects in the world. This is a resource that is truly valued by the students and faculty, and all in the design world that makes use of it. Its extensive collection is supported by an exceptional visual resource collection and a dedicated and experienced staff. Their ability to maintain currency in information technology is to be commended

10. Financial Resources

An accredited degree program must have access to sufficient institutional support and financial resources to meet its needs and be comparable in scope to those available to meet the needs of other professional programs within the institution.

Met	Not Met
[X]	[]

The Program is well supported financially, providing an excellent foundation for meeting the needs and aspirations of the architecture Program. The administrative structure of the GSD provides numerous services supporting the Program, and its students and faculty.

11. Administrative Structure

The accredited degree program must be, or be part of, an institution accredited by one of the following regional institutional accrediting agencies for higher education: the Southern Association of Colleges and Schools (SACS); the Middle States Association of Colleges and Schools (MSACS); the New England Association of Schools and Colleges (NEASC); the North Central Association of Colleges and Schools (NCACS); the Northwest Commission on Colleges and Universities (NWCCU); and the Western Association of Schools and Colleges (WASC). The accredited degree program must have a measure of autonomy that is both comparable to that afforded other professional degree programs in the institution and sufficient to ensure conformance with the conditions for accreditation.

Met	Not Met
[X]	[]

This condition has been satisfied.

12. Professional Degrees and Curriculum

The NAAB accredits the following professional degree programs: the Bachelor of Architecture (B. Arch.), the Master of Architecture (M. Arch.), and the Doctor of Architecture (D. Arch.). The curricular requirements for awarding these degrees must include professional studies, general studies, and electives. Schools offering the degrees B. Arch., M. Arch., and/or D. Arch. are strongly encouraged to use these degree titles exclusively with NAAB-accredited professional degree programs.

Met	Not Met
[X]	[]

This condition has been satisfied.

13. Student Performance Criteria

The accredited degree program must ensure that each graduate possesses the knowledge and skills defined by the criteria set out below. The knowledge and skills are the minimum for meeting the demands of an internship leading to registration for practice.

13.1 Speaking and Writing Skills

Ability to read, write, listen, and speak effectively

Met	Not Met
[X]	[]

13.2 Critical Thinking Skills

Ability to raise clear and precise questions, use abstract ideas to interpret information, consider diverse points of view, reach well-reasoned conclusions, and test them against relevant criteria and standards

Met	Not Met
[X]	[]

The case study method of teaching and learning provides an excellent foundation for examining of architectural ideas and decision making, and builds upon the critical inspection developed in the design studios.

13.3 Graphic Skills

Ability to use appropriate representational media, including freehand drawing and computer technology, to convey essential formal elements at each stage of the programming and design process

Met	Not Met
[X]	[]

13.4 Research Skills

Ability to gather, assess, record, and apply relevant information in architectural coursework

Met	Not Met
[X]	[]

Research engagement permeates all aspects of the coursework in the Program, and benefits from the case study method of instruction.

13.5 Formal Ordering Skills

Understanding of the fundamentals of visual perception and the principles and systems of order that inform two- and three-dimensional design, architectural composition, and urban design

Met	Not Met
[X]	[]

13.6 Fundamental Skills

Ability to use basic architectural principles in the design of buildings, interior spaces, and sites

Met	Not Met
[X]	[]

13.7 Collaborative Skills

Ability to recognize the varied talent found in interdisciplinary design project teams in professional practice and work in collaboration with other students as members of a design team

Met	Not Met
[X]	[]

There is significant collaborative work done in the technology, practice and history courses, but little beyond pre-design activities in the studios. Some of the studios in the other GSD programs provide architecture students with multi-discipline team design opportunities. The architecture students expressed the desire for the opportunity to have team based projects in their studio courses.

13.8 Western Traditions

Understanding of the Western architectural canons and traditions in architecture, landscape and urban design, as well as the climatic, technological, socioeconomic, and other cultural factors that have shaped and sustained them

Met	Not Met
[X]	[]

13.9 Non-Western Traditions

Understanding of parallel and divergent canons and traditions of architecture and urban design in the non-Western world

Met	Not Met
[X]	[]

Each student is required to take a course from a list of non-western history courses. In addition the studio sequence offers international non-Western design studios. Some case studies found in the technology courses also incorporate non-Western materials and techniques

13.10 National and Regional Traditions

Understanding of national traditions and the local regional heritage in architecture, landscape design and urban design, including the vernacular tradition

Met	Not Met
[X]	[]

13.11 Use of Precedents

Ability to incorporate relevant precedents into architecture and urban design projects

Met	Not Met
[X]	[]

Precedents are examined throughout the coursework and in the design studios through the case study method of instruction and learning. The range goes beyond design to include history and theory, as well as technology and practice. The breadth of knowledge the students have regarding contemporary design is impressive.

13.12 Human Behavior

Understanding of the theories and methods of inquiry that seek to clarify the relationship between human behavior and the physical environment

Met	Not Met
[X]	[]

13.13 Human Diversity

Understanding of the diverse needs, values, behavioral norms, physical ability, and social and spatial patterns that characterize different cultures and individuals and the implication of this diversity for the societal roles and responsibilities of architects

Met	Not Met
[X]	[]

13.14 Accessibility

Ability to design both site and building to accommodate individuals with varying physical abilities

Met	Not Met
[X]	[]

This condition is barely met. While there is evidence in student projects of the need for elevators, there is little evidence in site and building design that indicates concern about accessibility issues. Consideration of accessibility issues appear as afterthoughts in the design process.

13.15 Sustainable Design

Understanding of the principles of sustainability in making architecture and urban design decisions that conserve natural and built resources, including culturally important buildings and sites, and in the creation of healthful buildings and communities

Met	Not Met
[]	[X]

This condition is still Not Met. The department has recently refocused the curriculum to assure an understanding of the science and principles of sustainability (energy conservation) with the goal of inculcating the culture of sustainability throughout the program and especially in the studios. Unfortunately, this program has not yet matured and evidence of principles of sustainability could not be found in the student work

13.16 Program Preparation

Ability to prepare a comprehensive program for an architectural project, including assessment of client and user needs, a critical review of appropriate precedents, an inventory of space and equipment requirements, an analysis of site conditions, a review of the relevant laws and standards and assessment of their implication for the project, and a definition of site selection and design assessment criteria

Met	Not Met
[]	[X]

No evidence of the student's ability to prepare a comprehensive architectural program was found in the material presented.

13.17 Site Conditions

Ability to respond to natural and built site characteristics in the development of a program and the design of a project

Met	Not Met
[X]	[]

The team found this criterion was satisfied through use of a wide range of sites in studio work, including rural, suburban, and urban locations of varying size, context and topography. Moreover, the studios engaged in international projects that provided opportunities for students to experience and design for sites from rural Ecuador to downtown Seoul and Istanbul.

13.18 Structural Systems

Understanding of principles of structural behavior in withstanding gravity and lateral forces and the evolution, range, and appropriate application of contemporary structural systems

Met	Not Met
[X]	[]

This condition is Well Met through courses 6201 & 6202. This is an excellent course series meeting the requirement of understanding of Structural Systems. The student course work demonstrated an understanding of complex structural systems.

13.19 Environmental Systems

Understanding of the basic principles and appropriate application and performance of environmental systems, including acoustical, lighting, and climate modification systems, and energy use, integrated with the building envelope

Met	Not Met
[X]	[]

Course 6205 M3 meets the requirement of understanding of environmental systems

13.20 Life-Safety

Understanding of the basic principles of life-safety systems with an emphasis on egress

Met	Not Met
[X]	[]

The team found a minimal level of evidence sufficient to satisfy this NAAB criterion. Course work and design studio projects should place more emphasis on the importance of life safety issues, especially means of egress.

13.21 Building Envelope Systems

Understanding of the basic principles and appropriate application and performance of building envelope materials and assemblies

Met	Not Met
[X]	[]

13.22 Building Service Systems

Understanding of the basic principles and appropriate application and performance of plumbing, electrical, vertical transportation, communication, security, and fire protection systems

Met	Not Met
[X]	[]

Evidence in the student work demonstrates understanding of basic environmental and service systems, but ancillary systems are not apparent in the design work.

13.23 Building Systems Integration

Ability to assess, select, and conceptually integrate structural systems, building envelope systems, environmental systems, life-safety systems, and building service systems into building design

Met	Not Met
[X]	[]

13.24 Building Materials and Assemblies

Understanding of the basic principles and appropriate application and performance of construction materials, products, components, and assemblies, including their environmental impact and reuse

Met	Not Met
[X]	[]

This criterion is Well Met, as Courses 6112, 6203 and 6204 provide the students with an excellent understanding of construction materials, components and assemblies. In addition the school is creating a library and reference system for materials.

13.25 Construction Cost Control

Understanding of the fundamentals of building cost, life-cycle cost, and construction estimating

Met	Not Met
[]	[X]

In the prior team visit, the team could not find evidence to satisfy the then criteria of ~~“awareness.”~~ This team could not find evidence that would qualify for ~~“understanding”~~ of the fundamentals of building cost, life cycle cost and construction estimating. The Program should provide the students with an overview of all aspects of the subject with appropriate student response that demonstrates a level of ~~“understanding.”~~

13.26 Technical Documentation

Ability to make technically precise drawings and write outline specifications for a proposed design

Met	Not Met
[X]	[]

Technical drawings were provided in the 6000 series of courses and the third year studio and thesis that demonstrate not only graphic capability, but technical understanding of construction issues. More emphasis should be placed on the ability to prepare outline specifications.

13.27 Client Role in Architecture

Understanding of the responsibility of the architect to elicit, understand, and resolve the needs of the client, owner, and user

Met	Not Met
[X]	[]

The professional practice course, 7212 provides case studies with student work that focuses on the role of client/owner in architecture.

13.28 Comprehensive Design

Ability to produce a comprehensive architectural project based on a building program and site that includes development of programmed spaces demonstrating an understanding of structural and environmental systems, building envelope systems, life-safety provisions, wall sections and building assemblies and the principles of sustainability

Met	Not Met
[X]	[]

Some students demonstrate compliance with this criterion through the design thesis. However, because students have the option of doing either a written or design thesis for their Master's degree, the third semester design studio involves the rigorous development of a building from a complex program, and synthesizes the various systems and assemblies in building design. While the criterion was met overall, the team did not find that an understanding of sustainability was evident in the designs.

13.29 Architect's Administrative Roles

Understanding of obtaining commissions and negotiating contracts, managing personnel and selecting consultants, recommending project delivery methods, and forms of service contracts

Met	Not Met
[X]	[]

The professional practice course, 7212 provides case studies with student work that focuses on this criterion.

13.30 Architectural Practice

Understanding of the basic principles and legal aspects of practice organization, financial management, business planning, time and project management, risk mitigation, and mediation and arbitration as well as an understanding of trends that affect practice, such as globalization, outsourcing, project delivery, expanding practice settings, diversity, and others

Met	Not Met
[X]	[]

The professional practice course, 7212 and the required electives provide case studies with student work that cover the topics outlined in this criterion.

13.31 Professional Development

Understanding of the role of internship in obtaining licensure and registration and the mutual rights and responsibilities of interns and employers

Met	Not Met
[X]	[]

13.32 Leadership

Understanding of the need for architects to provide leadership in the building design and construction process and on issues of growth, development, and aesthetics in their communities

Met	Not Met
[X]	[]

13.33 Legal Responsibilities

Understanding of the architect's responsibility as determined by registration law, building codes and regulations, professional service contracts, zoning and subdivision ordinances, environmental regulation, historic preservation laws, and accessibility laws

Met	Not Met
[X]	[]

The professional practice course, 7212 provides case studies with student work that cover the topics outlined in this criterion.

13.34 Ethics and Professional Judgment

Understanding of the ethical issues involved in the formation of professional judgment in architectural design and practice

Met	Not Met
[X]	[]

The professional practice course, 7212 provides case studies with student work that cover the topics outlined in this criterion.

III. Appendices

Appendix A: Program Information

1. History and Description of the Institution

The following text is taken from the 2005 Harvard University Architecture Program Report:

For more than a century, the Graduate School of Design has both pioneered and exemplified excellence in the practice of design, education for the design professions, and design-related scholarship. A professional school with established programs in architecture, landscape architecture, urban planning, and urban design, the GSD trained many of the 20th century's foremost practitioners and scholars, and is uniquely positioned to provide leadership for shaping the built environment of the 21st century.

Charles Eliot Norton of Harvard University's Department of Fine Arts first brought architectural history into the Harvard curriculum in 1874, and Herbert Langford Warren first taught classes devoted exclusively to architecture in 1893. Warren's richly eclectic architectural education – he had studied in Germany, at Owens College in his native England, and at MIT – combined with his professional training in the office of H.H. Richardson had made him sensitive to the need to develop a multi-faceted program at Harvard: As outlined in the *Register* the four year program was posited on the continuing study of architectural history, the application of historical precedents to "modern work," the analysis of mechanics, materials and construction techniques, complementary courses in both mathematics and drawing, and the completion of a fourth year thesis. The collaborative relationship with the Department of Fine Arts was signaled by the fact that Hunt Hall was the shared site for both programs. Richard Morris Hunt Hall (named in tribute to the first American to attend the Ecole des Beaux-Arts) opened in 1895. Designed without an explicit program, the building served as the original Fogg Museum of Art and housed a collection of plaster casts of classical sculpture and architectural components which "illustrated" the curriculum offerings. The "familiarity with classic form" demanded of students in architecture was explicated by readings, lectures, study photographs and most significantly, the study of sculptural casts.

Robinson Hall (designed by Charles McKim in 1902) was the first Harvard building dedicated exclusively to the study of architecture, and its Great Hall was designed to showcase the exhibition of both original fragments and casts. As noted by Anthony Alofsin in *The Struggle for Modernism*, "The Great Hall represented classical beauty, proportion, and form and its proximity to students of both architecture and landscape architecture was essential to their training." Warren oversaw the building's program: drafting rooms, drawing studios, a conventional library of books and study photographs supplemented by a "materials library" of samples were vital elements. Forty students were enrolled in the program in 1902; within a decade the teaching faculty had expanded to include (in the 1911-1912 academic year) Eugene Duquesne, Robert Swain Peabody, Cass Gilbert, Henry Atherton Frost and Charles Wilson Killam.

In subsequent years Harvard established the nation's first academic degree programs in landscape architecture, city and regional planning, and urban design.

The Faculty of Architecture was established as a graduate school in 1914. Warren, who had served as chairman of the architecture program since 1902, was named the first dean. Through the first two decades of the 20th century, instruction in architecture remained greatly influenced by the Ecole des Beaux Arts in Paris. The School of Architecture was focused on the training of professional at a graduate level, within the

context of the shifting collaboration with the School of Landscape Architecture and the program in City Planning.

In the early 1930s, art historian George Harold Edgell, who had served as Dean of the Faculty of Architecture and Landscape Architecture since 1922, addressed the shift in curriculum focus from history to design by appointing Jean-Jacques Haffner as the principal instructor in advanced design, thus significantly strengthening studio teaching. It was also during Edgell's administration that the idea took hold that the city planning, architecture, and landscape architecture should all be united under one roof.

2. Institutional Mission

The following text is taken from the 2005 Harvard University Architecture Program Report:

The mission of the Graduate School of Design at Harvard University is to prepare and advance individuals in professional and academic careers concerned with the making of built environments, and to extend the knowledge and skills of the fields involved. Today, as during other moments in the past, the school faces important challenges in design education and must also continue to respond to societal needs. With changes in the construction industry, a significant rise in the complexity of building enterprises, and substantial growth in the ranks of qualified design professionals, the range and orientation of future roles and responsibilities require serious consideration, particularly beyond the scope of traditional professional norms. Spatial transformations of metropolitan areas, both here and abroad, continue to raise serious questions about sense of place and expressive authenticity so necessary for human habitation, especially in peripheral urban areas and among under-used or abandoned parts of once well-established precincts. The same spatial transformations also result in a pressing need for other understanding about the effects of different forms and patterns of urban settlement on the social and economic progress of inhabitants. Furthermore, after decades of neglect, renewed efforts to maintain and preserve the rich cultural legacy of buildings, urban artifacts, and built landscapes must be undertaken, but ways that still allow resident populations to pursue their present-day interests.

Similarly, environmental quality must be pursued at every turn, although balanced by social agendas and in the direction of ethical responsibility. Finally, rapid deployment of new information technology promises to alter the way in which we perceive and make physical environments, requiring further reconsideration of today's professional design and construction practices.

3. Program History

The following text is taken from the 2005 Harvard University Architecture Program Report:

The Graduate School of Design was officially established in 1936, in recognition of the shared interests and collaborative relationship among the design professions (defined from the outset to include urban planning). An integrated faculty helped develop comprehensive programs while drawing on the great intellectual resources of other Harvard University faculties, research groups, and libraries.

Joseph Hudnut, the GSD's first dean, initiated a dramatic shift in the direction of architectural education at Harvard. Hudnut had long been interested in the emerging,

modernism in architecture and town planning, and had begun to transform architectural education at Columbia University before moving to Harvard. In 1937, he invited Walter Gropius to Harvard as professor and Chairman of the Department of Architecture. Gropius' "Architecture at Harvard University" published in the *Architectural Record* in 1937 gave some indication of his ambitions for the program in architecture which would ideally form creative practitioners, sensitive to social, technical and aesthetic challenges of contemporary society. Gropius and Hudnut were to be instrumental in shifting architectural education in the United States from one based on classical precedent to one based on a modern conception of architecture and of the role of the architect.

Designers were considered practicing professionals inspired by a modern aesthetic who developed their understanding of the world from contemporary circumstances and who could measure the social and technical implications of their work. Teams of faculty and students developed large projects drawing on the skills of the all the design professions, which for example offered opportunities to demonstrate how principles of landscape architecture could be applied to a wide range of environmental problems. The innovative master's studio, initiated by Haffner, was re-vamped by Gropius, and swiftly became both popular and influential. Marcel Breuer joined the faculty in 1938 and visiting lecturers in this period included Josef Albers, Gunnar Asplund and Alvar Aalto. The department also initiated a program of innovative exhibitions focused on contemporary design.

Dean Hudnut developed the new Department of Architectural Sciences (officially established as an undergraduate program in Harvard College). The traditional liberal arts curriculum in the College was supplemented by studio courses in theory, practice, and design. Nine undergraduates entered the program in 1941; until its dissolution in 1968 an average of 80 Harvard College students was enrolled annually.

The war years were characterized by significantly decreased enrollment (although women were permitted to enroll for the first time in 1942) and the development of a truncated "wartime" curriculum. In the fall of 1945 a new curriculum, based on a core of integrated courses (Design, Planning, Construction and Architecture) was initiated.

In 1953, Josep Lluís Sert was appointed dean. Sert, who also served as Chairman of the Department of Architecture, advanced professional architecture education at the GSD, doubled the number of students and faculty, and expanded course offerings in the technical, behavioral, and social sciences. Sert was instrumental in developing an integrated approach to planning and design of the urban environment, and the school placed new emphasis on the subject of urban design. A degree program in urban design -- again, the first in the United States -- was established in 1960 to enable greater collaboration among the school's design and planning disciplines.

The Joint Center for Urban Studies, now called the Joint Center for Housing Studies, was also created in 1959 to support research in the field, and to address the troubling issues facing cities at the time.

The next big turning point for the GSD came in the 1960s, when a plan gained momentum to move the school into a new building of its own. Classes had been taught in Hunt Hall and Robinson Hall, a turn-of-the-century McKim, Mead and White building in and Yard. A new site was available at the corner of Cambridge and Quincy streets, the Australian architect John Andrews was chosen to design what would become the, 170,000 square-foot Gund Hall -- completed in 1972 -- the most distinctive features of which were its focus on the studio as the core of design education and its tiered student stepping down four stories in a continuous glazed hall.

Sert, who retired in 1969, was succeeded as dean by Maurice D. Kilbridge, who had been a professor at the Harvard Business School. Over the following decade, the school again doubled its enrollment and extended the scope and depth of its programs.

A Commitment to Innovation

In 1980, Gerald McCue, then Chairman of the Department of Architecture, was appointed dean, and Harry Cobb assumed the architecture chairmanship. Under their leadership, the school began a critical reexamination of the field of design, seeking to exploit more fully the school's position in the exceptional environment of Harvard. McCue expanded the research base of the school by creating new advanced degree programs. The Master in Design Studies and the Doctor of Design programs were established in 1986. Research was also supported through the university's PhD programs in architecture, landscape architecture, and urban planning. McCue also led efforts to bolster endowment support for professorships and to secure gifts for educational resources, such as library collections and computer-based instruction materials. Cobb, meanwhile, established a new core curriculum centered on studio work and attracted a group of exceptional, often controversial practitioners.

From 1992 to 2004 Peter G. Rowe, Raymond Garbe Professor of Architecture and Urban Design, served as dean. While extending the initiatives of his immediate predecessors, Rowe focused on expanding the school's international dimension and the development of continuing professional and executive education. He also worked to increase the number of senior faculty, to develop new programs in urban planning, real estate, and environmental protection, to expand the school's information technology capacities, and to renovate the school's Frances Loeb Library and increase the classroom and shop facilities of the school. During this period as well, Harvard Design Magazine became an important forum for leading educators and practitioners to debate current issues in design and the environment.

Alan Altshuler, the Ruth and Frank Stanton Professor of Urban Policy and Planning, succeeded Rowe in February 2005 as the sixth Dean of the Graduate School of Design. Altshuler's priorities are, at this writing, still very much evolving, but prominently include the following: reinforcement of the school's position of leadership in training sign professionals, vigorous adaptation to the new technological and globalization opportunities that are transforming design practice, nurturing the field of urban planning context-shaping discipline that informs all other aspects of design, integrating themes sustainability, equity, and energy efficiency into all of the school's programs, and expanding financial aid so that the opportunity for a GSD education will be fully open to students of talent.

The studio method of teaching remains at the core of design and planning education at Harvard. Through structured project assignments, students develop their creative and sharpen their analytic and critical skills. The international focus of the faculty continues and increasingly reaches far beyond Europe to Asia, America, and emerging economies around the world. Building on its history at the fore of the design professions and its position in a premiere academic institution, the Graduate School of Design remains committed to educating its graduates to assume leadership roles in a rapidly changing world.

The Chairs of the Architecture Department over the past 25 years have included Henry Cobb, Rafael Moneo, Mack Scogin, and Jorge Silvetti. On July 1, 2002, Toshiko Mori, Robert P. Hubbard Professor in the Practice of Architecture, succeeded Silvetti as chair.

The program leading to the professional degree in architecture has received accreditation since the beginning of this process in 1940. In 1971-72, the graduate B.S. degree in architecture was changed to the degree Master in Architecture, reflecting the general trend for graduate education to award the master's degree. Since then, the program has been organized into seven semesters of study, with a five-semester plan for students awarded advanced standing. The curriculum includes an increasingly complex series of design studios, culminating in the completion of an independent master's thesis project. Courses in history and theory, visual and socioeconomic studies, science and technology, and professional practice provide a comprehensive understanding of the broad base of knowledge of the profession.

4. Program Mission

The following text is taken from the 2005 Harvard University Architecture Program Report:

The Graduate School of Design's core mission is to promote excellence in the physical environments that human beings inhabit: their buildings and neighborhoods, their open spaces at scales from gardens to vast ecosystems, their cities, and their regions. Its methods are advanced research, innovative practice, and the preparation of remarkable students for leadership in four design professions: architecture, landscape architecture, urban design, and urban planning.

The design professions are today in a period of transformation, driven by new technological possibilities and a widespread sense that better human environments are an imperative — at one scale for the pleasure, prosperity, and health of individuals in local settings, at another for the sustainability and progress of world civilization.

This headlong pace of change is most evident in the rapid evolution of means of visual representation, the development of new materials and construction technologies, new strategies for integrating design with engineering, new approaches to the reclamation of contaminated environments, and new understandings of the interplay among aesthetic, environmental, economic, and social factors.

The GSD, preeminent among schools of design since its formation in 1936, has always been characterized by its adaptability to changing opportunities and needs. Today the challenge of adaptation is greater than ever. The school must compete for the very best faculty in a variety of emerging, as well as more established, fields. It must invest in new technologies and adapt its aging physical plant. It must recruit and provide adequate financial aid to the world's very best students pursuing advanced education in the design professions. With the resources to accomplish these tasks of adaptation, it will remain a superlative fount of creativity and talent for improvement of the built environment.

Regarding MArch I specifically, this program prepares graduates for professional practice in the field of architecture. To this end, intellect and imagination are brought to bear on the issues and opportunities affecting the physical environment. Emphasis is placed on understanding conceptual principles and patterns as well as on developing operational skills. One of the primary objectives of the program is to assist students to develop a high level of excellence in architectural design.

The Master in Architecture, first professional degree, is earned through a structured, seven semester program of study. Central to the program are courses in architectural

design in which the many facets of architecture are explored and developed as specific proposals for the physical environment.

The GSD has organized its curriculum into the following areas of knowledge that are brought together in design: visual studies, theory, history, socioeconomic studies, science and technology, and professional practice. Achieving relevant and sophisticated design by using knowledge drawn from these areas demands full use of an individual's rational and intuitive faculties; students are involved in both analysis and synthesis in their course of study. They are also expected to use the resources of the university, the community, and the profession to help answer the questions arising from serious study of architecture. Recognizing the importance of collaboration in the architect's role, the program tries to emphasize collective effort as well as individual achievement.

The GSD prepares students for professional careers at the graduate level only. Together with the first professional degree programs in landscape- architecture and urban planning, the MArch I is an "entry level" program in a graduate school that also offers a range of post-professional masters' and doctoral programs. These students are encouraged to think of their study as the beginning, rather than the culmination, of their professional education; the educational program leading to the first professional degree is intended to graduate generalists, rather than specialists. First degree architecture students are not required to develop a minor concentration. Rather, opportunities for specialization are offered through advanced degree and post-professional, non-degree programs.

Harvard was one of the first universities in the nation to establish a graduate professional school that encompasses four disciplines that play major roles *in the shaping* of the physical environment -- architecture, landscape architecture, urban planning, and urban design. One of the distinctive educational missions of the GSD has been, and remains, to provide opportunities for students in these fields to gain a strong understanding of the related professions, and to consider their interrelationships. This is accomplished in part through common enrollment in some classes and studios, and, more generally, through the development of friendships and the sharing of facilities and extracurricular activities.

A final distinction of the educational mission is that the GSD seeks to establish and maintain a broad mix of faculty and students representing a wide range of approaches, experiences, and perspectives. This is consistent with Harvard's larger mission to provide intellectual leadership in higher education and is a basic requirement for pioneering new professional and educational concepts. In the MArch program specifically, an interesting intellectual mix of students is established by recruiting and admitting two categories of students. The faculty accepts students with many different undergraduate majors who have completed little or no related professional course work at the undergraduate level accepts a lesser number who have majored in architecture or a related design as an undergraduate. The latter students are normally granted advanced placement in the program.

5. Program Strategic Plan

The following text is taken from the 2005 Harvard University Architecture Program Report:

The GSD's Department of Architecture remains among the strongest programs of architectural studies in the United States. Nevertheless, the school is aware that it must remain alert and flexible as it continues to confront both unforeseeable challenges as well as problems endemic to the academy and the discipline at large. Therefore, the dean of the school annually presents a strategic plan outlining broad achievements, goals and

shortcomings while the Department of Architecture regularly undertakes critical reassessments of its pedagogical mission and ongoing reforms.

Strategic Planning for the GSD¹ External Exchange

External Exchange

With regard to ongoing programs of external exchange and collaboration with other institutions, the school has strengthened its relationship with the Eidgenössische Technische Hochschule (ETH) in Zurich, Switzerland. Other more *ad hoc* arrangements with institutions like Tsinghua and Tongji Universities in China; Universidad Metropolitana in Caracas, Venezuela; Università di Bologna in Italy; di Tella University in Buenos Aires, Argentina; and the London School of Economics in the United Kingdom, also provide students with educative opportunities abroad.

Faculty and Staff Development

In order to keep pace with recent faculty additions, three new chairs have been funded and created in architecture since 2000: the Eliot Noyes Professorship in Architectural Theory (2001, K. Michael Hays), the Robert P. Hubbard Professorship in Architectural Practice (2001, Toshiko Mori) and the Gerald M. McCue Professorship in Architecture (2002, Preston Scott Cohen). For a detailed account of faculty appointments since 2000, see section 3.6. There is both a need and an emerging capacity for modest further senior faculty expansion. Particularly as the school extends into programs like executive education and the advanced degree programs, the need for senior faculty leadership and participation becomes stronger. The junior faculty continues to change, although remaining vibrant and under better conditions of mentorship than they have been in the past, and a new position of Adjunct Associate Professor was created recently to further empower the school to attract young and promising practitioners into its teaching ranks. Individual faculty-sponsored research and scholarship continues to flourish. At least by one measure of productivity, there have been some 30 academic book publications by GSD faculty in the past two years. Professional awards and honors granted to faculty members of the Department of Architecture continue to advance the reputation of the school.

The complement of staff currently stands near 97 FTE exclusive of the research units. The school has added two FTE to the Financial Services office in order to respond effectively to rising challenges of added fiscal complexity. Staff development activities have continued to be maintained, especially in the direction of joint decision-making, modes of recognition, and representation in the broader academic life of the school. Regular staff meetings are scheduled, with faculty presentations, and staff are represented on a number of the school's standing committees. Productivity continues to be high – for instance, the ratio of staff to faculty has remained relatively constant at around 1.4:1—well down from almost 2:1 during the 1980s – and turnover has been average. Indeed, staff development and nurturing becomes that much more important in a small school at Harvard, particularly given the relatively limited staff promotion opportunities in comparison with the larger schools.

Information Technology Resources

In the area of Information Technology (IT), the school has re-organized its management structure, lead by the Dean's Advisory Committee on Information Technology, in order to

deal more effectively and comprehensively with what has now become a diffuse array of activities and applications. The core staff of the Computer Resources Group has grown to eleven full-time staff members, reflecting growth in both 'front-line' and 'back-office' computer support of the school's activities. Recent years have seen a heavy demand for IT services, as the school's successful and earlier innovative policy of expecting students to provide their own computers, plugged into the school's high speed local area network (LAN), has reached saturation: almost all of the school's students bring their own computers and use them in all aspects of their studies. At the same time, the kind and complexity of services demanded by these students, as well as by faculty and associated researchers, has grown, so that, for example, the Computer Resources Group now supports many different brands of design-related software, on Mac, PC and UNIX platforms; mounts detailed Geographic Information System (GIS) data, including parcel data, topographic maps, aerial photography, and demographic data for a number of world cities and regions; and provides consulting to students, faculty and researchers on matters ^{from} website design to spatial analysis techniques. In addition, CRG staff increasingly deal with computers and software in foreign languages, requests for sharing large data files, and videoconferences from remote locations. Over the past few years the school embarked on the design and implementation of a new version of its website – now completed successfully -- aimed particularly in the direction of better navigation from a b^{roader} range of perspectives and a better overall image. A Design School Courseware stem has been implemented across all courses. The school also actively joined the iCOMMONS Consortium of Schools at Harvard interested in joint development of IT abilities and capacities, as well as transferring significant infrastructural IT functions to University Information Services (UIS).

The school's program of publications, lecture series, symposia, and exhibitions continues. The Harvard *Design Magazine* continues to be carried, to effect, by a significant number of commercial outlets in North America, Asia and in Europe, as well institutions world wide, while remaining free to alumni and present school publications receive attention from an oversight faculty advisory board, chaired by the Dean, and the stipulation of special editorial boards for each type of publication explicitly bearing the Graduate School of Design's imprint. These include *CASE*, a venture with Prestel press, to develop a different kind of architectural textbook that focuses on a significant building project from various points of view; the *Project on the City* by Rem Koolhaas, published with *Taschen*; *Immaterial/ Ultramaterial*, a catalogue based on the exhibition by Toshiko Mori, published by George Braziller; *Before and After the End of Time, Architecture and the Year 1000*, Christine Smith with James Ackerman, Hunter Tura, Marco Steinberg, Marjorie Cohn.

In addition, at least three or four separate lecture series, including those in the three departments, run throughout the academic year. The increasing sophistication of the school's exhibitions and related curatorial activities has often outgrown the Gund Hall lobby gallery space. Consequently, an alliance has been formed with the Harvard University Art Museums, under which certain shows are jointly exhibited with support of an endowment.

Student Resources

Career Services continues to provide good service with input from the Student Forum – the school's elected student body. A reorganization of staff and a new director has resulted in an expanded array of services. These experienced professionals spend several hours per week at the school providing expertise in the fields of architecture, urban design, landscape architecture, and planning. In addition, the Office of Student Services has expanded its special programs available to foreign students in English language competency and in special consideration of the Americans with Disabilities Act. In general, the Student Forum continues to be effectively engaged in joint problem-

solving activity with faculty and administration, as well as sponsoring a growing number of special-interest groups and organizations. In response to their expressed concerns about access to limited-enrollment courses, for instance, a procedure was instituted several years ago, mandating course presentations by instructors and an allocation of spaces in these courses according to expressed student preferences. Also, student advising has undergone a substantial overhaul during the last several years.

Financial Aid

The adequacy of student financial aid remains an important issue, although definite improvements have been made in recent years. Currently, financial aid for master's students is budgeted at \$4.1 million for 2005-2006, or 25% of tuition income, \$2.1 million of which is for architecture students. This compares to \$1.21 million in 1993, or 15% of tuition income. In an attempt to maximize grant funds, several new programs have been put in place over the past several years. One allows a set amount of grant to be given to all American students who qualify on their own, and which can be augmented by the traditional grant which requires parental information. Additionally, in 2003 the president launched a program to augment the financial aid offered by the graduate schools. The Graduate School of Design received a commitment of \$300,000 spread over three years for scholarships to students who expect to engage in public service careers. Another \$230,000 per year was contributed by the president, starting in 2004-2005. The university has established a loan fund through CitiBank which is available to all students. The average debt for graduating students is still relatively high for students on aid – although significantly less than it might have been without the new formula for financial aid. 'Unmet need' has declined dramatically since the late 1980s and early 1990s, together with significant increases in the distribution of federal loans during the last few years. Recruitment in all programs has been intensified, in response to both increased competition and other market factors.

Of the unresolved financial issues facing the school, financial aid for students is still among the most pressing, in spite of recent improvements and likely further assistance. The financial wherewithal of the school is not fully robust, although improving. Past deficits have been managed downward to net positive returns on the school's unrestricted operating budget over the past couple of years. However, a combination of cost control and additional revenues are still required to place the school in a comfortable financial position.

Physical Plant

Physical improvements continue to be made to Gund Hall, including renovation of teaching and office space. Substantial renovation and outward expansion of the school's basement area has been completed, in conjunction with the construction of the Center for Government and International Studies, next door, by the Faculty of Arts and Sciences. This renovation and addition included workshop space, an imaging facility, CAD/CAM facilities, a special projects area and, a materials library. In addition, the audio-visual technology of Piper Auditorium was substantially updated.

Fortunately, space limits do not appear to have been breached, although- the school is beginning to feel new pressures with regard to space requirements, faculty size, and a general upward drift in the scope and size of its degree programs from professional ward advanced areas of involvement.

The Architecture Department and Interdisciplinarity within the School of Design

Among the greatest advantages of the architecture department at Harvard is the quality and range of its human resources brought about by the exchange that occurs between the

department and the other design disciplines within the Graduate School of Design and the university at large. The structure of the university's semi-autonomous professional schools allows each the ability to tailor the faculty, staff and infrastructure to support independent but related educative missions. Few, if any other design schools have enjoyed the benefits of such a university structure. Indeed, the depth and breadth of Harvard's academic excellence combined with the interdisciplinary environmental design programs of its Graduate School of Design significantly contributed to the advancement of architectural education at Harvard and beyond.

Then too, with the increased variety of academic activity now going on in the GSD, the age-old discussion about the right balance of 'interdisciplinarity' is beginning to be engaged again and might fruitfully be examined further. One view on this subject is the 'common core' model, where all erstwhile professionals receive a common educational training before going on to specialize. A second is the 'ground and stretch' model, where students learn one discipline well before going on to further specialization, or diversification. At present, the school operates closer to this second model for several practical and philosophical reasons. Especially during a time of increased technical specialization within disciplines, general courses – part of the 'core' approach – are often less than successful. Further, broad knowledge shifts among the disciplines have been occurring away from universal principles and 'one size fits all' approaches to education and practice – a dramatic change, for instance, from the founding era of the GSD. Again these shifts effectively call into question just how 'common' is the idea of 'common knowledge' across disciplines. Nevertheless, it is also obviously difficult to object to all forms of cross-disciplinary knowledge, or not to appreciate that various forms of design do have aspects in common. Important to the school's present stance is also the practical elimination of barriers that stop students from taking coursework, outside of their required curricula, from across the school. However, the time may have come to re-examine this whole issue and basic approaches to design education.

Finally, it appears that two rather age-old dynamics still hold sway within the school and the university. The first is knowing when and how to experiment and when to institutionalize the successes of those experiments in an appropriate manner. The second is knowing what is the appropriate scale of operation for the school and how it should concern itself with discipline building and the careful development of 'actionable' knowledge' that lies at the heart of its professional education.

Pedagogical Planning in the Department of Architecture

In response to the many challenges that arise in both the professional and academic contexts, the Department of Architecture has examined and reconceived a number of pedagogical areas in its program. The following are summaries of these reforms.

Design Computing

Advances in technology, as they pertain to the development of the architectural discipline, represent among the most inestimable challenges to be addressed by schools of architecture today. In 1002, the GSD appointed a new associate professor to spearhead the evaluation and development of curricular needs for digital computation, a field that is experiencing continuous transformation without clearly defined limits. The school continues to provide leadership with its courses in technical computation, environmental simulation, CAD-CAM, algorithmic computation, data structures, and advanced programming courses. In addition, the DDes program contributes advanced research that plays a significant role in the March program.

With the significant expansion of its CAD-CAM facilities, the GSD leads in the advancement of the effects and material potentials of digital design for architectural production. In addition, the school deploys user-oriented innovations to advance studies in virtual reality, surveillance technologies, and remote or tele-presence applications.

The GSD's curriculum is clearly distinguished from other schools that are seeking to use the emerging media only to produce expressive or geometric form or a new style of form making. The aim is to provide a deeper understanding of computer science, algorithms, information processes, and the tools required for basic research. Thus the program is exceptionally well positioned to work on both sides of the formal vs. virtual reality divide presently characterizing the computational discipline in architecture schools.

The Materials Collection Initiative

During the next decade, material studies are expected to assume an unprecedented role in architecture programs. In spring 2005, the GSD launched The Materials Collection Initiative, supported by a fellowship awarded to the GSD by the Presidential Instructional Technology Fellows Program. The collection will serve as a school-wide tool to promote cutting-edge material technology research and experimentation and curricular development within the various departments and advanced studies programs: Architecture, Landscape Architecture, Urban Design, and the Doctor of Design program.

The program was initiated by Architecture department chair, Toshiko Mori, who teaches several material innovation courses, and has published a book *Immaterial/Ultramaterial* based on an exhibit that took place at the GSD in 2001. MLA student Liat Margolis and Loeb Library Director Hugh Wilburn applied for and received the PI^TF' grant in the fall of 2004 to develop the framework for this project.

The Materials Collection is a cross referencing system that links an online database with a physical material samples collection, catalogued in a newly designed facility at Gund Hall. The physical collection features two collection categories: an eclectic and broad range of manufactured material, as well as selected material explorations generated by faculty and students at the GSD thru curricular activity or independent studies.

Integration of Technology and Design

Under the direction of Toshiko Mori, who became the chair of the department in 2002, the department has developed an initiative to integrate the technology and design branches of architectural education. Several courses, including Materials and Construction, An Introduction to Techniques, Composition and Strategies, Waving, Tectonics and Architecture, and Materials and Habitation combine experimentation with both new and traditional materials and case studies of current practices of architecture.

The department has invited several world renowned structural engineers and climate engineers to analyze innovations in structures, energy issues and sustainability. Their courses provide instructions for the analysis of physical phenomena in order that physics and energy issues can be integrated into design work.

Essentially, the faculty recognizes that design should be fundamentally sustainable. Therefore, the direction of our education of architects on this subject matter encompasses an ethical point of view as well as technical and scientific expertise.

History and Theory Curriculum Development

For the past fifteen years, the Department of Architecture at the GSD has served as a model for reconsidering the longstanding question of the role for architectural history and theory within a professional school as opposed to a liberal arts academic institution. The department's required course sequence follows a case studies model, as opposed to the traditional survey approach. In the fall of 2001, the MArch Core History and Theory curriculum sequence was restructured to become six half-semester modules in order to address issues of periodization and breadth as well as the larger question of how history and theory should be taught with respect to contemporary developments in the profession. The first module is a thematic introduction; the last (sixth) covers recent theoretical issues and familiarizes students with current debates. The remaining four modules address each a different historical segment.

At its root, the methodological preference for case studies arises from the recognition that the teaching of history courses at the GSD must account for the fact that the majority of students will graduate to become professional architects, not scholars. The case studies provide analysis of all aspects of architectural production: stylistic, technical, urban/contextual, social, and theoretical. They provide a framework for the critical interpretation of architecture. Students are encouraged to understand the interpretation of facts as generators of vocabularies for buildings and urban form as a basis for critical thought.

Professional Practice and Ethics

The global practice of architecture is exploding.. It is imperative that students are equipped with the necessary skills to understand, negotiate and effectively practice here in the world. The department now offers a new, comprehensive, interdisciplinary, professional practice course on International Practice that addresses the legal, ethical, and cultural issues relevant to global practice. The course takes into account not only an American perspective but also that of others practicing in the U.S. and other countries. It is developed especially for a program with an unusually high number of international students, and is the first course of its kind in any architecture program.

Appendix B: The Visiting Team

Team Chair, Representing the AIA
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Representing the AIAS
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(801) 581-8217 fax
miller@arch.utah.edu

Appendix C: The Visit Agenda

ACCREDITATION TEAM VISIT ITINERARY

MArch 1 –Masters of Architecture Professional Degree
 HARVARD GRADUATE SCHOOL OF DESIGN

Accreditation Team:

Robert A. Odermatt , Team Leader - representing the AIA
 William C. Miller, FAIA, representing the ACSA
 Barbara A. Sestak, AIA, representing the NCARB
 Elissa Munoz-Storer, representing the AIAS

Saturday - March 14, 2006

Arrival of Team Members
 Individuals take Taxi's to Hotel

Hotel information:

Inn at Harvard
 1201 Massachusetts Avenue
 Harvard Square
 Cambridge, MA 02138 USA
 Tel 617-491-2222
 Fax 617-520-3711
<http://www.theinnatharvard.com/>

7:30 PM Dinner - Location to be determined

- Welcome team members and self introductions.
- Overview of APR and Agenda.
- Expectations for the visit:

Sunday - March 14, 2006

8:30 – 9:30 AM – Breakfast	Team Only	Hotel Atrium
<ul style="list-style-type: none"> • Assemble issues and concerns to be addressed Dept Chair 		
10:00 – 11:00 AM – Meeting with Department Chair	Mori	Portico – GSD
<ol style="list-style-type: none"> 1. Overview of APR issues and questions 		
11:00 AM – 12 N - Overview of Team Room	Mori, Cohen	Portico – GSD
12:00 N – 1 PM - Team lunch with Program Admin	Mori, Cohen	Stubbins
<ul style="list-style-type: none"> • Introductions of team and program administrators. 		
1:00 PM - 2:30PM Tour of GSD Facilities	Mori,Cohen,Wilburn, Cote, Cahill, Margolis, Bechthold, Roberts, Glatt	Portico
2:30 PM – 4PM – Overview of the GSD	Mori,Cohen,Kirkwood, Schoedek,Picon,Machado, Sommers?, Ponce de Leon?	Portico
<ul style="list-style-type: none"> • Briefing by Faculty 		

4:00 PM – 7 PM Team review of exhibits and records Team Only Portico
7:00 PM - Team only dinner/Team debriefing session TBD

Monday April 18

7:30 AM – 8:45 - Team Breakfast with Department Head Mori, Cohen Faculty Club
 • Request required additional information;
9:00-9:30 AM – Meeting with Provost Sean Buffington Holyoke Center #874
9:45 – 10:15 AM – Meeting with the Dean Alan Altshuler Dean's Office #303
10:30 AM – 1:00 PM – Continued Review - Exhibits & Records Mori, Cohen Portico
1:00 PM – Lunch with Selected Faculty 12-15- faculty
2:00 PM – 3:00 PM – Continued review of Exhibits and Records Portico
3:00 PM - 4:30 PM - Observations of Studios
4:30 PM - 6:00 PM - Team Review Meeting Portico
6:00PM - 7:00 PM Meeting with MArch 1 Students Students Only Piper Steps
7:00 PM - 8:00 PM Reception with recent graduates, local professionals, faculty and administrators Stubbins
8:00 PM - 9:30 PM - Team Only Dinner
9:30 PM -10:00 PM - Continued review of exhibits and records

Tuesday April 19

7:30 AM - 8:30 AM - Team breakfast Inn @ Harvard
9:00 AM - 12:30 PM – Team Meeting
12:30PM -1:30 PM – Lunch with Student Forum Reps Irwin 510 or 518
1:30PM - 3 PM - Meeting with Faculty – Full-time and Adjunct Stubbins
3:00 PM – 7:00PM - Continued review of exhibits and records – Completed Draft of VTR
7:00 PM – 9:00 PM - Team Dinner

Wednesday April 20

8:00 AM – 9:00 AM - Team breakfast with Department & Program Head Mori, Cohen Portico
9:00 AM - 9:45 AM – Meeting with the Dean Alan Altshuler Dean's Office #303
10:00 AM –10:45 AM - Exit meeting with the Provost Sean Buffington Holyoke Ctr Room 874
11:00 AM – 11:45 AM - Exit meeting with the Faculty & Students Piper Steps
12 N – Check out of hotel

IV. Report Signatures

Respectfully Submitted,

Robert A. Odermatt, FAIA
Team Chair

Representing the AIA

William C. Miller, FAIA
Team member

Representing the ACSA

Elisa Muñoz-Storer
Team member

Representing the AIAS

Barbara A. Sestak, AIA
Team member

Representing the NCARB

Appendix 4

Course catalog: <http://www.gsd.harvard.edu/cgi-bin/courses/index.cgi>

Appendix 5

Offsite Questionnaire

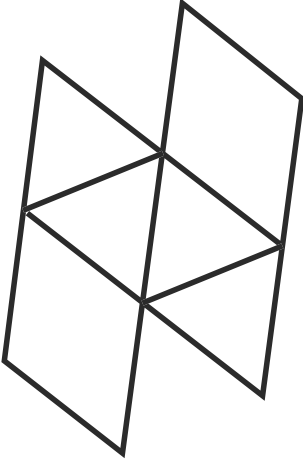
The Graduate School of Design has started two study-abroad opportunities this academic year. More information and specifics about these programs (other than what has been discussed in sections 1.2.1 and 2.2.2)will be available at the Team Visit.

Harvard University Graduate School of Design
2011-2012

Editors

Gabrielle Patawaran, MArch I

Laura Snowdon, Dean of Students



THE GSD

Guide to Gund

Harvard University
Graduate School of Design
2011-2012

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Published by Puritan Press, Hollis NH











Gurd Hall, From Quincy Street / photo: P. Vanderwerker

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Letter from the Editors

Each year a GSD handbook is designed and edited by a student in collaboration with Laura Snowdon, Dean of Students. For 2011-2012 two books comprise the handbook: **The GSD Student Guide** and **The GSD Guide to Gund**.

The GSD Student Guide offers thoughts about how to navigate the transition to Cambridge and the GSD, as well as insiders' advice from those who have come before you.

The GSD Guide to Gund describes the resources, academic programs, services, and administrative policies of the GSD. We hope that these books are useful to you and offer a glimpse into a school and community which has a place for you during the coming years.

As always, comments, suggestions, corrections, and updates are welcome. Please send your thoughts to handbook@gsd.harvard.edu.

Good luck, and welcome to the GSD.

Gabrielle Patawaran, MArch I
Laura Snowdon, Dean of Students

A Brief History of Harvard University

Harvard University, which celebrated its 350th anniversary in 1986, is the oldest institution of higher learning in the United States. Founded 16 years after the arrival of the Pilgrims at Plymouth, the University has grown from nine students with a single master to an enrollment of more than 18,000 degree candidates, including undergraduates and students in 10 principal academic units. An additional 13,000 students are enrolled in one or more courses in the Harvard Extension School. Over 14,000 people work at Harvard, including more than 2,000 faculty. There are also 7,000 faculty appointments in affiliated teaching hospitals.

Eight presidents of the United States: John Adams, John Quincy Adams, Theodore and Franklin Delano Roosevelt, Rutherford B. Hayes, John Fitzgerald Kennedy, George W. Bush, and Barack Obama were graduates of Harvard. Its faculty have produced more than 40 Nobel laureates.

Harvard College was established in 1636 by vote of the Great and General Court of the Massachusetts Bay Colony and was named for its first benefactor, John Harvard of Charlestown, a young minister who, upon his death in 1638, left his library and half his estate to the new institution. Harvard's first scholarship fund was created in 1643 with a gift from Ann Radcliffe, Lady Mowson.

Modeled after Oxford University, Harvard is characterized by a decentralized organization and financial structure. The University's 10 faculties oversee 13 schools and colleges. Each faculty is headed by a dean - appointed by the president - and is responsible for its own fundraising and endowment, finances, and organization.

A Brief History of the GSD

Charles Eliot Norton first brought architectural education into the Harvard curriculum in 1874, and Herbert Langford Warren first taught classes devoted exclusively to architecture in 1893. In subsequent years Harvard established the nation's first academic degree programs in landscape architecture, city and regional planning, and urban design.

The Faculty of Architecture was established as a graduate school in 1914, and Warren was named the first dean. In the early 1930s, art historian George Harold Edgell served as dean of the faculty of architecture and landscape architecture. In 1936 the Graduate School of Design was officially established, in recognition of the shared interests and collaborative relationship among the design professions, defined from the outset to include urban planning.

Joseph Hudnut, the GSD's first dean, initiated a dramatic shift in the direction of architectural education at Harvard. In 1937, he invited Walter Gropius to Harvard as professor and chairman of the Department of Architecture. The two men were instrumental in shifting architectural education in the United States from one based on classical precedent to one based on a modern conception of architecture and the role of the architect.

In 1953, Jean Lluís Sert was appointed dean. Sert, who also served as chairman of the department of Architecture, advanced professional architecture education at the GSD, doubled the number of students and faculty, and expanded course offerings in the technical, behavioral, and social sciences. Sert was instrumental in developing an integrated approach to the planning and design of the urban environment, and the school placed new emphasis on the subject of urban design. A degree program in urban design, the first in the United States, was established in 1960.

The next big turning point for the GSD came in the 1960s when a plan gained momentum to move the school into a new building of its own. Classes had been taught in Hunt Hall and Robinson Hall, a turn-of-the-century McKim, Mead, and White building in Harvard Yard. A new site was available at the corner of Cambridge and Quincy streets and the Australian architect John Andrew was chosen to design what would become the 170,000 square foot Gund Hall, completed in 1972.

The most distinctive features of Gund Hall were its focus on the studio as the core of design education and its tiered student 'trays,' stepping down five levels in a continuous glazed hall. Interdisciplinarity is a key tenet of the GSD's academic approach. The open plan of Gund Hall and its 'trays' reinforce this approach by enabling interaction among students from different degree programs.

The studio method of teaching remains at the core of design and planning education at the GSD. Through structured project assignments, students develop their creative potential and sharpen their analytic and critical skills. The international focus of the studies and of the faculty continues and increasingly reaches to Europe, Asia, South America, and emerging

Timeline of the GSD

1636	Office of the Dean
1874	Architecture
1893	Landscape Architecture
1900	Urban Planning and Design
1914	Advanced Studies Programs
1924	Master of Landscape Architecture and City Planning established
1929	School of City Planning created
1936	Graduate School of Design established. Joseph Hudnut appointed GSD dean
1953	Josep Lluís Sert appointed GSD dean
1959	Joint Center for Housing Studies created
1960	Urban Design degree established
1969	Maurice D. Kilbridge appointed GSD dean. John L. Loeb endows Loeb Fellowship Program
1972	Gund Hall completed
1980	Gerald McCue appointed GSD dean
1986	Advanced Studies Programs founded
1992	Peter Rowe appointed GSD dean
2005	Alan Altshuler appointed GSD dean
2008	Mohsen Mostafavi appointed GSD dean



Piper Auditorium Chairs / photo: Shelby Elizabeth Doyle

ACADEMIC OVERVIEW

- 14 Office of the Dean
 - 15 Architecture
 - 16 Landscape Architecture
 - 17 Urban Planning and Design
 - 18 Advanced Studies Programs
 - 20 the Loeb Fellowship Program
 - 21 Professional Development
-

OFFICE OF THE DEAN

Dean: Mohsen Mostafavi

Gund 417

Associate Dean of Academic Affairs: K. Michael Hays

617 495 4364

Executive Assistant to the Dean: Suneeta Gill

www.qsd.harvard.edu/inside/deans_office

Assistant: Jane Acheson

Dean of the Faculty of Design

The dean of the faculty is the chief executive officer of the Graduate School of Design. Appointed by the President and Fellows of Harvard College, the dean reports to the president for the overall governance of the GSD and its academic programs.

Associate Dean of Academic Affairs

The Associate Dean for Academic Affairs assists the Dean and departmental Chairs in the conceptualization of pedagogy, research, and the School's academic relation to the University, as well as in the guidance and oversight of academic integrity, curricular development, appointments and promotions, and junior faculty mentoring.

Faculty of Design

Academic policies, required courses of study, and the granting of degrees are the responsibility of the Faculty of Design as a whole. Academic departments and the various faculty committees advise the dean and the faculty on matters relating to the academic life of the Graduate School of Design.

Executive Committee

At the GSD, the Dean's Executive Committee advises the dean on all administrative policies and the operations of the School. Chaired by the dean of the Faculty of Design, the Committee ordinarily includes the department chairs and MDesS and doctoral directors, as well as the administrative deans.

Senior Faculty

Members of the faculty holding positions as professor and professor in practice serve as members of the Senior Faculty Council. Among its duties, the Council serves as the standing committee on appointments.

Visiting Committee

The Board of Overseers appoints a Visiting Committee to each school, department, or administrative unit at the University. Their purpose is to inform the Overseers about the state of the University. The members come from outside Harvard's regular faculty and administration. The GSD's Visiting Committee at any one time may consist of approximately twenty design practitioners, academics, planners, developers, legal experts, critics, artists, or other professionals with an interest in the GSD and the design and planning fields. They generally visit the School every two years and meet with the dean, faculty, and students.

ARCHITECTURE

Chair: Preston Scott Cohen

Gund 207

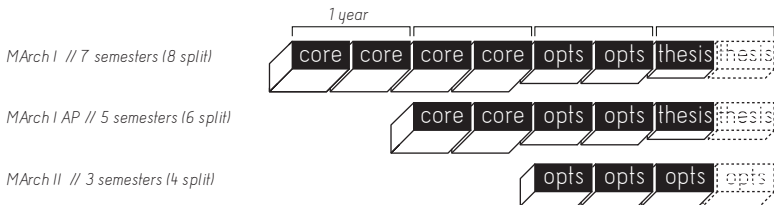
Program Director: Mark Mulligan

617 495 1234

Assistant to Chair: Andrea Croteau

www.gsd.harvard.edu/architecture

Program Coordinator: Jen Swartout



Master in Architecture I

The MArch I class is quite varied: some have BAs in architecture from large universities; others have history degrees from small liberal arts colleges. The variety of backgrounds yields many different approaches to studio projects and theory discussions, not to mention interesting conversations over Friday night Beer n Dogs. The Core Program involves two years of required courses followed by one year of options studio and elective classes and one final thesis semester. Each semester students take one studio course and three courses or the equivalent. Some courses are broken down into modules that are each a half semester long.

Master in Architecture I AP

MArch I AP students typically hold a four-year BA in architecture from rigorous undergraduate programs. AP students place out of the first year of the MArch I program and join the class in its third semester. MArch I AP candidates start off with two required core studios and some are able to place out of a few core courses, freeing up their schedule for elective courses. If you want to place out of something, bring supporting evidence to prove that you've already passed the course at another institution and a description of the course contents.

Master in Architecture II

MArch II candidates come to the GSD with a 5-year professional degree in architecture and many have work experience before returning for this degree. They are here for only 3 semesters (4 if they split) and begin with option studios. MArch II students have only one required class, proseminar: every other class is an elective. MArch II students are not required to take classes as a single entity, so they may feel a bit less connected than other programs at the onset, but they are in the enviable position of designing their own curriculum. Thesis is optional.

LANDSCAPE ARCHITECTURE

Chair: Charles Waldheim

Program Director: Anita Berrizbeitia

Assistant to Chair: Nicole Sander

Program Coordinator: Caroline P. Newton

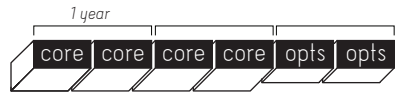
Department Administrator: Ellen Colleran

Gund 312

617 495 2367

www.gsd.harvard.edu/academic/la

MLA I // 6 semesters



MLA I AP // 4 semesters



MLA II // 3 semesters (4 split)



Master in Landscape Architecture I

The MLA I program is an accredited, first professional degree program for students with a 4-year bachelors degree with a major in any field of study. MLA I students follow a core curriculum for their first four semesters, then are eligible to pursue option studios and/or thesis and electives during their final year.

Master in Landscape Architecture I AP

Those who hold an accredited professional degree in architecture, or a pre-professional undergraduate degree in landscape architecture or architecture, and a strong design portfolio qualify for advanced standing and place out of the first year of the program and join the class in its third semester. After one year of core studio and classes, students enroll in option studios and/or thesis and electives for their final year.

Master in Landscape Architecture II

MLA II students enter the landscape architecture program holding a four or five-year bachelor of landscape architecture degree. MLA II students provide valuable insights into both academic and professional pursuits in landscape architecture. The MLA II program lasts three semesters, but like the MArch II program, MLA II students may 'split' and stretch their GSD education to two years. Enrolling in thesis instead of studio in the last semester is an option.

URBAN PLANNING AND DESIGN

Chair: Rahul Mehrotra

Gund 312

MAUD/MLAUD Director: Felipe Correa

617 495 2521

MUP Director: Jerold Kayden

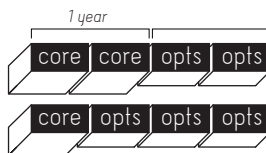
www.qsd.harvard.edu/academic/upd

Assistant to Chair: Nicole Sander

Program Coordinator: Caroline P. Newton

Department Administrator: Ellen Colleran

MUP // 4 semesters



MAUD / MLAUD // 4 semesters

Master in Urban Planning

The accredited two-year Master in Urban Planning (MUP) degree program, a first professional degree program, focuses on planning for the development, enhancement, and preservation of the built environment. Students enroll in a two-semester, full-year core studio and, during their final year, may pursue option studios, thesis or coursework (with approval). The program shares two professorships with the Harvard Kennedy School and administers joint degree programs with the Law School and the Harvard Kennedy School. MUP students come with a 4-year bachelors degree.

Master of Architecture in Urban Design

The program leading to the Master of Architecture in Urban Design (MAUD) is intended for individuals who have completed a five-year undergraduate professional program in architecture, an MArch or equivalent. Students begin with a one-semester core studio, 'Elements,' and may opt, in their remaining semesters to pursue option studios, thesis or coursework (with approval).

Master of Landscape Architecture in Urban Design

Jointly administered by the Department of Urban Planning and Design and the Department of Landscape Architecture, the program leading to the Master of Landscape Architecture in Urban Design (MLAUD) is intended for individuals who have completed a five-year undergraduate professional program in landscape architecture, an MLA or its equivalent. MLAUD candidates begin with a one-semester core studio, referred to as 'Elements,' and enroll in option studios and/or thesis or coursework (with approval) during their final semesters.

ADVANCED STUDIES PROGRAMS

MDesS Co-Directors:

Gund 334

Martin Bechthold + Sanford Kwinter

617 495 2337

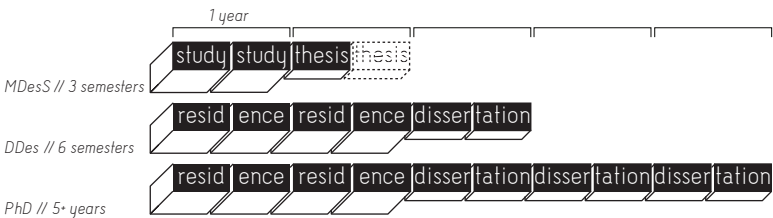
DDes Co-Directors + PhD Committee Co-Chairs:

www.gsd.harvard.edu/academic/asp

Michael Hays + Antoine Picon

Administrative Director: Barbara Elfman

ASP Staff Assistant: Maria Moran



Advanced Studies Programs

The Advanced Studies Programs (ASP) were created in 1992 by Dean Peter Rowe to provide opportunities for design professionals to advance their design knowledge and to become leaders in shaping the future of their fields. The ASP department includes the Master in Design Studies (MDesS), Doctor of Design (DDes), and Doctor of Philosophy (PhD) degree programs. ASP students benefit from the resources and faculty of the GSDs three academic departments.

Master in Design Studies

The MDesS program is a three-semester commitment and suits those who want to study a particular design area in depth. The students already hold a professional degree in architecture, landscape architecture or urban planning and design, or one in a related discipline. Students explore their interests through course work, independent study, and an independent thesis, rather than through design studios. MDesS students take many of the same classes as students enrolled in the architecture, landscape architecture and urban planning and design programs except for studio courses. Many MDesS students cross-register into courses at other Harvard schools and MIT. Like MArchs and MLA IIs, MDesS students may split their last semester.

MDesS Concentrations

MDesS students can choose one of the following areas of study: *Art, Design and Public Domain; Anticipatory Spatial Practice; Critical Conservation; History and Philosophy of Design; Real Estate; Sustainable Design; Technology; Urbanism. Landscape, Ecology.*

Doctor of Design

The Doctor of Design program focuses on applied research and emphasizes the advancement of knowledge in the design disciplines for students who already hold masters degrees. The DDes program is administered by the GSD and overseen by its faculty members, and students receive their degrees from the GSD. Upon admission to the doctoral program each student is assigned one faculty advisor whose job is to guide the student toward the best courses to develop a research foundation for her/his thesis. After one year of coursework DDes students prepare and pass a general examination on their research subject and begin to prepare a dissertation proposal that is reviewed by their advisor and another professor who will sit on their dissertation committee. Once they pass their general exam, a second year DDes candidate can act as a Teaching Fellow, responsible for teaching course sections, discussing reading assignments with students, and grading papers. In the third year the DDes candidate finishes his/her research and prepares the dissertation for defense to a committee of 3-4 faculty members from the GSD and often other institutions around the world. DDes students are provided with office space to work on their dissertations.

Doctor of Philosophy in Architecture, Landscape Architecture, and Urban Planning

The PhD program is co-governed by the GSD and Harvard University Graduate School of Arts and Sciences (GSAS). The degree is awarded by GSAS. The type of work done by these students is theoretical research leading to professional careers in academic settings. No previous masters degree is required, though it can certainly enhance an application. The PhD student takes coursework the first two years in residence and may take classes throughout the university as well as at MIT. Once the coursework is completed, the student takes a general exam with two faculty members prior to completing the 5th semester. A prospectus then follows. Once these benchmarks are completed, PhD candidates will spend the rest of their academic time teaching, researching, and writing in preparation for the defense of their dissertations. PhD students have office space at the GSD to work on their research.

LOEB FELLOWSHIP PROGRAM

Loeb Fellowship Curator: James Stockard

Gund 305

Coordinator: Sally Young

617 495 9345

www.gsd.harvard.edu/loebfellowship

Program Overview

Endowed through the generosity of John L. Loeb in 1969, each year the Loeb Fellowship program brings to the GSD ten outstanding, mid-career professionals working in fields related to design or the environment.

Based at the Graduate School of Design, the program offers annual post professional awards for independent study at Harvard. Through the Fellowship, participants have access to the Graduate School of Arts and Sciences, the Graduate School of Design, the Graduate School of Education, Harvard Business School, Harvard College, Harvard Divinity School, Harvard Law School, the Kennedy School of Government, and MIT. The Loeb Fellows are a valuable resource for GSD students who would like to expand their knowledge of a particular area by interacting with experienced design professionals.

Meet the Loeb Fellows

To get to know the Loeb Fellows, check out the Fellows postcard in the fall semester. This will appear in your mailbox and will provide short bios on each of the Fellows. This mailing will include an invitation to Meet the Loeb Fellows at a reception followed by a series of presentations early in September. There will be posters around the school publicizing the events as well. This is a great chance to get to know them early in the year.

Loeb Fellow Lectures

During the academic year, student organizations invite Loeb Fellows to give public lectures and lunchtime talks. In addition, Loeb Fellows often produce symposia in which design professionals have public discussions about design issues. These events are open to all GSD students. In particular, watch for the Loeb Public Seminars under the banner 'Loeb Fellows Invite'.

Loeb Fellow Lectures

Loeb Fellows also exhibit their work throughout the year. Look in the lobby gallery for their work, usually on the wall by the elevator. GSD students should feel welcome to seek out Loeb Fellows to serve as academic or career advisors, or even as studio critics. To get in touch with a Loeb Fellow, visit Sally Young at the Loeb Fellowship Program office, or email syoung@gsd.harvard.edu. Loeb Fellows email addresses are on the Loeb Fellowship website under their photo and bio at www.gsd.harvard.edu/loebfellowship.

PROFESSIONAL DEVELOPMENT

Executive Education

execed.gsd.harvard.edu

Executive Education at the Harvard University Graduate School of Design (GSD) provides a dynamic environment for architects, design professionals, real estate leaders, government officials, policy makers, and scholars from around the world to address emerging issues affecting their fields, learn new management strategies, and develop best practices. The programs are led by renowned faculty from across Harvard University as well as by eminent practitioners and scholars from across the country and around the world.

Design Programs

Encompassing a wide variety of subjects, including architecture, urban planning, design ideas and technologies, practice management, business development, and leadership, programs in design run from one to five days and are scheduled throughout the year.

Real Estate

Ranging in length from two days to six weeks, our programs in real estate cover a diverse range of topics and are specifically designed for developers, owners, financiers, senior public officials, leaders of community-based development corporations, and other real estate professionals.

Customized Programs

Executive Education will collaborate with your organization, firm, or group to design a tailored, customized program that delivers relevant, immediately applicable learning tools and knowledge to specifically meet your group's learning objectives.

Career Discovery

www.gsd.harvard.edu/professional/career_discovery/

The six-week summer Career Discovery program at the Harvard Graduate School of Design (GSD) welcomes people from recent high school and college graduates to seasoned professionals who are considering a career in design or planning, or who have a broad spectrum of interests and remarkably diverse plans and goals.

Participants commit themselves fully to a path of intensive studio work, lectures, workshops, and field trips. Deeply immersed in a culture that is both challenging and rewarding, students experience what education and work are like in the design and planning professions. They emerge, many of them exhilarated, with a more profound understanding of the possibilities ahead and the choices they will make.

**design
is better
than real
life*.**

T-Shirt from a GSD Field Trip to Artists For Humanity / photo: Shelby Elizabeth Doyle

THE CURRICULUM

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 - 36 Prizes + Awards + Fellowships
-

FALL 2011

August

M 1	Fall tuition due
W 24	International student orientation
Th 27	Orientation for all new students begins
M 29	Course presentations
Tu 30	Studio options presentations and lottery Limited-enrollment lottery closes
W 31	Classes begin, registration for returning students

September

F 2	Last day to submit November degree applications
M 5	Labor Day-no classes, offices closed
W 7	Fall course selections due
W 14	Last day to add or drop module 1 courses Last day for late registration Last day to take leave for full tuition refund
F 16	Last day to add or drop full-term courses Deadline to submit cross-registration petitions to the GSD and Harvard schools
W 28	Rosh Hashanah begins at sundown

October

W 5	Last day to take leave for 3/4 tuition refund
F 7	Yom Kippur begins at sundown
M 10	Columbus Day-classes at discretion of instructor, offices closed
M 17	Module 1 ends
Tu 18	Module 2 begins

November

Tu 1	Last day to add or drop module 2 courses
W 2	Last day to submit March degree applications Last day to take leave for 1/2 tuition refund
F 4	Open House
F 11	Veteran's Day-classes at discretion of instructor, offices closed
W 23	Start of Thanksgiving recess
M 28	End of Thanksgiving recess-classes resume

December

W 7	Last day of fall classes, module 2 ends Last day to submit leave of absence applications for spring 2012 Last day to withdraw from a course without receiving fall course grade Last day to take leave for 1/4 tuition refund (no refund after this date)
Th 8	Studio reviews begin
W 14	Studio reviews end
F 16	Fall examinations begin
W 21	Fall examinations end
Th 22	Winter recess begins. Gund Hall closes at 6:00 p.m.

SPRING 2012

January

Tu 3	Winter recess ends, Gund Hall reopens. Spring Tuition due. January Term begins
F 13	January Term ends
M 16	Martin Luther King, Jr. Day-offices closed
W 18	Course presentations
Th 19	Studio options presentations and lottery. Thesis reviews begin. Limited-enrollment lottery closes
F 20	Options studios begin. Thesis reviews end.
M 23	All other classes begin. Module 3 classes and FAS/GSAS classes begin
F 27	Spring course selections due

February

M 6	Last day to add or drop module 3 courses. Last day for late registration Last day to take leave for full tuition refund
F 10	Last day to add or drop full-term courses Deadline to submit cross-registration petitions to the GSD and Harvard schools
F 17	Last day to submit May degree applications
M 20	Last day for late registration
F 24	Presidents' Day-classes at discretion of instructor, offices closed

March

M 5	Module 3 ends
Tu 6	Module 4 begins
Sa 10	Spring recess begins
M 19	End of Spring recess-classes resume
Tu 20	Last day to add or drop module 4 courses
F 23	Last day to take leave for 1/2 tuition refund
F 30	Open House for admitted students

April

F 6	Passover begins
Su 8	Easter
F 13	2012-2013 financial aid application deadline for current students
W 25	Last day of spring classes, module 4 ends Last day to withdraw from a course without receiving spring course grade Last day to take leave for 1/4 tuition refund (no refund after this date)
Th 26	Studio reviews begin

May

W 2	Studio reviews end
Tu 8	Spring examinations begin
F 11	Spring examinations end
M 14	Thesis reviews begin
W 16	Thesis reviews end
Th 17	Thesis grading
Th 24	Commencement

THE DESIGN STUDIO

The studio method is central to the design education at the GSD. Each semester, approximately 80% of the student population is enrolled in a studio course, including thesis students. Studio desks are located in the back of Gund Hall, on what are called 'the trays.' Because desks are organized by studio, students change desks each semester, and vacate during the summer. Although studio work makes up less than half a student's credits each semester, it often takes up more than half a student's time.

Studio Work

For those students that don't come from a design background, a studio is probably unlike any other class you have ever taken. The studio is the center of your design education. Studios are composed of a dozen or so students under one critic's tutelage. Generally, core studios meet two or three times a week. During studio students are expected to be at their desks while the studio critic provides individual desk crits. A student's presence at studio is imperative to a design education. You learn a tremendous amount from your critic and your peers simply by observing how the same problem may be attacked in twelve different ways.

Studio work is expected to be individually authored, except in the case of specific collaborative assignments or in the thesis semester, when students may judiciously accept the freely offered assistance of their GSD classmates in preparation for their final presentation.

Presentations

Students will present their work many times throughout the semester. Studio work culminates in the Final Review, a formal presentation in front of guest critiques from within the GSD and beyond. In preparation for the Final Review, students will present their work in a series of pinups and reviews.

Pinups

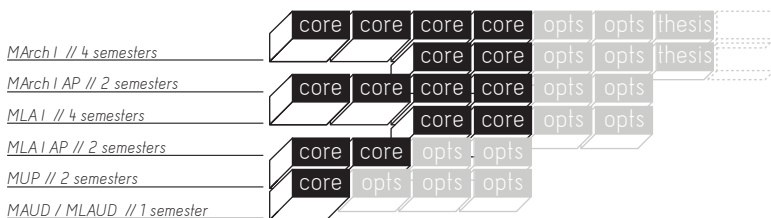
Pinups are informal presentations that take place during studio time where students will present their work in progress in front of their classmates and sometimes, in front of other studio classmates. These 'pinups' provide a chance to observe peer approaches to the same project and also practice the fine art of presentation. A studio will have on average, three or four 'pinups' per studio project. This number greatly varies however, depending on the critic and the needs of the students.

Reviews

Midterm reviews and final reviews are more formal pinups where outside professionals are invited to join the 'jury' and critique the student's work in front of his or her studio classmates.

CORE CURRICULUM

The Core curriculum includes required studio and non-studio course work tailored to create a foundation from which GSD students can build upon when they enter their later semesters of Options studios and elective courses. Core is also a time of bonding for the students who undertake it, since every student in the same graduating class had at least a few of their early classes together. The number of core studios and courses varies from program to program.



Core Studios

Core studios are those studios that are compulsory and required to complete the various degree programs. Each student takes one studio per semester and attempts to learn and address fundamental techniques and methods of a design education. Core studios are administered by core coordinators who organize the program, site, schedule and pedagogy, and mid-term and final reviews.

The Coordinator

Core studios are administered by core coordinators who organize the program, site, schedule and pedagogy, and are responsible for assigning students to each section based on their past performance and background to achieve a balanced class.

Required Courses

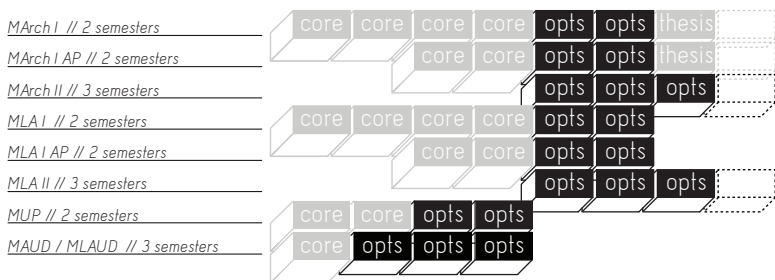
The GSD requires courses in a number of topics ranging from history and theory, building construction, site ecology, and public and private development. The core course content is determined by the different accreditation boards that meet with each academic department every five years. The required courses are either full-semester or broken down into half-semester 'modules,' numbered M1 and M2 for fall semester modules, and M3 and M4 for spring modules. This is particularly true for the MArch I program. For a complete list of degree requirements, students should consult the GSD website (and program offices).

Waiving Core Courses

Some students can place out of or 'waive' core courses by demonstrating to the course instructors that they have already passed equivalent courses at other institutions. See 'Waiver of Required Courses' in 'Degree Requirements' under 'Academic Information.'

OPTION STUDIOS

Option studios begin after core requirements are finished. The GSD offers approximately 40 option studios each year, and students who are eligible to take option studios select their preferences in a lottery system. Option studios address a wide range of problems, topics and contexts: many studios give students the opportunity to work with a prominent practitioner serving as a visiting studio critic to the GSD. Option studios also allow students from one department to take a studio hosted by another department, however, each department limits the number of studios that a student can take outside of his or her degree program.



Option Studios Presentations

Before classes begin each semester, studio critics give presentations about their upcoming option studios. Because they provide a glimpse into the critic's interests and work, these presentations are well-attended by everyone in the school. Immediately following the presentations, the famed studio lottery begins in which you and every other eligible student at the GSD tries to get into the Urban Planning and Design Hawaii studio, or the one with the free trip to Japan. Lottery results are posted online by the end of the day and, if there will be a first meeting that day, it will be announced at the presentations. www.gsd.harvard.edu/courses

TRAVEL POLICIES FOR OPTION STUDIOS

Many GSD students will be lucky enough to travel either domestically or internationally with one or more of their Options Studios. Please read the travel advisories and information provided by the U.S. State Department carefully. Visit travel.state.gov/ to read Travel Warnings and Consular Information Sheets with information on the country(ies) you will be visiting.

Emergency Assistance

Harvard University has contracted with a company called 'International SOS' (ISOS) to provide 24-hour worldwide emergency medical and evacuation assistance for Harvard students traveling abroad on University business. For more information, visit vpf-web.harvard.edu/rmas/4_insurance/IntlSOS.html. Your program coordinator will give you a copy of an SOS card that you should keep with you.

Register Your Itinerary

We strongly encourage you to store your personal travel information and any other pertinent information such as medical information, emergency contact names/numbers and your travel itinerary in the secure Personal Travel Record. (From the ISOS website, enter the Harvard membership number to login, and then click on the text 'Personal Travel Record.')

Registering your itinerary greatly improves the response time for a crisis.

International Students

If you are an international student and traveling outside the U.S., it is your responsibility to ensure that you are in compliance with all the DHS regulations and that you have the proper documents for travel and re-entry into the United States. Please remember to bring your passport (please make sure that you have a valid visa stamp), I-20, DS-2019 and all other visa documents. If you are an international student please contact the International Office's website for guidance on travel: io.harvard.edu. Also, please be sure to use your legal name for all transactions such as airline tickets to avoid any confusion.

Travel Tips

While on your trip, there are a few obvious things to consider. Do not pack firearms or anything remotely dangerous (yes, a student brought a gun along on a studio trip and it caused a lot of trouble). Dress respectfully: you are a guest and representing Harvard University. If you want to go off on your own, make sure the leader of the trip knows where you are going, when you will be back and how to reach you. Write down all of your important information (passport number, credit card numbers and phone number to call should they get lost or stolen and store the information in a separate location).

ELECTIVES

In addition to satisfying all of his or her program's core course requirements, a student may choose to take any course at the GSD (that includes other department's 'core' classes--but not 'core' studios) or cross-registered courses at Harvard schools, MIT, or the Fletcher School of Law and Diplomacy at Tufts. Keep in mind, however, that each department of the GSD has certain subject areas that you must fulfill with electives.

Course Presentations

Course presentations for seminars, limited enrollment classes, and other classes take place the day before option studio presentations. For the first time this year, some instructors will elect to have their course presentations online instead. This is a chance to learn more about the content and instructor, and figure out if the workload is going to require a big paper during exams. The lottery system for courses is much less rigorous than for studio options, and you can submit your top three ranked choices online before, during, and immediately after the presentations. Your choices are not binding but, if you get in a limited enrollment class, you must attend the first class or you may lose your spot.

Adding, Dropping + Withdrawing

Please note that there is a deadline for adding or dropping courses. Adding a course requires the instructor's signature but dropping a course does not. An add/drop petition can be picked up in the Office of Student Services, room 422). It is possible to add or drop a course after the deadline, but the process is a bit more tedious. A student can drop a course up until the final day the course meets, but dropping after the add/drop deadline will result in a withdrawal and a permanent notation of 'WD' is made on the students transcript. When Cross Registering, note that registration and withdrawals for that particular course will conform to the schedule for the school where your course is offered, rather than the GSD schedule, unless the GSD deadlines are earlier.

Cross-Registration at Other Schools

GSD students are welcome to cross-register at MIT, the Fletcher School of Law and Diplomacy, and any other Harvard school. Each term, a GSD student may cross-register for up to one-half of their total course load that term (with the exception of MDesS students, who have more particular requirements in this regard). Academic calendars vary from school to school, so check each school's start and end dates, as well as deadlines. You can browse through classes at coursecatalog.harvard.edu. Course bulletins for Harvard schools and MIT are available on the Registrar's website. For more info on cross-registration, see www.gsd.harvard.edu/registrar.

How to Cross Register

To cross-register, download, and print a petition from the course catalog website, get the instructor's signature, and then drop it off at the other school's registrar's office.

Tips for Choosing an Elective

Aside from course presentations, here are some other ways to help you choose your electives.

Ask Around

Asking around is one of the best ways to ensure that you are happy with your electives. Class presentations, like movie trailers, can all sound amazing. Your fellow GSDers will tell you the truth about workload, teaching methods, and what a professor is really like during a lecture.

Consult Course Evaluations

For classes that have been offered in past years, you may wish to consult the course evaluations, the anonymous forms students fill out for each course at the end of each semester. The results are available at the academic department offices.

Getting off the Waitlist

If the rest of the GSD have signed up for one of 12 slots in a popular seminar, and your name is 50th on the wait list, don't give up. The most popular seminar classes always have huge wait lists. If you really want to join a class, be persistent and keep attending. After the initial rush, class popularity settles down and students usually find their way into their desired classes.

Important Registration Dates *Fall 2011* *Spring 2012*

Course Presentations	Aug 29	Jan 18
Studio Options Presentations	Aug 30	Jan 19
First day of classes	Aug 31	Jan 23
Course selection due	Sept 07	Jan 27
Last day to add/drop Module 1 courses	Sept 16	Feb 10
Last day to add/drop Module 2 courses	Nov 01	Mar 20
Last day of classes / Last day to withdraw	Dec 07	Apr 25

THESIS

Only MArch I and MArch I AP students are required to complete a thesis project, although other students can opt to do a thesis. MArch I students complete their thesis projects during their seventh semester (or eighth semester if they opt to split), and make their final presentations in January (or May if they split). Plan to attend the thesis presentations.

Thesis Advisor

The thesis process really starts during a MArch I's fifth semester (third semester for MArch I APs, or first semester for MArch IIs), when you 'interview' faculty members in order to figure out who would be the best thesis advisor for you. During these informal discussions, students present their potential thesis topics to faculty members who, in turn, try to determine which topics are aligned with their interests. As one faculty member has described the process, "It's kind of like going to the 8th Grade Dance." You want to ask the boy, and the boy wants to ask you, but no one will directly invite each other without first assessing the situation. And passing a few notes in study hall.

Thesis Prep

During your second-to-last semester (unless you decide to split), you will formally select an advisor and begin preparing your thesis. This semester is often referred to as doing 'thesis prep.' It is a semester-long process of doing background research and conceptual preparation for a design project that is entirely your own.

Assembling a Thesis Workforce

Because of the large scale of thesis projects, many thesis students receive help from GSD students in 'younger' classes, especially during the final production push after everyone else has finished their final reviews. This symbiotic relationship gives future thesis students a glimpse of the scale, scope, and variety of thesis projects completed each year at the GSD, and gives thesis students the workforce they need to achieve their ambitious model-making dreams. Thesis students are expected to acknowledge their helpers and their contributions during their thesis review. It is understood that this work is undertaken on a volunteer basis and the only forms of payment accepted are pizza and coffee.

SPLITTING

Splitting is an option for any student whose degree program is an odd number of semesters. MArch I, MArch I AP, MArch II, MLA II, and MDesS students are the only students at the GSD who may choose to 'split' their last semester's coursework over two semesters, thereby graduating from the GSD in May instead of March. Students who are given the opportunity to split are essentially part-time students during their last two semesters at the GSD.

Splitting and Thesis

Many MArch I and MArch I AP students pursue the split semester option because it allows them to concentrate on preparing his/her thesis without the demands of studio. By choosing to split, you can delay the beginning of thesis by one semester. Preparing for thesis normally begins during the sixth semester (while you are taking your last option studio), with thesis culminating in the seventh. If you split, you can begin this process one semester later, depending on which semester a student plans to enroll in thesis during his or her split year. It depends on when you decide to 'split,' and what works best for you and your thesis advisor.

Splitting for Non-Thesis Students

MArch II and MLA II students who split have the option of dividing their third and final semester's coursework over two semesters: for example, they can prepare a thesis, or take their final option studio during the fall or spring. Occasionally, depending on the numbers, a student may be asked to take their final option studio in the fall. If interest in the split semester option is high, a lottery may be instituted to determine who will take studio in the fall and who will take it in the spring. MDesS students must receive permission to split, extending their program to four semesters.

Tuition and Financial Aid

The GSD does not charge students extra tuition to split, rather one semester's tuition is divided evenly between the two semesters. However those who split do not get a desk in Gund Hall during the semester in which they are not enrolled in studio or thesis. Students with financial aid get one-half of their yearly grant each semester. While the tuition charge is only for one semester, the aid budget for split-semester is higher since you have a full year of living expenses, fees, books, etc. Split-semester aid recipients are still eligible for federal loans and work study since they are enrolled at least half-time.

GRADES

While it may appear that the GSD is on a pass/fail system, there are actually quite a lot of different grades given (see below). To learn more about the system, check out the official word in the Policies section. If a student receives an excessive number of low pass, permanent incomplete or fail grades (or the equivalent at cross-registered schools), it may result in action under the GSD policy on 'Satisfactory Progress and Termination,' also described in the Policies section. Students should meet with their program director, advisor and/or the Dean of Students if they are concerned about their academic progress.

Credit

Distinction (DIS)

High Pass (HP)

Pass (P)

Low Pass (LP)

1 unit = .5 deficiency unit

No Credit

Fail (F)

1 unit = 1 deficiency unit

Instructor's Role

Instructors are expected to provide timely feedback to students. Exams or required papers should be returned, with grading and/or written comments, within a reasonable amount of time. Design critics should engage in regular crits and reviews throughout the term and should be readily available after midterm and final reviews for individual exit interviews.

Core Grading

Core studios are unique in that while each student works on the same design problem posed by the core coordinator, the studio is subdivided into sections led by different instructors with different values, personalities and sometimes, final requirements. For this reason, there are some special grading procedures specifically for core studios.

Mid-Term Assessment

Core studio critics are required to conduct mid-term assessment meetings with each student. The intent is to give students personal feedback on their performance in the course. Since this is not usually held at your desk, it's also a good chance to have a candid one-on-one conversation with a critic.

Final Grading Session

After the final reviews, all of the students' work for the semester is assembled in a room to be reviewed by the core instructors. This grading session is an important occasion to consider students' work as a class in order to arrive at a common criteria and standard for fair assessment for each student's grade.

Academic Difficulty

Often at the GSD, your grade in a class may be unknown to you until final grades arrive in your mailbox. Studios do not have graded assignments, and many courses are graded heavily on the final assignment, making it difficult at times to assess your projected grade in a course. Students who are concerned can contact their instructor or discuss their progress during their instructor's office hours.

Warning Letters

Instructors will send mid-term warning letters approximately eight weeks into the term to those students who are experiencing academic difficulty. The purpose of these letters is to inform students that if their academic performance does not improve they may receive a grade of low pass or fail. Students who experience academic difficulty after the middle of the term should also receive a written warning. Failure on the part of the instructor to submit a warning letter to a student, however, does not preclude the instructor from assigning a Low Pass or Fail.

A copy of the letter is forwarded to the student's academic advisor and the registrar in the Office of Student Services for inclusion in the student's file. The letter will remain permanently in the student's file regardless of the student's final grade.

Warning Letters for Modules

Due to the brevity of module courses, faculty members are not expected to send warning letters midway through the module although students who are clearly in academic difficulty early in the course should be notified.

Dialogue

Mid-term warning letters should not substitute for on-going communication between an instructor and student. Just as it is important for an instructor to give feedback, you should contact the instructor or your academic advisor or program director if you have any concerns about your academic progress. If you feel uncomfortable about an academic situation and would like an impartial ear, Laura Snowdon in the Office of Student Services is a great resource: she's a sympathetic student-oriented link to the ins-and-outs of the GSD system.

COURSE EVALUATIONS

Your chance to anonymously grade your critics and courses happens at the end of the semester when you are asked to fill out a course evaluation. These are taken seriously by the administration, so make sure you don't rush through them. Also, if there are problems with a class during the semester, don't hesitate to contact your academic advisor, program director, or Dean of Students. Course evaluations are also a good source to consult when choosing electives. The results are available in the academic department offices.

PRIZES + AWARDS + FELLOWSHIPS

Harvard has a lot of resources. Some prizes you need to be nominated for, and others you can apply for. For more information: www.gsd.harvard.edu/academic/fellowships

Prizes + Fellowships Awarded by Harvard University

Frederick Sheldon Traveling Fellowships

Awarded by: Harvard University
Nature of Award: travel grant

Frank Knox Memorial Traveling Fellowships

Awarded by: Harvard University
Nature of Award: academic support abroad

Howard T. Fisher Prize in Geographic Information Science (GIS)

Awarded by: Harvard Committee
Basis of Award: innovation and excellence

Sinclair Kennedy Traveling Fellowships

Awarded by: Harvard University
Nature of Award: travel grant

Prizes + Fellowships Awarded by the GSD

Community Service Fellowship Program

Awarded by: Career Services
Nature of Award: support for internship
Basis of Award: professional suitability

Clifford Wong Prize in Housing Design

Awarded by: GSD Faculty
Basis of Award: studio or thesis project on multifamily housing

Digital Design Prize

Awarded by: GSD Faculty
Basis of Award: expertise in digital media

Gerald M. McCue Medal

Awarded by: GSD Faculty
Basis of Award: highest academic record

Pforzheimer Fellowships

Awarded by: Student Services + Financial Aid
Nature of Award: support for internship
Eligibility: Harvard College graduate

Peter Rice Prize for Innovation in Architecture and Design

Awarded by: GSD Faculty
Basis of Award: highest academic record

OUTSTANDING ACHIEVEMENT AWARDS

Advanced Studies Programs

Daniel L. Schodek Award for Technology and Sustainability

Awarded by: ASP Committee
Eligibility: current MDesS student
Nature of Award: book
Basis of Award: outstanding academic achievement

Dimitris Pikionis Award

Awarded by: ASP Committee
Eligibility: current MDesS student
Basis of Award: outstanding academic achievement

Architecture

American Institute of Architects (AIA) Medal

Nature of Award: medal, letter
Eligibility: graduating MArch I students
Basis of Award: highest academic

American Institute of Archi- tects (AIA) Certificate of Merit

Awarded by: AIA (Architecture Department)
Eligibility: graduating MArch I students
Basis of Award: 2nd highest academic achievement

Alpha Rho Chi Medal

Awarded by: Alpha Rho Chi (Architecture Department)
Eligibility: graduating MArch I students
Basis of Award: leadership + service

Julia Amory Appleton Traveling Fellowship

Awarded by: Architecture Department
Eligibility: graduating architecture students
Basis of Award: academic record, travel expenses, statement, portfolio

Araldo Cossutta Annual Prize for Design Excellence

Awarded by: Architecture Department
Eligibility: MArch I students who have just finished core
Basis of Award: design excellence

Faculty Design Award

Awarded by: Architecture Department
Eligibility: graduating architecture students
Basis of Award: significant design

James Templeton Kelley Prize

Awarded by: BSA (Architecture Department)
Eligibility: graduating architecture students
Basis of Award: best thesis or final design project

Kevin V. Kieran Prize

Awarded by: Architecture Department
Eligibility: graduating MArch II students
Basis of Award: highest academic achievement

Arthur E. Wheelwright Traveling Fellowship

Awarded by: Architecture Department
Eligibility: all MArch or MAUD alumni
Basis of Award: portfolio, recommendations, proposal

Landscape Architecture

ASLA Certificate of Honor

Awarded by: ASLA (Landscape Department)
Eligibility: MLA students in final year of study

ASLA Certificate of Merit

Awarded by: ASLA (Landscape Department)
Eligibility: MLA students in final year of study

Charles Eliot Traveling Fellowship

Awarded by: Landscape Department
Eligibility: graduated within 3 years of date
Basis of Award: departmental vote

Norman T. Newton Prize

Awarded by: Landscape Department
Eligibility: graduating MLA students
Method: departmental vote

Peter Walker and Partners Fellowship for Landscape Architecture

Awarded by: Landscape Department
Eligibility: graduating MLA students
Basis of Award: accomplishment in landscape design

Jacob Weidenmann Prize

Awarded by: Landscape Department
Eligibility: graduating MLA students
Basis of Award: faculty vote

Penny White Student Projects Fund

Awarded by: Landscape Department
Basis of Award: proposals that best meet 'the promotion of creative thought'

Urban Planning + Design

Award for Outstanding Leadership in Urban Planning

Awarded by: UPD Department
Eligibility: graduating MUPs
Basis of Award: leadership

Award for Outstanding Leadership in Urban Design

Awarded by: UPD Department
Eligibility: graduating MAUD/MLAUDs
Basis of Award: highest academic

Award for Academic Excellence in Urban Planning

Awarded by: UPD Department
Eligibility: graduating MUPs
Basis of Award: highest academic

Award for Academic Excellence in Urban Design

Awarded by: UPD Department
Eligibility: graduating MAUD/MLAUDs
Basis of Award: highest academic

Druker Traveling Fellowship

Awarded by: UPD Department
Basis of Award: academic achievement and proposal

Ferdinand Colloredo-Mansfeld Prize for Superior Achievement in Real Estate Studies

Awarded by: UPD Department
Nature of Award: certificate, stipend to assist with publication
Eligibility: All graduating students
Basis of Award: superior academic accomplishment and leadership in real estate studies

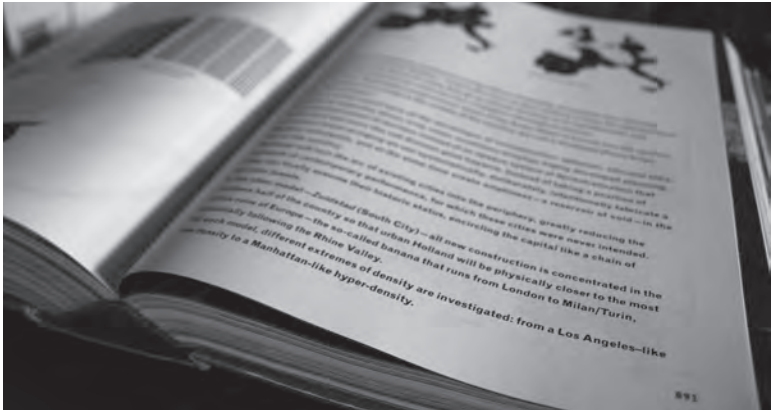
Urban Planning and Design Thesis Prize

Awarded by: UPD Department
Nature of Award: certificate, stipend to assist with publication
Eligibility: graduating UPD students
Basis of Award: best thesis

Other

Fulbright Commission Grants

Awarded by: Fulbright Commission
Eligibility: U.S. citizens
Basis of Award: statement



S,M,L,XL / photo: Gerard Patawaran

LIBRARIES

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-

FRANCES LOEB LIBRARY

Monday -Thursday	9am-9pm	Gund First Floor
Friday	9am-6pm	617 495 9163
Saturday	12pm-4pm	www.qsd.harvard.edu/library
Sunday	12pm-8pm	

The Frances Loeb Library of the GSD includes a book and journal collection of some 300,000 volumes and hundreds of thousands of individual images and original materials related to the fields of architecture, landscape architecture, urban design and planning. In addition, hundreds of E-Resources are also available through the online catalogue HOLLIS, which also includes the holdings of the entire Harvard University library system. The online catalogue of printed resources is complemented by VIA (the University's image collections database) and OASIS (which includes manuscript, archival, and special collections inventories).

A Note From the Librarian

Visit the Loeb Library's website for further information on the library. Please take special note of the opportunities to schedule in-depth reference interviews related to individual research projects, and feel free to suggest to library staff the acquisition of books, journals, or visual materials that you believe would enrich our collection.

Service Desk

The staff at the Service Desk will help you make the most of the wealth of Harvard library resources. Circulation services include support for course reserves, circulation of library materials, interlibrary loan and Harvard-wide 'Scan and Deliver' document delivery, help with library copiers and scanners, and much, much more. The Reference staff will assist you with your research endeavors by offering an array of tours and training sessions as well as individual and small group consultations. Stop by the Service Desk, visit the Reference and Research page, or email us at libref@qsd.harvard.edu.

Library Information Systems Department

Monday-Friday 9am-5pm // klau@qsd.harvard.edu

The LIS Department works collaboratively with faculty, staff and students to provide support and consultation for Course iSites -the GSD's online Learning Management System- to create and improve web course materials, as well as other instructional technology and pedagogical tools. The Department also provides information technology solutions and equipment for patron and staff use within the library, including support for the library's digitization and archival goals.

Special Collections Department

Monday-Friday 1pm-4:45pm

The Department includes the Rare Book Collection and the Le Corbusier Research Collection (both accessible through HOLLIS) and the Special Collections—the archival collections of original materials. A number of the Special Collections inventories can be accessed through the OASIS database *loasis.lib.harvard.edu*. The Department is also a site for exhibitions and other library-related meetings, presentations, and activities. Please visit the website to see a complete listing of collections, to submit reference questions and to review general policies on access and the use of department holdings.

www.gsd.harvard.edu/loeb_library/special_collections

Visual Resources Department

Monday-Friday 9am-4:45pm

The Department holds digital images, videos, DVDs, maps and plans, photographs, and specialized equipment, including a slide scanner and copy stand. Many of the digital images and slides can be accessed through VIA (*via.harvard.edu*), Harvard's catalogue of visual resources.

www.gsd.harvard.edu/loeb_library/visual_resources

HOLLIS AND THE AVERY INDEX

HOLLIS (the Harvard University catalog) and the Avery Index are two invaluable databases you should know about when doing research at the GSD. *lib.harvard.edu*

HOLLIS

HOLLIS is the online catalog for all the Harvard Libraries. It also serves as a portal to the thousands of electronic indexes, databases, and journals. You can search for a book and find its location(s) in every Harvard library. *hollis.harvard.edu*

Avery Index to Architectural Periodicals

Avery Index provides citations to articles on archeology, architecture, city planning, landscape architecture, interior design, and historic preservation from Harvard's collection of periodicals. Type in the keywords of the project or designer you're looking for and Avery conveniently lists magazines that contain articles on your chosen topic.

OTHER LIBRARIES

Numerous other University libraries may hold material of relevance to your research and projects or provide a cozy reading room when you need a break from the GSD. Harvard alone has more than seventy individual libraries (www.lib.harvard.edu) which may be of interest. GSD students can even borrow from MIT's Rotch Library or get a Cambridge Library card.

Cabot Science Library

1 Oxford Street
hcl.harvard.edu/cabot

617 495 5355

Located just on the other side of Memorial Hall, the Science Library is a great resource for design books. Books on information sciences, soil retention, and other popular design subjects that are always checked out of Loeb are usually in abundance at the Science Library.

Cambridge Public Library

449 Broadway Street, Cambridge
www.cambridgema.gov/cpl.aspx

617 349 4040

The original Van Brunt and Howe designed library underwent a recent addition by William Rawn Associates. There's a patio, eating and drinking zones indoors, and wifi and outlets in both modern and historic reading rooms making for a variety of study spots. Getting a library card requires proof of ID and local address, see the website for more details.

Fine Arts Library

Werner Otto Hall, 25 Prescott Street
hcl.harvard.edu/finearts

617 495 3374

Often books that are hard to find at Loeb Library can be found here. The Visual Collection has slides, prints, and drawings—real drawings, by real artists...like Rembrandt. Yup.

Fung Library

Knafel Building, 1737 Cambridge Street
hcl.harvard.edu/fung

617 496 0485

Next door to the Knafel building, the Fung Library houses material on international politics, foreign relations, economics, history, culture, and political science. There is an underground entrance to the Knafel building from our basement, and it's a great place to study.

Harvard Map Collection. Pusey Library

Harvard Yard: enter down the steps between Widener & Houghton Libraries
hcl.harvard.edu/maps

617 495 2477

America's oldest map collection with over half a million maps, this is a wonderful resource for GSD students. There is a wealth of information on GIS, lots of digital collections, and online GIS tutorials.

Houghton Library

Harvard Yard: to the left of Widener Library
hcl.harvard.edu/houghton

617 495 2441

Houses Harvard's rare book, manuscript, and print collections, including early materials on architecture and the H. H. Richardson drawings archive.

Lamont Library

Harvard Yard: southwest corner
hcl.harvard.edu/lamont

617 495 2451

The 'undergrad' library that's a great place to work-comfy chairs, mid-century modern light fixtures, and lots of nooks to curl up and study in. Plus, the library is open 24 hours Monday-Thursday and has its own cafe.

Rotch Library at MIT

77 Mass Ave, Cambridge (use stairs in left corner of lobby to 2nd floor)
libraries.mit.edu/rotch

617 258 5590

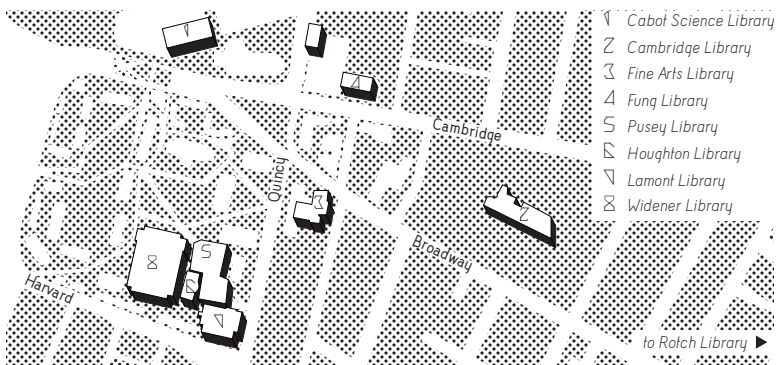
MIT's architecture and planning library is a useful resource for supplementing the materials in Loeb Library. GSD students have on-site access to all of MIT's libraries, and can obtain borrowing privileges by application at the Service Desk in Loeb Library. The Loeb and Rotch libraries also maintain a fax-based document delivery system for copies of periodical articles requested by students. Rotch is also one of the prettiest libraries around, winning lots of architecture awards back in the early 1990s when it was built.

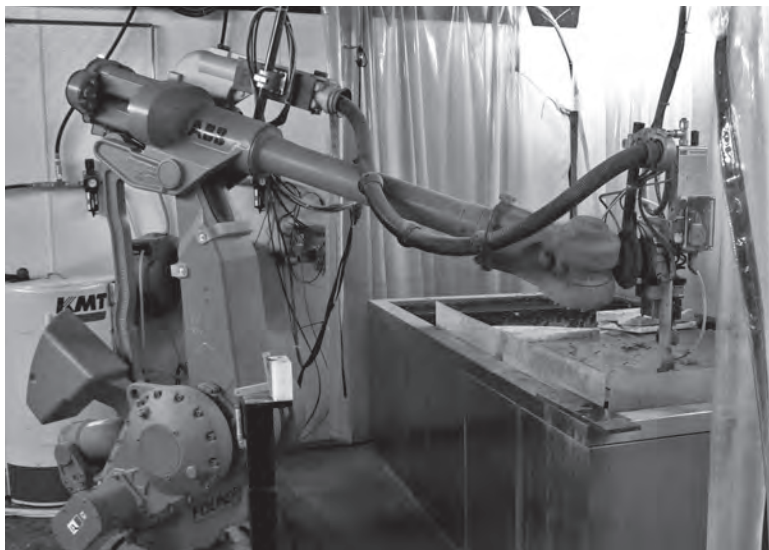
Widener Library

Harvard Yard
hcl.harvard.edu/widener

617 495 2411

The Harvard Library houses over 5 million volumes in the humanities and social sciences. Widener has undergone a complete overhaul (an AIA award winner!) so that it can provide a creme-de-la-creme library experience when searching for *The Wind-Up Bird Chronicle*.





Robotic Arm, GSD Fabrication Lab / photo: Shelby Elizabeth Doyle

RESOURCES + TECHNOLOGY

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COMPUTER RESOURCES GROUP

Monday -Friday 9am-5pm

Gund 520

617 496 3810

helpdesk@qsd.harvard.edu

Get to know the Computer Resources Group (CRG). They are a fantastic group of people who take care of the GSD computer network, server and email accounts, plotters, and most of the digital equipment in the GSD. They will answer questions and take care of any computer problem you have, from the smallest detail to the largest problem. Throughout the year, and especially at the beginning of the fall semester, the CRG offers workshops and tutorials on all aspects of GSD computing.

A Note from Stephen Ervin, CRG Director

The impacts of computing, digital culture upon design pedagogy and practice are manifold. The Computer Resources Group (CRG) maintains an environment in which information technology is available and easily accessible to serve all the members of the GSD community. We manage a complex computer network, supporting Windows, Macintosh, and Linux operating systems, providing a variety of services to staff and faculty for work and research, as well as to students for required course work and independent study.

Every student desk in the studio area is provided with a network connection to enable student-owned computers to be hooked-up into the GSD network, and each GSD student is assigned a network account that enables use of state-of-the-art software provided over the network, as well as email and access to the Internet and World Wide Web. This account also provides access to sophisticated input and output devices including large format digitizers, slide and flat bed scanners, large format color plotters, high quality color printers, video and multimedia equipment, and CAD/CAM fabrication equipment.

Our goal is to provide a robust, heterogeneous, multi-platform, hub-distributed computing environment to support design computing at every level: from survival and literacy, on through productive exploration, and into mastery of the media. Coursework throughout the school is enabled by the online iCommons courseware system, which brings web enabled computer-aided learning to every course at the GSD that chooses to employ it. The professional staff of the Computer Resources Group are dedicated to our mission. We believe in-and want to share-the fun and learning that comes with design computing (along with the occasional pain and confusion)!

The Online Manual

The CRG has also compiled an extensive online manual covering everything you need to know about computing at the GSD: setting up your computer, printers, email, etc. everything is on-line. www.gsd.harvard.edu/manual

Setting up Your PIN

A crucial first step, establishing a Harvard PIN number will give you online access to all of Harvard's e-services including *my.GSD*, your customized portal, Crimson Cash, and library resources (you can use Avery from the comfort of your studio desk). Go to www.pin1.harvard.edu/ and follow the instructions to request a new PIN. Now, whenever you try to access a Harvard website that asks for a Harvard PIN (such as recalling a book from HOLLIS, setting up a gym account, etc.), you'll be ready to go!

Hardware Resources

A primary purpose of the Local Area Network is to connect students' individual machines to central resources (software, disk space, printers, scanners, etc.). Most of the computer workstations at the GSD are privately owned and maintained by students.

Software Resources

The CRG maintains an active inventory of current software, which is freely available to students for use on their computers within Gund Hall or via VPN.

TIPS FOR GSD COMPUTING

We had Stephen Ervin, Director of the CRG, answer his most frequently asked questions.

General Recommendations

Students should understand the perils of 'cracked' or 'bootleg' software.

In addition to being unethical to use, it often has associated viruses and malware with its distribution: it causes bad public-relations for us with software vendors: and can be a headache to try and troubleshoot software problems when official versions, add-ons and plugins, etc aren't compatible with the illegal variants. We have a large inventory of current software (not always the very latest versions, true - for stability's sake!) and students can always get a VPN account (for a small charge) in order to use GSD software when away from the school, if that's important.

Book resources ahead of time.

Some students assume that they will just walk in 5 minutes before class and get what they need, which sometimes is not possible. Always allow an hour to rehearse, verify that the required software & plugins are installed, etc. Loaner laptops may not have the same configuration as lab machines, or students' own machines.

Always have a back up of, at least, your most important files.

A lot of times, when the help desk has to troubleshoot a problem, there is a chance of data loss and it would be helpful if the student had a backup of their files, so that the help desk doesn't have to waste time backing up students files or worse recover files after the disaster.

Learn how to manage the plot system.

If the student decides to send the same plot to another plotter because he/she thinks that the one they sent to is not working, they have to delete the job from the plot queue or the file will be eventually plotted out and the student will be charged for it. Everyone needs to learn how to use the 'job monitor' software part of the plot system.

When you are running cracked software, admit it.

It would make it easier for both the help desk and the students if they would just admit that they are running a cracked version of a particular piece of software when trying to troubleshoot problems. CRG official versions, updates, add-ons and other software may not be compatible with illegal copies, and trying to troubleshoot can be frustrating and time-wasting.

FAQs

What is the plot system + how does it work?

Making large-format (36" or wider) paper output remains a staple of the design professions & education. The 'plot' system is the online system of hardware and software that enables large-format color plots to be created from drawings and images prepared with design software (Photoshop, Illustrator, InDesign, AutoCAD, etc.) on the several color inkjet plotters distributed throughout Gund Hall. Visit plot.design.harvard.edu and www.qsd.harvard.edu/manual/.

Who can restart it + how do I cancel a plot?

The plot system is administered by Computer Resources staff, on-duty M-F 9a-5p, and on-call evenings and weekends at high-demand times. Student technical assistants on-duty evenings and weekends can perform basic troubleshooting and assistance with the plot system (and can contact technical staff as needed.) Each plot user can cancel a job submitted by themselves at any time. Charges are made for fractional plots.

Should I send my job to multiple plotters?

The plot system is continually improved for efficiency, robustness, and throughput, and it is never efficient to send the same output to multiple plotters unless multiple copies are required and circumstances make it a socially acceptable technique (i.e., not during times of high demand). Naturally, the system has finite capacity and throughput, and so if every student submits a plot job at the same instant, it can take hours for them all to be plotted (at about 4 minutes per average-sized plot). It is always best to schedule plotting in advance, to distribute the load by group agreements and sign-up sheets, and to not wait until the last minute to plot.

How much does plotting cost?

Large-format color plotting is charged by the square foot, at an average composite cost calibrated to cover the paper and ink consumed and ongoing maintenance of the plotters. The square foot cost is posted online, and at the plotters.

Do you earn a profit off of student printing?

No. Although 'full cost-recovery' of paper and ink is the goal of the annual recalibration of charges, this does not cover the costs of depreciation and maintenance of the equipment, which is renewed every few years.

How do I know how much I've spent plotting?

You can always check at help desk for your most-current balance. Some form of online check is possible: its accuracy and timeliness depends on ever-changing technologies. Nothing is free. The first \$25 of printing each year is included in your tuition and not separately billed: this amount allows for some testing, errors, and other inefficiencies.

Should students have their own printers?

It can be a convenience to have your own local ink-jet printer. They are usually not as fast, nor as efficient, as the school's network printers, and can require maintenance.

What paper does the GSD use + is it recycled?

We buy 'HP-certified' bond, matte and semi-gloss paper for the large format plotters: this assures the best color-fidelity and maintenance-free operation. Laser printers are stocked with office-grade bond paper, with some recycled content.

What if I want to plot on my own paper?

One plotter (in the basement room L41) is designated for 'sheet-feed' operation, and can take a wide range of media (special textured watercolor paper, card-stock, museum board, etc.). Results may vary for different media.

Who owns our data when its on the server?

The servers, the network, and the contents of disk space, are provided in support of the education activities at the school. Any activity that is deemed deleterious to the security or stability of the network, or is illegal, may be unilaterally dealt with by technical staff. All student work and/or content is only ever the property of the individual, except in some cases where work is performed for hire, and may be the property of the employer.

Can you (do you?) read our email?

Generally, no. Computer Resources staff (system administrators) are usually in a position, technically, to see the contents of un-encrypted data in files or electronic messages, if circumstances warrant: and are under strict professional guidelines with respect to appropriate use of these powers. Some log files of electronic transactions are kept for a short time, but are routinely deleted, and no active monitoring of email is performed except for some anti-virus and spam-filtering.

Can you see what we do on our computers?

No. Some aggregate statistics, such as network addresses visited, types of files transmitted, or licensed software in use, are kept and reviewed for capacity and performance planning.

Note

Sharing files on the Internet is generally not encrypted, and the contents, as well as source and destination addresses, can often be determined by any technically adept user of the network. Agents of the recording or software industries regularly do attempt to monitor such sharing, and when copyrighted material (usually music, movies, or software) is detected in transit to or stored on a computer at the GSD, a formal legal complaint may be registered against the University, and we are bound by law to respond, including with a 'credible threat' to remove network access from any computer found to be storing or sharing copyrighted material.

When are the servers down?

Tuesday evenings from 6-9 (except during high-demand times) are reserved for regular required server maintenance: though the actual hours of outage are few each year.

PRESENTATION SERVICES

Computer Resources maintains a small number of laptops, computers on rolling carts, plasma screens and multimedia projectors that can be used for presentations on a sign-up basis. Digital and video cameras are also available for loan from the library. Sign up for them in advance at the Service Desk (Gund First Floor).

Printers

Black and white and color laser printers are located throughout the building. The printers are easy to install (just check out the online manual for complete details at www.qsd.harvard.edu/manual/printing/). When setting up printers, look for the printers that are labelled with a floor number and 'North/South/Center' for example: printers that say 2 South are on the trays.

Plotters

Large format color plotters, and one high-speed black and white plotter, are located around Gund Hall. Check with the online manual for current locations. Additional plotters may be added at peak-demand times (final reviews). Plots are uploaded as PDF or JPG, tracked and canceled online. See the manual for additional information. plot.design.harvard.edu

Printing and Plotting Costs

Every student will be given a \$25 credit. See the CRG manual for current printing and plotting prices. Plotting is term billed and CRG will not give any refunds for prints, assuming the \$25 credit should cover occasional problems and waste.

Copiers + Color Copiers

Black and white copiers are located on the 2nd and 3rd trays and in the Loeb Library on the 1st floor and basement level. Color copiers can be found on the 3rd floor by the southwest elevator. For \$.90 per copy for 8 x 11 sheets, and \$1.80 per copy for 11 x 17 sheets, these prices are not to be beat. All copiers are operated with Crimson Cash. If there is a paper jam or other problem, go to Building Services in the basement (Gund L30, 8a-5p, 617 495 2514).

Photography Resources

Digital photographic equipment is available for students to check out from the library. This includes still and video cameras. A small photographic studio space is available for photographing models. Usually set up in Gund 518, this has solid color backdrops, lights, and tripods set up for use. Students must reserve times to use the space, on a sign-up sheet outside of the room or at help desk. There are no chemical darkrooms in Gund Hall. Contact Doug Cogger (dcogger@qsd.harvard.edu) for alternatives.

FABRICATION LAB

The GSD Fabrication Lab has both traditional tools and state-of-the-art technology available for model making and prototyping to faculty research and student course work. Given its role in a design school, the Fabrication Lab emphasizes the importance of understanding material characteristics and the entire fabrication process, regardless of the methods selected.

All areas of the Fabrication Lab can be inherently hazardous: policies and practices have been put in place to make it as safe and productive as possible. Orientation and training sessions are offered in all areas of the Fabrication Lab, addressing the Health and Safety Guidelines particular to that area. Persons not observing the Health and Safety Guidelines will be required to leave the Fabrication Lab.

More detailed information on all aspects of the Fabrication Lab, including tutorials for CNC equipment and CAD/CAM file preparation, and the Health and Safety Guidelines, is available on the Fabrication Lab website. www.qsd.harvard.edu/shop

Shop Store

The Shop Store provides students convenient access to consumable materials and tools for use in the Fabrication Lab. Chip board and acrylic sheets cut to laser bed size, milling tools and polystyrene foam, as well as expanding urethane glue, bondene and wood glue are available for purchase. The Shop Store is open for one hour each day and accepts Crimson Cash only: be sure to have enough money on your card. A list of available inventory and current prices is available on the website. *Gund L43*

Laser Cutters

There are a total of eight computer-controlled laser cutters available through the Fabrication Lab. Orientation sessions are required for access and are offered to students at the beginning of the academic year, during orientation. All of the laser cutters are able to cut paper products and thin wood veneers. Additionally, the six laser cutters located in L40 and L40e are able to cut acrylic and other non-metallic materials. The two additional laser cutters are located in the trays, in the third and fifth level north spray booths.

Laser cutters are available 24 hours a day, 7 days a week, and users incur no charge for their use. An online schedule is available to make hour-long reservations during the regular semester. During finals the schedule is preset based on studio course enrollment to ensure equal opportunity of access for all students. *Gund L40 and L40e / LaserTA@qsd.harvard.edu*

3D Printers

The Fabrication Lab has three types of rapid prototyping machines: two ZCorp starch-based 3D printers, one Stratasys Dimension ABS fused deposition modeler, and one high resolution Objet polyjet printer. These machines allow complex physical geometry to be realized, especially valuable for that which is not achievable with traditional techniques or tools.

Users are billed for the cost of material consumed in printing the file, based on either volume or weight, depending on the technology used. Files are printed by a trained 3D TA once a submitted STL (stereolithography) file has been approved. Each STL file submitted to 3dtmp on goliath should also be accompanied by a paper 3D Printing Order Form and an email to 3DTA. Students remove and clean their own 3D printed parts.

Due to demand and availability, the Fabrication Lab cannot guarantee printing times, especially during final reviews. Commercial printing services are available, links to some known resources can be found on the website. Limits on part dimensions and build times are enforced during the weeks of final reviews.

Gund L40a, L40b, and L40c // 3DTA@qsd.harvard.edu

CNC Routers

There are two 3-axis CNC (computer-numerically-controlled) routers available in the Fabrication Lab. Each has a large bed and is capable of surface milling and routing materials such as foam, modeling board, and wood products. Additionally, a small table-top 3-axis CNC mill is available in the Machine shop for use with the same materials.

Similar to the 3D printing process, files saved in *cnctmp* on goliath that are accompanied by an email and paper form are submitted to and approved by a trained CNC TA who then operates the machine. However, a significant amount of additional work is required as an MCX (MasterCAM) file is the required format (or G-code). Template MCX files are available on the website to help with this process. MasterCAM tutorials are also offered as part of the Digital Media Workshops each semester. Students must supply their own materials, including milling tools, and monitor the machine as it is milling their file, which can oftentimes take many hours.

Gund L32 and L33 / CNCTA@qsd.harvard.edu

CAD/CAM Workstations

Independent of the computers servicing each CNC machine, the Fabrication Lab has three dedicated workstations available to students for use in preparing files for the CNC routers, mills, robots, and 3D printers. All relevant software and affiliated files are updated and supported by Fabrication Lab staff and TA support. *Gund L40d*

Robotic Manipulators

Two industrial robotic manipulators allow the Fabrication Lab to offer 6-axis machining using a variety of possible tools. Located in the Machine Shop (L33a) is the 'small' robot, an ABB IRB 140. The 'large' robot, an ABB IRB 4400L, is located in the Robot Room (L19). Milling spindles, actuated grippers, and user-defined flexible tooling is available for both the large and small robot. Additionally, an abrasive waterjet cutting head, circular saw, and ceramic extruder are available for the large robot.

Fabrication Lab Staff and a small group of trained robot TAs are available to assist with access to these machines as their operation requires advanced training. Due to the flexible nature of industrial robots, programming files can be generated in a variety of ways for applications with an endless number of tools, but the most typical applications of the machines at the GSD (milling and waterjet cutting) utilize MasterCAM with RobotMaster for file generation. Other advanced methods can also be used to generate RAPID code.

Gund L19 and L33a / robotTA@gsd.harvard.edu

Wood Shop

The Wood Shop is open at least 80 hours per week, including the weekends, and is monitored at all times by a trained Wood Shop TA. Orientation sessions are required for all users and are offered at the beginning of the academic year. A variety of traditional wood working hand and power tools are available, including a SawStop table saw, drill press, jointer/planer, several band saws and pedestal sanders, mitre saw, and panel saw. Portable tools may be borrowed on a daily basis for use in the Project Room. *Gund L35*

Metal Shop

The Metal Shop is open upon request to users who have taken the Metal Shop orientation and demonstrated safe practices working within it. A qualified metal shop TA must be present when working in the Metal Shop. Equipment in the Metal Shop includes a horizontal band saw, vertical band saw, break, metal chop saw, sandblaster, drill press, mig welder for mild steel and aluminum, and a spot welder. *Gund L31a*

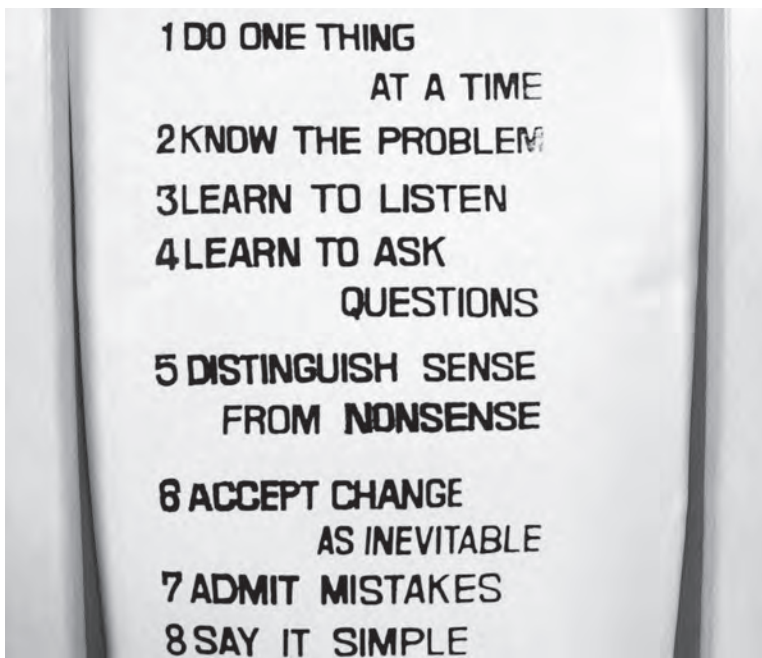
Machine Shop

The Machine Shop is equipped with two metal working machines, a lathe and CNC knee mill, primarily for the support of the robotic manipulators. Custom tooling and fixtures are achievable with the application of these precise tools. The 3-axis CNC knee mill is also available to students who have undergone advanced training with Fabrication Lab staff for the machining of precise parts in a range of materials including metals, dense wood, and other machinable plastics. *Gund L33a*

Project Room

The Project Room is open 24 hours a day, 7 days a week, and is the primary work space in the Fabrication Lab, equipped with work tables, three hot wire foam cutters, a thermoplastic vacuum former, sink, and spray booth. Additional spray booths are located in the trays, on the north end of the second and fourth levels for use with all aerosol products, such as paint, fixative, and spray mount.

The use of materials such as plaster, resin, and concrete, as well as any painting, staining or sealing of wood should be conducted in this space rather than in the Wood Shop or trays. The use of power tools borrowed from the Wood Shop requires that two people be present at all times in this space. Space for temporary material storage and project workspace can be reserved for a maximum of 7 days by filling out a green registration form. Materials and projects left beyond that time or those not accompanied by a green form may be discarded during the weekly cleaning routine. *Gund L31*



Sign from the ETH in Zurich, GSD Sponsored Trip / photo: Shelby Elizabeth Doyle

GSD ADMIN- ISTRATION

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STUDENT SERVICES

Carlos Reyes
Student Services Coordinator
Commencement Coordinator
creyes@gsd.harvard.edu

Office of Student Services
Gund 422
617 495 5453
Monday-Friday 10am-5pm

The GSD offers comprehensive assistance during your time at the GSD. The GSD staff is an amazing resource and they are here for you; get to know them and if you have any questions, just ask. If you're looking for a shoulder to cry on, help, advice, or absolutely anything else, the staff in the Office of Student Services are there for you and always do their best to help you out. The Office of Student Services houses: Admissions, Dean of Students (and disability services), Career Discovery, Career Services, Commencement Planning, Financial Assistance, and the Registrar. Other functions include Academic Support Services such as Graduate Student Learning Support, the Language Resource Center (LRC), and academic support for international students.

Admissions

Geri Nederhoff
Co-Director
gnederhoff@gsd.harvard.edu

Gail Gustafson
Co-Director
ggustafson@gsd.harvard.edu

Jill Harrington 617 495 5453
Coordinator
jharring@gsd.harvard.edu

Along with fielding admissions questions, this team also serves as a liaison with the GSAS housing office and the Harvard International Office. www.gsd.harvard.edu/admissions

Registrar

Sean Conlon
Registrar
sconlon@gsd.harvard.edu

Maria Murphy
Coordinator
mmurphy1@gsd.harvard.edu

617 496 1237

The registrar processes transcripts, changes of address, maintains student files, diplomas, and records and tracks students' course enrollments, schedules, leaves of absence, withdrawals and grades. www.gsd.harvard.edu/registrar.htm

Dean of Students

Laura Snowdon
Dean of Students and Coordinator for Students with Disabilities
lsnowdon@gsd.harvard.edu

617 496 1236

Laura Snowdon is available to talk with students about any issues or difficulties they are experiencing. You can send an email to set up a meeting, or you can stop by and try to catch her when she's free. If a student has a physical, learning or emotional disability (or suspects that he or she may have one), make an appointment to see Laura Snowdon, Dean of Students.

Financial Assistance

Keith Gnoza Director <i>kqnoza@qsd.harvard.edu</i>	Maria Murphy Coordinator <i>mmurphyj@qsd.harvard.edu</i>	617 495 5455
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The Office of Financial Assistance can help you with financial aid applications, loan adjustments, work-study cards, and questions about your term bill. Information about financial aid requirements and policy can be found in the Financial Aid Handbook which is located on the financial aid website. www.qsd.harvard.edu/finaid

Career Discovery

Kelly Teixeira Program Manager <i>kteixeir@qsd.harvard.edu</i>	617 495 8306
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If you think you want to teach, being a Career Discovery instructor is one of the best things you can do. Career Discovery is an intensive six-week summer program for people of all ages considering a career in design. The program runs from mid-June to the end of July. www.qsd.harvard.edu/professional/career_discovery

Career Services

Meryl Golden Director <i>mgolden@qsd.harvard.edu</i>	Anne Creamer Coordinator of Career Services <i>career@qsd.harvard.edu</i>	617 496 4296
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Career Services offers students several ways to connect with employers. Post your resume in an online Resume Book; participate in a Virtual Career Fair to connect with employers throughout the country and abroad; attend the annual spring Career Fair to meet employers; meet with recruiters who visit Gund Hall to hire GSD students. Students have online access to job postings and employer information through our website: harvardqsd.recruiting.com. Visit us often! Stop by for a walk-in conversation or schedule an appointment. We look forward to working with you. www.qsd.harvard.edu/career

Business Cards

Students who are current degree candidates in good standing are allowed to use the name and shield of the Graduate School of Design and/or the Harvard VE-RI-TAS shield on business cards, which must also accurately list the student's current degree program. To have business cards printed using a Harvard name and insignia, a student must first obtain a letter of authorization from the Harvard Trademark Program to provide to the business card printer. To obtain this letter the student must present a valid Harvard student identification card at the Harvard Trademark Program's office for authorization letters (walk-in hours for business card authorization letters are Monday-Friday from 10a - 4p). The office is located at University Place, 124 Mt. Auburn Street, Suite 570-N (617 495 9513 / trademarkprogram@harvard.edu / www.trademark.harvard.edu). The Trademark Office recommends using an in-house Harvard service for printing business cards.

www.uos.harvard.edu/transportation/mail_services/business_cards.shtml

ADVICE FROM CAREER SERVICES

We asked Meryl Golden, Director of Career Services, to give some general career advice and answer her most frequently asked questions.

Making the Most of Career Services

Learn to use eRecruiting.

Every GSD student has access to his or her own account in eRecruiting, our electronic recruiting system. This is your 24/7 source of information, a site that will provide you with direct access to our latest job postings, employer contacts, and much more. To activate your account, simply attend a brief orientation meeting hosted by Career Services.

Take charge of your own career.

By attending the GSD, you have access to an incredible community of professionals. To make the most of your time here, devote three hours a week to your career. Attend a career program or an alumni network event: visit with a career counselor to update your resume: access and utilize Harvard alumni contacts: read your email from Career Services. Make time to do career research when you are ahead of the curve, rather than the day before a deadline.

Read your email

We know, you're really busy. We do recommend that you follow our simple 'three hours a week' rule. Create time in your busy schedule to make you and your career a priority. We guarantee you'll be happy with the result.

FAQs

How do I get a Work Study job?

The first step begins with receiving your award from Financial Aid. Be sure to note how much you can earn for the year through work/study. The next step is to check for work study job listings in the Career Services online career management system, which is called eRecruiting. You can also check with individual departments at the GSD, and with the Harvard Student Employment Office (for work/study jobs across the university).

How do I get a TA (Teaching Assistant) position?

Several TA positions are posted in eRecruiting. Please note that some departments prefer to speak with students directly. Contact faculty directly to express your interest in being their TA.

Should I ever work for free?

What if a practicing architect asks me to work for free?

Preferably: NO. During economic downturns, it may be difficult to secure a paid job. As an alternative, consider using your work study award for a summer position. This works well in nonprofit and government settings, and can work with some design employers, too.

You may also apply for funding through the Community Service Fellowship Program. Some funding is available for 10-week summer internships in nonprofit settings.

Design students sometimes choose to work for free with high profile firms. If you choose this route, be aware that the work is often highly demanding and the hours are very long. We encourage you to explore several other options before you choose to do this. We definitely DO NOT encourage students to work for free.

What if a GSD professor asks me to work unpaid?

This is a challenging situation. One option would be to thank the professor for the offer AND to mention that you need paid employment to help you with school expenses. Ask if you might be able to work with him or her and utilize your work study funding. If the work is academic in nature (research, writing, etc.) you can definitely use federal work study funds. This may also be an option if you work for a private firm.

How can I find a summer internship?

To find summer internship leads, check out the GSD Virtual Career Fair. This event is held each January to help students connect early with a broad range of summer opportunities.

How much should I expect to earn?

Summer internships are a great way to gain meaningful experience. The hourly rate fluctuates according to the job market. Career Services conducts an annual survey to gather information on hourly wages by program. Check the most current survey to help you determine what to ask for BEFORE you discuss this with employers.

How can I get an independent idea funded?

One of the main funding sources for GSD students is the Community Service Fellowship Program (CSFP). Students submit proposals by early March, and are notified if their proposal was selected by spring break. Check out the CSFP website to read about the program and learn what other GSD students have done with independent projects.

www.gsd.harvard.edu/professional/career_services/students/CSFP.html

Recruiting Policy for Employers

The Fair Labor Standards Act (FLSA), as amended in 2004, generally requires covered employers to pay employees at least the federal minimum wage for all hours worked, and overtime premium pay of time-and-one-half the regular rate of pay (or time-and-one-half leave hours) for all hours worked over 40 in a single workweek.

ACADEMIC SUPPORT SERVICES

The Office of Student Services assists students who may be having trouble keeping up with the academic load of the GSD for various reasons, including difficulty with the English language, emotional distress, or other academic issues. Rest assured that all conversations will remain confidential. If the staff doesn't have the means or expertise to help you with your particular issue, they will be able to direct you to the appropriate support network.

Oral Presentation Tips

www.qsd.harvard.edu/inside/student_services/academic_resources.html

See website above for the Oral Presentation Tips for Reviews at the GSD. It was developed by a consultant a few years ago in conjunction with a presentation on public speaking.

Online Resources at the Loeb Library

The Loeb Library has compiled a list of online resources to help students with research and writing. www.qsd.harvard.edu/loeb_library/research/research_techniques/index.html

Research Consultations

Please contact Sarah Dickinson (sdickinson@qsd.harvard.edu) to set up a consultation to explore your topic.

Language Resource Center (LRC)

The Language Resource Center offers services to GSD students experiencing language difficulties. The LRC welcomes both native and non-native English speakers to work one-on-one with LRC staff in oral and reading comprehension, verbal communication, the writing process, public speaking, and any other language concerns. A sign-up sheet will be available outside Student Services. lrc@qsd.harvard.edu

Academic Support for International Students

The Admissions Office team is the liaison with the Harvard International Office. They process I-20's and are available to answer questions about employment or visa regulations or refer students to appropriate offices. Please refer to the section 'International Students' for more detailed information. If students are having difficulty with spoken or written English, contact the Language Resource Center (*see above*).

Graduate Student Learning Support

Laura Snowdon

617 496 1236

Dean of Students and Coordinator for Students with Disabilities

lsnowdon@gsd.harvard.edu

Sometimes students come to the GSD who have previously been able to compensate for an undiagnosed learning disability. During their studies here, problems may surface that ultimately lead to a diagnosis of a learning disability, and subsequent treatment and counseling. The GSLS can provide neuropsychological assessment and strategic assistance with learning difficulties, and, when appropriate, referral for neurological testing. Learning specialists can also work with students experiencing problems in executive functioning, time management, and other academic issues. All students must first be referred via Laura Snowdon.

Students with Disabilities

Laura Snowdon

617 496 1236

Dean of Students and Coordinator for Students with Disabilities

lsnowdon@gsd.harvard.edu

Students who have physical, learning, or psychological disabilities should contact Laura Snowdon, Dean of Students and the GSD's Disability Coordinator, in the Office of Student Services, Gund 422. Students are encouraged to contact Laura Snowdon as early as possible to allow for any preparation that must take place before the semester begins. Documentation should include a clinical assessment of your disability as well as any recommendations that would be helpful in determining accommodations at the GSD. (In the event that the documentation is not adequate, you will be asked for further documentation or testing.)

With clinical documentation, Laura Snowdon can work with you and with your instructors to identify how the GSD and the university can provide reasonable accommodations, and to advise you of additional resources at the university. If you suspect that a previously undiagnosed disability exists or is developing, you should contact Laura Snowdon. She can refer you to resources at Harvard, such as University Health Services, and/or outside resources for necessary follow-up. It is best to make contact as soon as possible, even if you feel that your studies are not yet being compromised.

Due to a documented disability, students who are unable to take an examination at the scheduled time should contact the disability coordinator (Laura Snowdon) as soon as the need is apparent to discuss make-up examination accommodations and procedures.

Temporary Disability

If a student is injured or recovering from surgery and needs temporary transportation to and from the GSD, he or she should contact Laura Snowdon so that she can begin to make arrangements. As disability coordinator, she is also the GSD's liaison with Harvard's Transportation Office, which oversees the Accessible Van Service. She will, however, require documentation from a physician about the nature of your physical impairment and an estimate of your recovery time before she can arrange transportation for you.

GSD ADVISING

When even the most sophisticated tools do not help, there are still old-fashioned words of wisdom from people at the GSD. Don't be shy: if you're ever stuck, be it in the computer lab and are trying to figure out how to map your network drive, or if you're really lost, just ask someone for help. You'll be surprised at how willing people are to offer assistance.

Academic Advisors

Academic advisors are faculty members assigned to students to advise and assist them in meeting the requirements of their degree programs. Faculty members post weekly office hours when they will be available to meet with students. Advisors can provide a meaningful relationship during your time at the GSD, but you may have to be proactive in initiating the contact. Advisor assignments for new students are posted outside the students' respective program offices during the orientation week. At any point in their studies, students who wish to change advisors should make this request to their program coordinator. If you don't know who your academic advisor is, don't hesitate to ask your program coordinator.

Program Directors

Each program has a director who oversees administrative aspects of the program. Program directors are students' main point of contact for issues such as taking a leave of absence or pursuing concurrent degrees. Often, the program director's signature is required for these and for other circumstances. They are available to discuss any academic concerns a student is having or to resolve academic conflicts.

Personal Advising

The Dean of Students, Laura Snowdon, is available to discuss any concerns or difficulties a student has. Stop by Gund 422 or email Laura at lsnowdon@gsd.harvard.edu to set up an appointment.

Peer Advisors

Started by students and supported and funded by the Office of Student Services, the Peer Advisor program matches returning GSD students with 5-10 incoming students from every program. Everyone will be assigned a Peer Advisor at orientation. In addition, Peer Advisors are there for you all year long. Ask them if you need help—bear in mind these students will be busy with their own work, but are there for the occasional hurdle.

Informal Advising

Additionally, informal advising is practiced all the time at the GSD. Just find out when the faculty member you want to talk to has office hours and sign up. Usually, office hours are posted by the faculty member's door. If not, send him or her an email to set up an appointment.

ALUMNI RELATIONS

Sumner 302

617 495 4315

www.gsd.harvard.edu/inside/dev_alumni

The Office of Development and Alumni Relations is the center of all alumni activities. They maintain alumni records and link the GSD to the rest of the University. The office is responsible for raising funds to support student financial aid as well as other GSD initiatives. The staff coordinates events throughout the country and internationally to offer alumni the opportunity to stay connected and network with other alumni in their area. Development and Alumni Relations also work with the Alumni Council, made up of representative alumni from all programs and throughout the world. Alumni Council meetings offer many occasions for students to interact and network with the alumni who are present.



Peter Walker's Tanner Fountain at the Harvard Science Center / photo by Shelby Elizabeth Doyle

HEALTH AND WELL- BEING

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HEALTH INSURANCE

See huhs.harvard.edu for details concerning health insurance at Harvard University.

The Harvard University Student Health Program (HUSHP) is a group health plan that is only available to Harvard students and their eligible dependents. Student dependents (spouse, same-sex domestic partner, and/or children) are eligible to be added with the enrollment of the student (subscriber).

Massachusetts Insurance Requirement

Massachusetts law requires that students enrolled in an institution of higher learning in Massachusetts participate in a student health insurance program or in a health benefit plan with comparable coverage.

Harvard University Student Health Program

The Harvard University Student Health Program (HUSHP) is a comprehensive health program comprised of two parts, the Student Health Fee and the Student Health Insurance Plan.

Student Health Fee

Required of all students who are more than half time and studying in Massachusetts. This fee covers most services at Harvard University Health Services, including internal medicine, medical/surgical specialty care, mental health/counseling services, physical therapy, radiology, Stillman Infirmary, and 24/7 urgent care.

Student Health Insurance Plan

Provides hospital/specialty care through Blue Cross Blue Shield of Massachusetts and prescription drug coverage through Medco. Coverage includes emergency room visits, hospitalizations, diagnostic lab/radiology services, ambulatory surgery, specialty care outside HUHS (limited), and prescription drug coverage. Benefit limits and cost-sharing may apply; visit huhs.harvard.edu for more details.

Waiving the Student Health Insurance Plan

Students enrolled in a comparable health insurance plan may be eligible to waive the Student Health Insurance Plan. Waivers must be completed by the appropriate deadline or the charges will remain on your term bill. The deadline to waive is August 31, 2011 for the fall term (or full academic year), and by February 28, 2012 for the spring term.

Before waiving, carefully evaluate whether your existing health plan will provide adequate, comprehensive coverage in the Boston area. View the website to review a waiver checklist for guidance. You will be fully responsible for all medical claims and prescription drug costs if you waive the insurance plan.

Harvard University Health Services (HUHS)

Holyoke Center, 75 Mount Auburn Street, Cambridge
huhs.harvard.edu

617 495 5711

Below is a summary of the services available at HUHS. We encourage you to visit huhs.harvard.edu for detailed, up-to-date information, including department locations, phone numbers, and hours of operation; how to make appointments; event listings and announcements; and additional health information and resources. Primary care and some mental health services are also available at each of the three satellite clinics located on the Law School, Business School, and Longwood Medical School campuses.

Holyoke Center Medical Services

Services at Holyoke Center include: *Primary Care. 24-hour Urgent Care. Mental Health. Pediatrics. and Medical/Surgical Subspecialties.*

Urgent Care and Emergency Services

Any student experiencing symptoms of a medical emergency (e.g., chest pain, severe shortness of breath) should call 9-1-1 immediately. After-hours and weekend care for non-routine, urgent medical concerns or symptoms is available through the After Hours Urgent Care Clinic.

After Hours Urgent Care Clinic (AHUCC)

AHUCC is open nights, weekends, and holidays. Whenever possible, students are encouraged to call their primary care team or mental health provider for advice during regular office hours. Holyoke Center, 5th floor, 617 495 5711.

Primary Care Services

HUHS is committed to providing each student with complete, coordinated health care through a working relationship with a primary care team comprised of a primary care physician (PCP), nurse practitioner, registered nurses, and health assistants.

Students are assigned a primary care physician (PCP) and primary care team that will provide any care needed throughout the year. A complete listing of primary care clinicians is available at huhs.harvard.edu. Students may change their PCP at any time for any reason by emailing Member Services (mservices@huhs.harvard.edu) with their selection. Students with chronic medical conditions are advised to establish a relationship with the primary care team early in the academic year. It will be helpful to provide copies of medical records of health care received at other facilities.

Stillman Infirmary

Stillman Infirmary provides short-stay care for medical and mental health problems, and certain post-operative cases. Admission to the Stillman Infirmary is based on clinical indications as determined by a student's primary care team and/or the AHUCC staff.

Required Immunizations

All students are required to comply with the Massachusetts immunization regulations and submit a complete immunization history to Harvard University Health Services prior to registration. *NOTE: Incomplete or overdue forms may delay registration. There is a fee for most immunizations.*

Travel Health: Immunizations and Information

HUHS provides immunizations and related services, including expert counseling and advice for individual travel health needs, on a fee-for-service basis. HUHS recommends scheduling travel health appointments six to eight weeks in advance of travel.

Confidential HIV Testing

HUHS provides confidential HIV testing. For those who would prefer to have anonymous testing, visit the HUHS website or the AIDS Action Committee of Massachusetts website (www.aac.org) for suggested locations.

Patient Advocate

patadvoc@huhs.harvard.edu

617 495 7583

The Patient Advocate is available to assist students with any concerns, questions, or comments. All communications are confidential.

Making an Appointment

Appointments can be made at huhs.harvard.edu or by calling 617 495 5711. Cancellations must be made at least 24 hours in advance of a scheduled appointment, or else you'll incur a fee.

Other Services

Other services available at Holyoke Center include:

Pharmacy

Dental services

Vision care and eye services

Optical shop

Note: Not all of these services are covered by insurance

Confidentiality Statement

The confidentiality of all records and other medical information about patients at HUHS is protected to the full extent of the law. Written authorization from the student is necessary to release record information to any third party except in highly unusual circumstances as required by law, or as indicated in the HUHS Notice of Privacy Practices.

STRESS AND YOUR WELL-BEING

Getting Enough Sleep

People have turned green and fallen into their models during their final review. Let's face it, you need to sleep in order to perform at the GSD. In 2004, German scientists released evidence supporting the notion that creativity and problem solving are directly linked to adequate sleep. Researchers at Harvard Medical School's Sleep Research Center continue to link the complexities of sleep and cognitive functioning. Not to mention that sleep deprivation is a leading trigger for mental health disorders. So plan those 7-8 hours, next to your list of drawing requirements, to ensure that you have the brain capacity to get through your review.

GSD Support Services

Laura Snowdon

617 496 1236

Dean of Students and Coordinator for Students with Disabilities

lsnowdon@gsd.harvard.edu

The student experience at the GSD is intense and rigorous, and at times can be stressful or overwhelming. All GSD students are highly qualified and often come from previous educational experiences where they were top of their classes. It can be difficult to realize that you may not be accomplishing your goals as easily as in the past. Additionally, students for whom English is not their native language may struggle more than they had expected communicating their ideas. Finally, the student experience is often a challenge even when everything is basically fine both emotionally and physically. An unexpected life event such as an illness, a death or other stress can trigger emotional distress and/or set the student back academically.

During these difficult times, it is good to know that there are a number of resources at your fingertips within the GSD—for assistance with the English language, finding the right person to talk with at University Health Services, or just someone to advise you on resolving an emotional difficulty.

If you are encountering problems with your courses and/or studio, your academic advisor and program director are there to talk you through your difficulties and help you work through possible solutions. If you do not feel comfortable approaching them, and you are not sure where to go for advice, Laura Snowdon in the Office of Student Services can help you get started. Laura is the primary resource for GSD students with emotional, medical or disability concerns, difficulty with the English language, as well as any problems or issues within the GSD that students would like to discuss. She monitors students' academic status and progress and is available to discuss any problems that may arise, including grade appeals or sexual harassment complaints. She will refer students to additional sources for assistance as necessary. All conversations will remain confidential. Email or call to set up an appointment.

HARVARD SUPPORT GROUPS

Harvard University Health Services (HUHS) offers a wide range of support groups for students, faculty, and staff. Below is a list of services and groups available. Also, feel free to speak with Laura Snowden about any of these services or groups.

HUHS Mental Health Services

Mental Health Services, Holyoke Center, 4th Floor 617 495 2042
huhs.harvard.edu

Emergencies, nights and weekends 617 495 5711
Harvard University Health Services

HUHS Mental Health Services provides coverage to students 24 hours a day, 365 days a year. Counseling is available for a wide variety of concerns, including: *Bereavement. Transitional issues and adjustment difficulties. Depression, anxiety, or stress. Concerns interfering with work or relationships. Sexual concerns. High-risk behaviors around food, alcohol and/or other substances.*

Treatment options include individual psychotherapy, medication management, group and couples therapy. All visits are confidential and mental health records are held separately from the rest of the medical record, except for information on medications and hospitalizations.

Mental health services are also offered at satellite health clinics on the Harvard Law School, Business School, and Longwood Medical Area campuses.

The Office of Sexual Assault Prevention and Response (OSAPR)

Holyoke Center 731, 75 Mount Auburn Street, Cambridge 617 495 9100
www.fas.harvard.edu/~osapr
osapr@fas.harvard.edu

OSAPR provides confidential, 24-hour information, assistance, and support for those who have experienced sexual assault and related forms of interpersonal violence, including sexual harassment and relationship abuse.

Students may access these services by calling or visiting the office. All communications and services are completely confidential and no information about the victim will be reported to the police unless the victim requests it.

Center for Wellness

Holyoke Center

617 495 9629

www.cw.uhs.harvard.edu

The Center for Wellness (CFW) offers a unique way to cultivate your overall well-being through holistic services, innovative programs, and community outreach. The CFW offers individual treatments, such as acupuncture, massage, Reiki, and shiatsu. Programs include movement/exercise, yoga/Pilates, safety classes, and special workshops and events throughout the year. Discounted rates are available for students.

In Common

www.digita.harvard.edu/~incommon

617 384 TALK

incommon@digita.harvard.edu

In Common is the peer counseling hotline for Harvard's graduate and professional schools. In Common offers support, and acts as a referral service for students who are dealing with a wide range of issues such as loneliness and alienation, uncertainty about careers, academic or financial problems, or difficulties in relationships. No issue is too big or too small.

In Common is staffed by current Harvard graduate and professional school students. The line is open throughout the academic year. Calls are anonymous and confidential: caller ID is not used. Student volunteers are trained and supervised by professionals from Harvard University Health Services (HUHS) and the Bureau of Study Counsel. Volunteers are recruited each fall.

Harvard Chaplains

Memorial Church, Ground Floor, Harvard Yard

617 495 5529

Monday-Friday 9a-5p

www.chaplains.harvard.edu

Harvard Chaplains is the University's interfaith coalition of 35 chaplains, representing 25 of the world's traditions. They offer programs, worship events, and provide confidential counsel to students in the Harvard community. Whether your concern is an issue of spirituality, an ethical question or a personal crisis, Harvard Chaplains are available to students for confidential counseling. Chaplains agree to honor the religious freedom, human dignity, conscience, personal spiritual welfare, and the religious tradition of each person to whom they minister.

University Ombuds Office

617 495 7748

Holyoke Center

www.universityombudsman.harvard.edu

university_ombudsman@harvard.edu

The Ombuds Office provides a neutral, confidential place to discuss informal approaches to resolving workplace or academic problems. Open to all Harvard ID holders, the ombudsman can help suggest different approaches to addressing a situation or resolving a problem.

SUPPORT OUTSIDE OF HARVARD

Listed below are local and national organizations, and websites that might provide support, information and resources. Please note that the information on these websites is for educational purposes only. It is meant to give you a framework for how to deal with your current concerns, and help you decide how to make the best use of the professional services available to you.

Samaritan Suicide Hotline

24-hour hotline

617 247 0220

www.samaritanshope.org/

Befriending hotline for those who are alone, depressed or in crisis.

AIDS / HIV

AIDS Action Committee

617 495 2139

294 Washington Street, 5th floor

Boston, MA 02108

You will not be required to give any identifying information. There is a \$10 fee for anonymous HIV antibody testing, but no student will be turned away due to an inability to pay. The fee will cover both pre- and post-test counseling appointments. Confidential HIV testing is also done by the primary care physicians at HUHS.

Founded in 1983, AIDS Action Committee of Massachusetts is a not-for-profit, community-based health organization whose mission is to stop the HIV/AIDS epidemic by preventing new infections and optimizing the health of those already infected. AIDS Action provides free, confidential services to 2,500 men, women and children living with HIV/AIDS. It also is an advocate for HIV-infected individuals and families and each year its AIDS fundraising walk in early June raises funds for groceries, rental assistance, and medical services. Its website provides a wealth of information on its services, articles, links to other websites, and information on how to remain healthy while HIV-positive.

Depression and Related Affective Disorders

Manic-Depressive & Depressive Association of Boston

www.dbsaboston.org

National Alliance on Mental Illness

www.nami.org

National Institute of Mental Health

www.nimh.nih.gov

Anxiety Disorders Association of America

www.adaa.org

More Mental Health Websites

www.hopkinsmedicine.org/psychiatry

www.mentalhelp.net

www.mentalhealth.com

www.mclean.harvard.edu

Eating Concerns

National Institute of Mental Health	www.nimh.nih.gov/health
National Association of Anorexia Nervosa and Related Disorders	847 831 3438 www.anad.org
Multi-Service Eating Disorder Association	617 558 1881 www.medainc.org

Rape and Sexual Abuse

Experienced Rape Counselor University Health Services	617 495 2042
Sensitive Crime Unit Harvard University Police	617 495 1796
Boston Area Rape Crisis Center	800 841 8371 www.barcc.org
Center for Violence Prevention and Recovery, Beth Israel Hospital	617 667 8141 www.bidmc.harvard.edu/violenceprevention
Office of Sexual Assault Prevention and Response	617 495 9100 731 Holyoke Center www.fas.harvard.edu/~osapr

Substance Abuse

Alcoholics Anonymous	617 426 9444 www.aaboston.org
Al-Anon	508 366 0556 www.ma-al-anon-alateen.org
National Institute on Alcoholism	www.niaaa.nih.gov
Sober Living Help	www.soberrecovery.com 781 551 6677
Cocaine Anonymous	www.ca.org/ (Worldwide site) www.caofma.org/ (Massachusetts site)
Cocaine Anonymous Self Test	www.ca.org/literature/selftest.htm



Snowy Harvard Yard / photo: Shelby Elizabeth Doyle

ACADEMIC INFORMA- TION

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REGISTRATION

Registration is held online each fall and lasts through the first day of classes. Additionally, new students receive the GSD Student Handbook, as well as their program description and should refer to it to determine the requirements for completion of a particular program of study. Presentations of studio options projects and selected courses are also held during this period. In addition, information on resources at the GSD and throughout Harvard is distributed. A student who registers after the official registration date listed in the Academic Calendar will be assessed a late fee of \$30, plus another \$30 for each additional week the registration is late, up to a maximum fine of \$150. Adding and dropping of courses begins on the first day of classes and lasts for one week, free of charge.

Course Enrollment

At the beginning of each term, students must enroll in courses online. A student who enrolls after the due date will be assessed a late fee of \$30, plus another \$30 for each additional week the study card is late, up to a maximum fine of \$150. As enrollment in courses is an official part of registration, failure to enroll online by the designated deadline in a given term may result in cancellation of registration for that term. A student must receive the program director's approval on an add/drop petition if total credits exceed 20. Students enrolling in more than 24 credits will be charged additional tuition. MDesS students enrolling in more than 20 credits will be charged additional tuition.

Petition to Add/Drop Courses

To make changes in enrollment by dropping a course after enrolling online, a student simply drops the course online. With the exception of limited enrollment courses, courses may be added online until the add/drop deadline for full term courses. After that date they can only be added via a Petition to Add/Drop Courses. Likewise, all limited enrollment courses must be added with a Petition to Add/Drop Courses. The course instructor must sign the petition to add a course. This procedure applies to courses taken at the GSD, in other faculties at Harvard, and at other schools by cross-registration. A \$15 fee is charged for each petition filed, regardless of the number of changes on the petition, beginning one week after online enrollment is due. A \$30 fee is charged for each course petition filed after the add/drop deadline specified in the Academic Calendar for that semester (\$15 fee plus \$15 late fee).

A grade of WD (withdrawal) will be automatically entered on the student's transcript for courses dropped after the add/drop deadline. The last day to withdraw from a course is the last day of classes for that module or semester. Students are responsible for all course work after that date. Petitions to drop a studio are seldom approved and must be discussed with and approved by the program director and the Dean of Students.

Studio Option Lottery

Enrollment in a studio option is determined by means of a lottery. This universal lottery allows eligible students to indicate their preferences for studio options offered by their department only, or from those offered by all three departments. Students in the MArch I, MLA I, and MUP programs may take a maximum of 16 credit units, and students in the post-professional programs may take a maximum of 24 credit units of studio options. (See degree requirements online for each program for limits on studio options that can be taken outside the department.) By participating in the lottery, a student makes a commitment to enroll and remain in the assigned studio. Those students who split will not have the use of a desk during the semester in which they do not enroll in studio or thesis.

Harvard Summer School

A student may obtain credit toward the fulfillment of a degree at the GSD for a maximum of two courses (8 units) completed in the Harvard Summer School. In order to be considered, the course(s) must be enrolled in after matriculation at the GSD. The student must receive a passing grade in each course taken in order to receive this credit. Courses taken through the summer school meet degree requirements but not residency requirements.

Auditing Courses

GSD students who wish to audit a course should make arrangements directly with the instructor. Audited courses are not recorded on transcripts. Students outside of the GSD who wish to audit a GSD course should speak with the registrar and acquire a petition to audit.

CROSS-REGISTRATION

University-wide course and cross-registration information can be found at coursecatalog.harvard.edu or at the registrar's page on the GSD's website, which is www.gsd.harvard.edu/inside/registrar/cross_req/index.html. Students may enroll for credit or may audit courses offered by schools included in the GSD's cross-registration agreement as listed below. Students must file cross-registration petitions at the school into which they are cross-registering.

Limitations

The following limitations govern courses taken for credit by cross-registration:

Total Term Load

They may not represent more than one half of the student's total program in any one term, and MDesS students cannot exceed the equivalent of 12 units via cross-registration without the permission of his/her advisor.

Availability of Subject

They should normally be subjects not available at the GSD. If there is apparent duplication of the subject in the two schools, there must be a valid reason for enrolling outside the GSD.

Relevance to GSD Degree Program

They must not constitute, in their ensemble, a program that is separate from, or in addition to, the program for which the student is formally registered in the GSD.

Cross-Registration Petition

A student wishing to cross-register should obtain a petition from the university-wide cross-registration website, coursecatalog.harvard.edu. The petition must be completed by the student, signed by the course instructor and delivered by the student to the registrar's office of the host school. Students failing to file cross-registration petitions will not be considered enrolled elsewhere and will not receive credit in the GSD. Students must abide by the regulations of the school into which they are cross-registered and will be assigned grades under the system of that school; however, the GSD will not accept cross-registered courses taken pass/fail or SAT/UNSAT.

Add/Drop Deadlines

Changes in enrollment in cross-registered courses must occur by the add/drop deadline of the Graduate School of Design or of the other school, whichever date is *earlier*. A student must file an add/drop petition as required for GSD courses (described above).

Grades

If a GSD student receives a grade considered passing at the school at which the course is listed, he or she may receive credit for cross-registered courses offered by Harvard College: Harvard's Graduate School of Arts and Sciences, Business School, Kennedy School of Government, Graduate School of Education, School of Public Health, Law School, or Divinity School; the Fletcher School of Law and Diplomacy at Tufts University; the Episcopal Divinity School; and MIT. Students may obtain credit toward the fulfillment of a degree at the GSD for a maximum of two undergraduate-level courses, or the equivalent of eight GSD units, at Harvard College or Harvard Summer School. MDesS Students may obtain a maximum of three undergraduate-level courses or twelve GSD units at the College.

ENROLLMENT STATUS

Students are required to be enrolled on a full-time basis during the number of terms of residence required by their respective degree programs. A student must be enrolled and in good standing to be eligible to submit a thesis.

Part-time Enrollment

Permission for part-time enrollment will be granted only as a special exception. A written, detailed plan for completing remaining degree requirements must be approved by the program director and filed with the Office of Student Services. Architecture, MDesS, and MLA II students may be able to choose the split-semester option, which extends their final term to the full academic year for part-time study. Students must take a minimum of eight units in order to remain eligible for financial aid.

Splitting

MArch I, MArch II, MLA II, and MDesS students may choose to split their final, fall semester into two semesters. Students who choose this option will formally enroll in thesis or their final studio option during the spring semester, and take only lecture and seminar courses in the fall. Students who split will be charged half tuition for both semesters (see exception below), with the understanding that they will enroll in no more than 24 units for both semesters combined, or 20 units for MDesS students. Occasionally, non-thesis students are given the option of enrolling in their final studio option during the fall semester rather than in the spring. Those students who split do not have the use of a desk during the semester in which they do not enroll in studio or thesis.

Splitting for International Students

International students who are enrolling in thesis pay for one extra course (4 units) if they decide to split. The reason for this is that in order for international students to maintain their student visas, they must be considered full-time students during the fall of their split-semester year (enrolled in 16 units or 4 courses). Sixteen units in the fall and 12 (thesis) in the spring are 28 units, which is 4 more than full tuition. (That results in 1/4 more tuition in the fall.) MArch II and MLA II's who are taking an option studio simply enroll in 16 units in the fall and studio (8 units) in the spring.

Leave of Absence Policies

The following policies govern students while on a leave of absence (LOA):

ID Cards

Students do not have active ID cards while they are on leave of absence.

Health Insurance

Students may have the option to continue their Student Health Insurance Plan coverage while on a leave of absence. Please visit the Leave of Absence Policy at www.huhs.harvard.edu/Insurance/Students.aspx for more information.

Library Privileges

Loeb Library: Students may purchase Loeb Design Library privileges at the rate of \$50 for 4 months or \$125 for a year. A 'Frances Loeb Library Special Borrower' picture ID will be issued. This card is non-transferable and valid only at the Loeb Library. The following conditions must be met: the student is returning to graduate from the GSD; and the student has research or course work to complete while on LOA. To obtain an ID from the Loeb Library, a student should present a copy of his or her Leave of Absence Petition to a Loeb Library Circulation Desk staff member. An ID can be created in 24 hours. For further questions, contact a staff person at the Circulation Desk 617 495 9163 or libcirc@gsd.harvard.edu.

Widener Library: Students should go to the Privileges desk, room 195, an immediate left after entering the main entrance to the library, with some form of identification, such as a driver's license. If a student has been registered for at least one semester, he or she will qualify as an 'alumni' and is granted privileges which are: 6 days of stacks free and 6 borrowed books free of charge: then \$50/4 months or \$125/year.

Harvard Housing

Students cannot maintain leases on Harvard housing while on leave, or reside in Harvard dormitories.

Access to GSD Computing Resources

Students' GSD email accounts remain active for the duration of their leaves of absence; however, GSD computer accounts are disabled. Students on leave do not have any access to GSD computing facilities or technical support. Special circumstances, such as required computer course work to be completed, must be arranged with the Dean of Students and Director of Computer Resources.

Leaves of Absence for Masters Degree Students

A student may take a voluntary leave of absence for not more than one year, or two academic terms. Occasionally, a program director might approve the extension of a leave of absence beyond one academic year, usually for medical reasons. Leaves beyond four consecutive semesters are not allowed.

Students with health or medical issues requiring a leave of absence should meet with the Dean of Students who will help the student make appropriate arrangements for the duration of the leave as well as plans to return, and will ensure compliance with all academic rules.

The deadline for application for a leave of absence is listed in the Academic Calendar, and there is no guarantee that applications received after that date will be approved. A \$15 fee will be charged for petitions received after the deadline. Students should fill out a leave of absence petition, available from the Office of Student Services, which must be approved by the program director. International student's petitions must also be approved by the Harvard International Office.

The deadline for taking a LOA without becoming liable for payment of tuition is listed in the Academic Calendar. After that date, tuition is charged to the end of the tuition period in which a student takes a LOA. If students wish to continue their health insurance while on leave, they should meet with the registrar. A student who fails to register for the next regular academic term following a leave of absence will be withdrawn automatically as of the end of the term in which the leave of absence expired. A student who has been withdrawn may reapply for admission. Financial aid recipients must reapply for financial aid, generally by mid-February of the previous academic year, for the term in which they return. Architecture, MDesS, and MLA II students who plan on taking a leave of absence should speak with the registrar about the ramifications this will have on their ability to split during their final term.

Leaves of Absence for International Students

International students who plan on taking a leave of absence must speak with the GSD's liaison at the Harvard International Office (HIO) about the immigration-related ramifications of taking a leave. International students who take leaves of absence must be aware of how this might affect their visa status and optional practical training eligibility. The HIO is located on the eighth floor of Holyoke Center in Harvard Square, and may be reached at 617 495 2789 to make an appointment.

Leaves of Absence for Doctoral Students

A Doctor of Design student may apply to the Advanced Studies Programs (ASP) committee for a leave of absence of up to two semesters after the first year of study, provided the general examination has been passed. Such a leave of absence may be used for collection of data, related field research, or for personal reasons. Students with health or medical issues requiring a leave of absence should meet with the Dean of Students, who will help the student make appropriate arrangements for the duration of the leave as well as plans to return, and will ensure compliance with all academic rules. Regardless of a leave of absence, the residency requirement for the Doctor of Design program is four academic semesters, and the maximum length of time for the program is three academic years since matriculation. A student must be registered for the semester in which the thesis is submitted for approval.

Involuntary Leaves of Absence

A student may take a voluntary leave of absence or may be placed on involuntary leave of absence. A student who has been placed on an involuntary leave of absence is subject to the same rules regarding financial aid and financial obligations that apply to a student who has taken a voluntary leave of absence.

An involuntary leave of absence is not a disciplinary sanction. Transcripts and other external reports do not distinguish between voluntary and involuntary leaves of absence. However, an incident that gives rise to a leave of absence, whether voluntary or involuntary, may subsequently be the basis for disciplinary action. A student who prefers to take a voluntary leave of absence rather than to be placed on involuntary leave is ordinarily allowed to do so.

An involuntary leave of absence may be required for the following reasons:

Health Condition

(a) The student poses a direct threat to the health or safety of the student or others, or has seriously disrupted others in the student's residential community or academic environment; and (b) either the student's threatening, self-destructive, or disruptive behavior is determined to be the result of a medical condition or the student has refused to cooperate with efforts by the University Health Services to determine the cause of the behavior. The decision to place a student on a involuntary leave of absence for health related reasons is arrived at by an individualized assessment of all of the pertinent factors, such as the nature of the student's conduct, consultation with Harvard University Health Services (which may consider information from the student's current or former health care providers, if made available by the student), and the absence of feasible alternatives (for example, where the extent of accommodation needed would fundamentally change the academic program or unduly burden the resources or staffing capabilities of the GSD, or where the care or monitoring required would exceed the standard of care that a university health services can be expected to provide).

Alleged Criminal Behavior

The student has been arrested on allegations of serious criminal behavior or has been charged with such behavior by law enforcement authorities.

Risk to the Community

The student has been charged with a violation of a disciplinary rule of the GSD, and his or her presence on campus poses a significant risk to the safety of others or to the educational environment of the community.

Indebtedness

The student's term bill is unpaid and the student has not made arrangements acceptable to the GSD to address the issue.

Immunizations

Failure to provide medical documentation of required immunizations.

Unfulfilled Academic Requirement(s)

The student has not met an academic requirement and has not taken steps acceptable to the GSD to meet the requirement.

Failure to Register

The student has not registered as required at the beginning of each term.

Being Placed on Involuntary Leave of Absence

The decision to place a student on involuntary leave is made by the Dean of Students in consultation with the executive dean and the student's program director. With respect to a leave of absence for medical reasons, the Dean of Students may ask for permission to consult with a student's health care providers. In the case of an involuntary leave of absence for medical reasons, the Dean of Students will consult with an appropriate person at Harvard University Health Services.

A student is notified in writing that he or she has been placed on involuntary leave. The student may petition the Dean of Students for reconsideration and may appeal a final decision to the dean of the GSD. During a leave of absence, the student may not participate in student activities. If so instructed by the Dean of Students, the student must remain away from the University campus.

A student who has been placed on involuntary leave of absence may petition the Dean of Students to return to the GSD. He or she must demonstrate that the circumstances that led to the leave have been satisfactorily addressed. If a student has been required to withdraw while on leave of absence, the conditions for return after a required withdrawal must be satisfied. Any disciplinary matter also must be resolved. If a leave was for medical reasons, whether voluntary or involuntary, the Dean of Students will communicate with the student about the process for readmission and this process will usually require consultation with the Harvard University Health Services as to a professional opinion about the student's readiness to return. Other evidence of the student's readiness to return may include a substantial period of employment and a letter of recommendation from the employer or employment supervisor.

The decision whether to terminate an involuntary leave of absence and allow a student to return is made by the Dean of Students, in consultation with the executive dean and the student's program director.

Graduation and Commencement Participation

The Office of Student Services maintains the following policy in regard to participation in commencement ceremonies. Students who have not fulfilled their degree requirements, or have an outstanding financial obligation to the University, will not be allowed to walk in commencement exercises. For students who have fulfilled their degree requirements but have outstanding obligations to the university, the following policies apply.

Students whose outstanding term bills are less than \$500, or who have outstanding library books or fines, telephone bills, or thesis books for UPD students, will have their diplomas withheld by the GSD. Their names will be listed in the Harvard commencement program, and they will be eligible to participate in commencement ceremonies, but they will receive an empty envelope. The GSD will release diplomas to these students upon notification from the Student Billing Office that their term bills are cleared, or upon notification from other offices.

Students with outstanding term bills greater than \$500 will have their degrees withheld by the university, and they will not be eligible to participate in commencement ceremonies. The Harvard Corporation will vote to grant the degree retroactively upon notification from the Student Billing Office that the student's term bill is cleared. The GSD will release the student's diploma after the degree has been voted. Student transcripts will not be sent to a third party. A student can request an unofficial transcript which will indicate that the 'degree is withheld due to financial obligation.'

Withdrawal

A student who wishes to withdraw from the GSD is required to discuss the matter with his or her assigned faculty advisor or program director and the registrar or the Dean of Students. A letter indicating reasons for withdrawal should then be filed with the registrar.

The deadline for withdrawing without becoming liable for payment of tuition is listed in the Academic Calendar and on the registrar's website. After that date, tuition is charged to the end of the tuition period in which a student withdraws. A student who fails to register by the deadline for late registration in a given term will be withdrawn automatically as of that date, unless a leave of absence has been approved. Students who withdraw must reapply for admission.

ID CARDS

All students receive a photo identification card. Temporary identification cards are distributed at registration for new students if they have not previously uploaded an image. New students will be notified to pick up their photo ID cards in the registrar's office, Gund 422. Temporary cards must be surrendered at that time. Digital images will be used on all subsequent ID cards issued. ID cards are not transferable: a student may not allow any other person to use his or her university ID for any purpose. ID cards are the property of Harvard University and are intended for university purposes only. Every student is responsible for his or her ID card and the circumstances of its misuse. A student who alters or falsifies his or her university identification card or produces or distributes false ID's of any kind is subject to disciplinary action.

Lost ID Cards

Lost cards should be reported immediately to the ID Card Office. If students lose their ID's they should order a replacement card at the Identification, Data and PIN Services office, Ninth floor, Holyoke Center (www.huid.harvard.edu). There is a replacement fee of \$20 for the first 2 replacements. Students are charged \$40 for each replacement after that. If the ID is stolen and the student files a report before or after getting the new ID, the student will be credited the \$20 charge or not charged at all if the student brings the actual police report. Students must give up ID cards upon request to any properly identified officer of the university. Surrendered cards will be transmitted immediately to ID Card Services.

What does it mean when the last digit on my ID card changes?

The last digit changes each time you request a replacement card. (Note: This may interfere with your access to Gund Hall. Check with Building Services if you have any issue entering the building after-hours receiving your new card.)

What if the graduation date on my card is wrong?

Contact the Registrar's Office (496-1237) to confirm your correct graduation date. The Registrar's Office will notify Student Receivables and the ID Office of any corrections. A new card will be prepared for you within 2 business days and can be picked up at 953 Holyoke Center.

What happens to my card when I take a leave of absence?

Students on leave do not have an active ID card and access to the building is disabled.

How can I access the Loeb Design Library when on leave?

You can use Loeb Library's resources on site for no fee (does not include borrowing privileges) while you are on leave by getting an access card at the circulation desk. If you will be returning to graduate from the GSD and you have research or course work to complete while on leave that requires you to borrow library materials, you may purchase Loeb library privileges at the alumni rate of \$50 for 4 months or \$125 for a year. A 'Frances Loeb Library Special Borrower' picture ID will be issued. This card is non-transferable and valid only at the Loeb library. If you need to access Widener Library, you should go to the Privileges desk, room 195. If you have been registered for at least one semester, you qualify for Alumni Privileges: 6 days of access to the stacks and 6 borrowed books for free, after that \$25/3 months or \$100/year.

STUDENT RECORDS

A permanent file is created for each student upon matriculation to the GSD. This file usually contains the student's application, registration forms, study cards, transcript, and copies of all correspondence to the student. Access to this file is governed by the Family Educational Rights and Privacy Act of 1974 (FERPA), also known as the Buckley Amendment (see below). When a student graduates, his or her file is transferred to the Harvard University Archives for permanent storage. All contents of the file are the property of the GSD and will not be returned or forwarded to another party.

Students' Rights to Access to Student Records Under Federal Law

The Buckley Amendment has two central purposes: (1) Assuring students access to their education records, and (2) restricting disclosure of personally identifiable information from those records to third parties without the student's permission. A complete copy of the act is on file in the Office of Student Services and is available for student review. Outlined below is a summary of the major components of the act and their enforcement at the GSD.

In compliance with the Buckley Amendment, the GSD permits students to review their education records upon request. Materials and records that are exempted from the act's general rule of open access and, therefore, will not be made available are as follows:

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- a. Financial records and statements of parents, or any information contained therein.
 - b. Confidential letters and statements of recommendation placed in the educational records of students before January 1, 1975. These letters and statements must have been solicited with a written assurance of confidentiality or sent and retained with a documented understanding of confidentiality. Such letters or statements must be used for the purpose for which they were intended.
 - c. Confidential letters and statements of recommendation placed in students' education records after January 1, 1975, for admission to an educational institution.
-

Official student records are located in the Office of Student Services. A student desiring access to his or her education records should make an appointment with the registrar. A student who has petitioned to and been granted a review of his or her education record and believes that its content is misleading or inaccurate may request to have this record amended. If upon review by the Office of Student Services the request is denied, the student is entitled to a hearing. The student may also add correspondence to the file addressing perceived inaccuracies or misleading information.

Disclosing Material to Third Parties

The GSD will not disclose personally identifiable information from a student's education record to third parties without the student's written permission. Written consent must be signed and dated and include the following:

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- a. Specification of the records or information to be disclosed.
 - b. The purpose or purposes of the disclosure.
 - c. The party or class of parties to whom the disclosure may be made.
-

When disclosure is made, the GSD must, upon request by the student, provide to the student a copy of the record that is disclosed, assuming there has been no waiver of the right to inspect. Exceptions to the disclosure policy mentioned above are as follows:

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- a. Directory information (student's name, local address, local phone, degree program, dates of attendance, date of graduation, email address, previous degrees) and institution(s), class enrollment as linked to class lists) unless the student requests otherwise in writing.
 - b. School officials of the GSD and the university who have a legitimate educational interest in or 'need to know' the contents of a student's record. 'School officials' include faculty, administrators, clerical, professional employees, and agents of the university such as independent contractors performing functions on behalf of the GSD or the university. The determination of whether an official has a legitimate educational interest will focus on whether disclosure of the information is appropriate for the effective functioning of the person's office, his/her position, or the university.
 - c. Government agencies entitled to access by law.
 - d. Parents or guardians of a student in the case that he/she is financially dependent as defined by federal income tax laws.
 - e. In response to a lawfully issued subpoena and after attempting to notify the student.
 - f. When necessary to determine eligibility for financial aid or to enforce the terms and conditions under which the financial aid is received.
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Any student who believes that his or her rights under the Buckley Amendment have been violated by the GSD or the university may file a complaint with the Family Policy Compliance Office:

U.S. Department of Education
400 Maryland Avenue, SW
Washington, D.C. 20202-5920
202 260 3887

For additional information about any of the subjects covered above, contact the Registrar, Office of Student Services, Gund 422.

Student consumer information is available to all students and can be found in the GSD Financial Aid Handbook or on the Financial Aid website at www.qsd.harvard.edu/admissions/financial_aid/handbook.html.

Transcripts

Student transcripts are maintained permanently in the GSD Office of Student Services. An official copy of a GSD transcript will be released on written request by the student; it will normally be prepared within three working days of the request. Official transcripts will not be provided for graduates who have not resolved all term bill debts. Transcripts may be obtained in person or mailed to a designated address. The Office of Student Services may issue copies of GSD transcripts only; requests for copies of transcripts from another institution must be made to that institution

GRADING SYSTEM

A single grading system is used in all courses at the GSD. The grade of 'Pass' is the standard mark for recognizing satisfactory work. 'Distinction' and 'High Pass' are reserved for work of clearly exceptional merit. 'Low Pass' indicates a performance that, although deficient in some respects, meets minimal course standards. 'Satisfactory' is used to indicate that the doctoral thesis is in progress. 'Withdrawal' is assigned for courses dropped after the add/drop deadline. 'Fail' is reserved for work that is unsatisfactory, and a student receives no credit for that course. 'Incomplete' indicates incomplete course work.

Overview

Receipt of an excessive number of incompletes, low passes, or failures may result in action under the policy on Satisfactory Progress and Termination (see below). The GSD does not use a grade-point average or rank-in-class system. Non-GSD students who cross-register into a GSD course are evaluated on the same grading system as are GSD students, with the exception of PhD students who may submit a Request for Letter Grade Form available in the Office of Student Services.

Grade Changes and Appeals

Evaluation of a student's performance in each course is the responsibility of the instructor of record for that course. Normally, the instructor's decision is final. For grades other than 'Incomplete' grade changes can be made by the instructor of record and with the approval of the department chair only for the purpose of correcting an error made in calculating the grade. Very exceptionally, grade changes can be made for compelling reasons over which the student has no control, such as a medical emergency. Whether or not a student decides to invoke the formal appeal process, a student always has the right to request in writing, informally, an explanation of an assigned grade by the instructor. A copy must be sent to the Dean of Students. Instructors are required to respond.

However, a student who feels that a grade is unfair due to negligence or discrimination on the part of the instructor has the right to appeal formally. This appeal must be filed within the first 30 days of the academic term immediately following the term for which the grade was given or within 30 days of the date grades are distributed by the registrar, whichever is later. If, after receiving the instructor's response, the student still believes that a grade has been assigned unfairly, the student should discuss the matter with the Dean of Students. If the student decides to pursue the appeal, he or she must submit a written petition to the dean of the Faculty of Design, stating the reasons for appeal of the grade. This petition must be filed within the first 60 days of the academic term immediately following the term for which the grade was given or within 60 days of the date grades are distributed by the registrar, whichever is later.

If the dean believes the petition demonstrates evidence of negligence or discriminatory behavior, an advisory committee will be formed to review the appeal and make recommendations to the dean. The dean's decision concerning the appeal of a grade is final. If a student appeals a grade assigned in his or her last term at the school, the appeal process may take place after his or her graduation. No grade may be changed after graduation for any reason other than as the result of a formal appeal as described above. Additional information on procedures related to grade appeals is available from the Dean of Students.

Incomplete Work

The option of receiving an incomplete grade (INC) is not automatic. The student must request permission from the instructor, meet with the Dean of Students and file with the Office of Student Services a Petition for Incomplete Grade. The petition must be submitted prior to the last class meeting for that course. Students missing a final examination or submission of a final project cannot receive an INC unless the absence was owing to illness, as verified by University Health Services or a physician, or for another major justifiable excuse.

Permission for an INC in studio courses will normally be granted only for medical reasons and by the program director.

The normal deadline for removal of an INC is the last day of the examination period of the corresponding term of the next academic year, unless an earlier deadline is specified by the instructor. Occasional extensions to this deadline are granted upon petition to the program director. This deadline is not automatically extended for students who withdraw from the GSD after receiving an INC, but is extended for those who take an approved leave of absence. Such an extension will be for the length of the leave of absence.

An INC that has not been completed by the deadline will count toward deficiency units (see below). No grade may be changed on a record after a student has graduated, unless as the result of a formal appeal, and an INC on the record at the time of graduation becomes a part of the student's permanent record.

Incomplete or Unsatisfactory Thesis

A student whose thesis is not accepted must extend work by registering for additional terms. A maximum of one additional term will be granted for completion of a master's thesis. A student who has to repeat the thesis because of failure may also be required to repeat the thesis preparation period, in which case it would be necessary to register for two additional terms. Doctor of Design students will be allowed to register for additional terms for thesis completion only with advisor and ASP committee approval.

Satisfactory Academic Progress and Termination

The following conditions must be met in order for students to be considered as making satisfactory progress:

- a. continuous full-time enrollment (except for approved part-time status and leaves of absence)
- b. completion of the degree requirements of their program within two terms beyond the prescribed number of terms for that program (plus extensions due to approved part-time status and leaves of absence)
- c. achievement of a satisfactory grade record. A grade record is considered to be satisfactory until deficiency units are accumulated to the extent that the student has reached the dismissal threshold.

Deficiency Units

Deficiency Units accumulate when a student receives a grade of Low Pass (LP), Fail (F) or Incomplete (INC). A Low Pass is worth half the Deficiency Units of a Fail or Incomplete. The threshold for Deficiency Units increases with the number of semesters a student has completed. Semesters are counted as completed in accordance with the specific requirements for award of degree for each program. Warning and Dismissal Thresholds are illustrated

Deficiency units are calculated as follows

Semester Completed	Warning Threshold (deficiency units)	Dismissal Threshold (deficiency units)
1 or 2	4	8
3 or 4	6	12
5+	8	16

DEGREE REQUIREMENTS

Students should refer to the program description, available online, in effect at the date of matriculation to determine the requirements for completion of a particular program of study. When changes in degree requirements occur, students may elect to complete their programs of study under the newer degree requirements. Although staff members in the student services and degree program offices will assist students in completing degree checks, it is each student's responsibility to determine that all of his or her degree requirements have been met.

Transfer Credit

The GSD does not accept transfer credits toward degree programs.

Concurrent Degrees

Students may pursue concurrently two degrees offered by the Graduate School of Design, thereby reducing the total amount of time necessary to obtain both degrees if they were pursued separately. The following procedures apply whether the student is seeking admission to the GSD for the first time or is currently enrolled in a degree program. In order to pursue concurrent degrees, a student must be admitted into each degree program independently. Admission to or enrollment in one program does not guarantee acceptance by another.

Applying after Enrollment

Currently enrolled students seeking admission to a second degree program must follow the same procedures and apply by the same deadline as new applicants. Students newly admitted to both programs must, upon admission, contact the registrar to discuss their plan of study. No student may enroll concurrently in two degree programs without a plan of study approved by both program directors, with the exception of a concurrent MUP degree. Please contact the UPD Department for specific information regarding a concurrent MUP degree.

Residency and Requirements

The minimum full-time residency for obtaining concurrent degrees is one academic year more than the residency requirement of the longer of the two programs. The procedures for MDes and MArch II concurrent degrees are the same as for other programs, with the exception that the final term need only include eight units as long as the student has completed 20 units in each of the preceding terms. Students seeking concurrent degrees must complete the requirements of both programs before either degree is conferred. Degrees are not conferred separately. There are no DDes concurrent degrees. Persons interested in concurrent degrees should contact the Admissions Office.

Switching Degree Programs

Admission into one degree program at the GSD does not guarantee the ability to be admitted into another GSD degree program. Students seeking to switch to a different program must submit to the Office of Student Services a new application for the other program, including a new application form; a new filing fee; a letter specifically outlining the reasons for applying to the new program; a new portfolio, including, if possible, work done at the GSD; a GSD transcript; and at least one new letter of recommendation, preferably from a faculty member familiar with the student's work at the GSD. The application will be considered concurrently with the review of other candidates for the following academic year, although in special circumstances a midyear change may be considered. Credit for work completed in previous GSD degree programs will not be accepted toward the new program.

Joint Degrees with Other Harvard Graduate Schools

Students may be able simultaneously to pursue degrees offered by the Graduate School of Design and another Harvard University graduate school, thereby reducing the total amount of time necessary to obtain both degrees if they were pursued separately. To pursue two degrees simultaneously, students must be admitted into each school independently pursuant to that school's own admissions criteria. The minimum full-time residency and curricular requirements at the GSD for students seeking joint degree status depend upon the degree program to which the student seeks admission at the Graduate School of Design.

Currently, the GSD offers a formal Master in Urban Planning/Juris Doctorate joint degree program with the Harvard Law School. This program allows students seeking both degrees simultaneously to receive them in four, rather than five years. Students will be considered in residence at both schools simultaneously during the duration of their studies. For more information about the MUP/JD joint degree, please contact the Master in Urban Planning Program Director or the Registrar. The GSD also offers a formal Master in Urban Planning/Master in Public Policy joint degree program with the Harvard Kennedy School. This program allows students seeking both degrees simultaneously to receive them in three rather than four years. Students will be considered in residence at both schools simultaneously during the duration of their studies.

Students may not obtain joint degree status at the GSD by seeking degrees at graduate schools other than those at Harvard University.

Exchange Programs

The exchange program at ETH (Federal Institute of Technology) in Zürich is available for a limited number of students enrolled in the professional Master in Architecture degree program and the doctoral programs (PhD and DDes). Each year a few third-year students are selected to participate by a faculty committee in the Department of Architecture. Doctoral students must make arrangements through the Advanced Studies Programs. Opportunities also exist for doctoral students to conduct research at the Canadian Center for Architecture (CCA).

Waiving Required Courses

Students who have satisfactorily completed courses that are equivalent to, or more advanced than, those required for completion of the degree program may request a waiver of such course(s) on the Petition for Non-Studio Course Waiver available from the Office of Student Services. The petition must be approved by the faculty member assigned by the department to review equivalency for the particular course in question. Each course must be approved separately. A course taken previously may be used to waive only one course at the GSD. Students must be prepared to present evidence of course work taken previously, such as catalogue descriptions, course syllabi, transcripts, assignments, papers, and exams. The completed petition must be filed with the Office of Student Services at the beginning of the term in which that course is normally required. The deadline is the same as that for study cards.

AP Waiver Process

MArch I students who enter with advanced standing are not normally required to take any of the required courses from the first two terms of the program. Students will be informed of those first-year courses that they are still required to take. However, if there are any courses in which you were waived but you feel your background is not sufficient or that you think would be useful to you in the course of your studies, you may enroll in that course(s) in the fall or spring (except for first-year core studios). If you elect to take a first-year course (regardless of when you actually take it), you would need to inform the Registrar and the Architecture Department in order for it to count toward your degree, but no other approval process would be needed. Taking a course from the first-year curriculum would not extend your degree program, though it would take the place of an elective.

MLA students with advanced standing should refer to the course of study outlined in the Degree Programs section. A faculty review upon admission determines the requirements for each student. However, students may apply for a waiver of a required course after registration.

For students in all other degree programs, elective courses of equivalent unit value must be substituted for each course waived. Student transcripts will indicate that a required course has been waived, with no grade assigned.

Substitution for Required Courses

Students may petition to take another course instead of a required course when they can demonstrate that the timing of the required course is detrimental to their program of study or when they are capable of taking more advanced work than the required course. The Petition for Substitution of a Required Non-Studio Course is available in the Office of Student Services. It must be approved by the program director and one of the instructors normally offering the required course. The completed course substitution form must be filed with the Office of Student Services at the beginning of the term in which that course is normally required. The deadline is the same as that for study cards. Course Descriptions are available on the GSD website: www.gsd.harvard.edu/courses.

ATTENDANCE

All students are expected to attend classes regularly. Absence for whatever reason, including participation in a site visit or other school related activity, does not relieve a student from responsibility for any part of the work covered in the class during the period of absence. If a student will be absent for medical reasons, the student should contact the program office and ask the staff to contact his or her professors and/or the dean for students.

Storm and Emergency Conditions

In the event of inclement weather conditions or other types of emergencies, students and faculty should check these sites for information regarding the status of class meetings.

Harvard's homepage: www.harvard.edu

The GSD Hotline: 617 495 1039

GSD's homepage: www.gsd.harvard.edu

Harvard's 'special conditions' line: 617 496 NEWS

Unless there is an emergency posting on one of those sites, or you've received an email stating an emergency, students should assume that classes will be held. If instructors are not able to get to Gund Hall, they will try to email their students and/or contact program offices or TA's. Every effort is made to keep Gund Hall open. The library, computer resources, woodshop and staff offices may be closed, while the studio trays remain open. On rare occasions, such as a state of emergency declared by the governor, or a University-wide emergency declared by the president or provost, it is likely that University buildings would be closed, including Gund Hall.

Exam Schedules

Students are required to take examinations as scheduled. Absence from examinations is permissible only in extraordinary circumstances, and the reason must be verified. If authorized by the instructor to do so, the department administrator will make arrangements for the makeup.

Absences for Religious Holidays

A student who is absent from a review or examination as a consequence of his or her religious belief 'shall be provided with an opportunity to make up such examination...' (Massachusetts General Laws, Chapter 151C, Sec. 2B). It is the responsibility of the student to inform instructors of conflicts caused by religious holidays. If conflicts are unavoidable, students who will miss a review or examination for religious reasons shall be offered an opportunity to make up the work, without penalty, unless it can be demonstrated that such a makeup opportunity would constitute an 'unreasonable burden' on the faculty. Students must request this accommodation during the first week of classes, or whenever the dates of exams or reviews are announced.

Voter Registration Forms

Voting is not an excused absence. The polls open early and close late, therefore voting can be scheduled around classes. Forms are available in the Office of Student Services. For a lucky few Gund Hall is your official polling place. www.sec.state.ma.us/e/e/e/efv/howreg.htm.

ACCREDITATION

Students should be aware that professional registration in the United States is administered by individual registration boards in each state and that requirements vary from state to state.

MArch Accreditation

In the United States, most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted a 6-year, 3-year, or 2-year term of accreditation, depending on the extent of its conformance with established educational standards.

Doctor of Architecture and Master of Architecture degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree that, when earned sequentially, constitute an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree.

The Harvard University Graduate School of Design's Department of Architecture offers the following NAAB-accredited degree programs:

Master in Architecture (non-pre-professional degree + 140 credit hours)

Master in Architecture (Advanced Placement: pre-professional degree + 100 credit hours)

Next accreditation visit for the M.Arch program: 2012

MLA and MUP Accreditation

The program of study leading to the degree Master in Landscape Architecture as a professional degree (MLA II) is accredited by the Landscape Architectural Accreditation Board of the American Society of Landscape Architects. The program of study leading to the degree Master in Urban Planning as a professional degree (MUP) is accredited by the Planning Accreditation Board. Programs leading to postprofessional degrees (MArch II, MLA II, MAUD, and MLAUD) are not accredited, as persons would have already completed the degree required for certification before entry into these programs.

Professional Registration

Currently, most states are participants in the Intern Development Program (IDP). IDP is administered by the National Council of Architectural Registration Board (www.ncarb.org). To receive professional registration, a candidate must successfully fulfill the education and training requirements of the state in which he or she wishes to register and must pass the nationally administered Architect Registration Examination. Students should contact the appropriate state registration board to determine requirements.



Memorial Church, Harvard Yard / photo: Shelby Elizabeth Doyle

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STUDENT CONDUCT

1A Policy on the General Academic Environment

The general mission of the GSD is to promote the development of design excellence through teaching, learning, and research. Successful pursuit of this mission is predicated on the considerate behavior and integrity of all members in the academic community. Student membership in the GSD community is a privilege conditional upon ethical conduct in academic matters. In addition, all students share in the GSD's responsibility to maintain an environment conducive to intellectual freedom and the pursuit of knowledge.

1B The Student's Responsibility

Students are bound by those policies of Harvard University and the Graduate School of Design that govern student conduct. Access to and familiarity with the policies that govern student conduct are a right and responsibility of every student.

Additionally, the university document *Playing it Safe* contains important information on crime prevention and programs and services at Harvard: www.hupd.harvard.edu/playing_it_safe.php.

1C Academic Integrity

The GSD seeks to maintain a learning and working environment characterized by academic integrity and fair access to educational resources. The GSD expects all students to honor these principles. Actions that violate these principles include the following, and may be the basis for disciplinary action:

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- Cheating on examinations, either by copying the work of other students or through the use of unauthorized aids;
 - Fraudulent presentation of the work of others (either written or visual) as one's own work (plagiarism): notwithstanding the academically acceptable tradition of incorporating assistance, which is freely offered by GSD classmates, in the final thesis presentation (although the assistance must be acknowledged);
 - Simultaneous or repeated submission without permission of substantially the same work (either written or visual) to more than one course;
 - Alteration or misrepresentation of academic records.
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Cases of academic misconduct adhere to the following procedures, under 'Guidelines for Communicating and Dealing with Issues Related to Academic Misconduct,' beginning on the following page.

Guidelines for Communicating and Dealing with Issues Related to Academic Misconduct

Students are expected to be familiar with and abide by the school's standards for academic honesty and conduct. Cheating, plagiarism, unauthorized collaboration or paid assistance, deliberate interference with the integrity of the work of others, fabrication or falsification of data, and other forms of academic dishonesty are considered serious offenses for which disciplinary penalties will be imposed. Following are suggestions for communicating expectations of academic conduct and for dealing with infractions.

a. Communicating Expectations

During the first week of classes, instructors should explain expectations on items listed below. If relevant, the following should be discussed:

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1. Basic expectations for papers and exams. Specify what resources are permitted (including internet resources).
 2. If students are collaborating on projects, some general assumptions about group work.
 3. Submission of coursework for one or more courses simultaneously.
 4. Use of outside copy editing services (as opposed to content editing).
 5. All students receive an FAS booklet, *Writing with Sources*, when they matriculated. It gives detailed information on proper citation of sources. There is also a website, *Writing with Internet Sources*, which is also an excellent reference. Its URL is www.qsd.harvard.edu/inside/student_services/Writing_with_Internet_Sources.pdf. In addition, some students may be accustomed to different cultural values and priorities with respect to academic writing. This increases the need for clearly stated expectations. Students who need additional information about these issues should be referred to the school's Learning Resource Center which is coordinated by the Dean of Students.
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b. Dealing with Violations

Course and studio instructors must report all suspected cases of plagiarism, cheating, or other sorts of academic dishonesty to the Dean of Students. This notification should include a written statement explaining the basis of suspicion. If plagiarism is suspected, the statement should include a copy of the source of the plagiarism and the plagiarized material. The contents of the statement will remain confidential to protect the student's privacy since the facts will not yet have been determined. The instructor may wish to meet with the student at this time to informally discuss the suspicions.

The Dean of Students will meet with the instructor to discuss the statement, and then the Dean of Students and the instructor will meet with the student to present the statement and to seek the student's account of the events. If it is determined that the student has plagiarized or cheated, one of the following should be imposed:

Having to redo the assignment	Failing the assignment
Failing the course	Remedial step
Referral to Academic Misconduct Panel	

Often the first four measures are made in cases where it is apparent that the student did not fully understand his or her obligations or if the offense is considered not severe enough to warrant a hearing with the Academic Misconduct Panel. If the student does agree to the settlement, a written record describing the offense and the settlement is signed by the Dean of Students, the faculty member and the student, and is filed in the Dean of Students' office. As a follow up to the settlement, the student will meet with the Dean of Students to review the GSD's policies. The student is then informed that, if another case of misconduct occurs, the subsequent case will move directly to the Academic Misconduct Panel. At any point in pursuing the foregoing steps, the Dean of Students may consult with the Chair of the Academic

Referral to Academic Misconduct Panel

A case will go to the Academic Misconduct Panel if:

1. The finding of academic misconduct is not the first offense.
2. The severity of the misconduct warrants direct review by the Academic Misconduct Panel.
3. A resolution cannot be reached among the student, instructor and Dean of Students.
4. The student wishes to appeal the instructor's decision.

Academic Misconduct Panel

Composed of a standing 3-person committee drawn from those appointed to the Review Board, the Academic Misconduct Panel will be convened only in cases of academic misconduct (See section I.C. on Academic Integrity). An alternate will be picked from the Review Board when a member of the Academic Misconduct Panel is a complainant in the case. The Dean designates a Voting Faculty member to serve as Chair. The term of appointments to the Panel is the length of the Review Board appointments. The responsibilities of the Panel are to investigate claims of academic misconduct in accordance with the policies and procedures outlined below.

A letter will be sent to the student from the Dean of Students notifying him/her that it has been

Academic Misconduct Panel Review

The registrar will staff the Panel and will initiate disciplinary proceedings by sending a letter to the student including:

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1. A copy of the statement of alleged misconduct.
 2. The composition of the Academic Misconduct Panel.
 3. A copy of the School's Policy on Academic Integrity and its Academic Misconduct.
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Panel process for addressing allegations of academic misconduct (Section I.C).

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1. A copy of documents related to student's prior cases of academic misconduct with the statement that, 'The review will take into account prior instances of academic misconduct.'
 2. The student's right to respond within seven days from receipt of the charge by submitting response to the registrar who is staffing the Panel.
 3. The registrar is available to discuss process with student with the caveat that the registrar will be providing staff support to the Panel, but is not a voting member.
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Copies of all the materials above (including the letter to the student) will be sent to the members of the Academic Misconduct Panel. The student should submit a written statement to the Panel and to offer any evidence bearing on the matter. The student shall be advised to meet with his/her academic advisor, another faculty member, or administrator to review this statement or to discuss the situation. The student should be given one week to respond after receiving the written document.

The Panel will meet as soon as possible but not more than 30 days following receipt of the student's written response. The student has a right to meet with the Academic Misconduct Panel as part of the hearing. A student may be accompanied by a designated advisor (chosen by the student) from within the GSD community. Since the hearing process is not a legal proceeding, legal counsel may not be present. The respondent must notify the person staffing the Panel of the name of the designated advisor at least 24 hours prior to the meeting with the Panel.

The Panel will make a finding as to whether or not academic misconduct has occurred and, if it has, determine which sanctions if any are appropriate. Formal sanctions, those that become part of the student's official record, that may be imposed in cases of misconduct are described below:

Admonition: A formal reprimand that becomes part of the student's official record but does not appear on the transcript.

Probation: Conditional permission to remain at the GSD.

Separation: Temporary separation from the GSD for a specified period of time, after which the student is ordinarily reinstated, or may be required to request permission to be reinstated, sometimes under probation.

Requirement to Withdraw: Reason for withdrawal is not specified on transcript. Student may reapply.

Dismissal: Reason for dismissal is not specified on transcript. Student may reapply.

Expulsion: Reason for expulsion is not specified on transcript. Student may not reapply.

This process is normally completed within 30 days of receiving the written statements from the complainant and respondent.

The Academic Misconduct Panel shall send a copy of its findings and decision to the student. Decisions of the Panel are final, except for those recommending dismissal or expulsion, which require a two-thirds vote at a full faculty meeting. When a disciplinary case is referred to the full faculty for a vote of expulsion or dismissal, the Chair of the Panel will present the facts of the case in a written report to the faculty.

If the faculty fails to accept by two-thirds vote a recommendation by the Academic Misconduct Panel for dismissal or expulsion, the case shall be returned to the Panel for reconsideration of an alternate sanction.

Appeals

All findings, sanctions, or other decisions are subject to appeal. An appeal may be directed to the Dean within 30 days of the decision in question. Appeals will generally be granted only on the basis of new evidence or significant procedural error.

In cases where the appeal pertains to a lesser sanction or procedural error, the Dean's ruling on the appeal will be made within 30 days and is final. In cases where the appeal pertains to a major sanction, and the result of the appeal is a recommendation by the Dean for a change in sanction, a new vote of the faculty is required, normally at the next regularly scheduled faculty meeting.

All parties in a case will be notified in writing of the disposition of the appeal within 30 days of such disposition.

1D Policies on Personal Conduct

A free environment for academic pursuits requires reasonable conduct, both in academic and nonacademic affairs, by all members of the school. The faculty may impose discipline or penalties on individuals for acts that disrupt or endanger the university community's pursuit of teaching, learning, and research in an atmosphere of free inquiry and personal and psychological security. Specific domains considered here include, but are not limited to, the list below. Procedures for disciplinary hearings and sanctions are described in Section II. Review Process.

1. Respect for Others and Their Property

Behavior should be respectful of the rights, privileges, and sensibilities of other people, whether or not they are members of the academic community, and their property, whether or not it is university property. Intimidating, threatening, or hostile behavior toward others is a violation of this policy and may subject the offender to school and university sanctions. Likewise, willful destruction, theft and vandalism of the work or possessions of another student or group of students or of any educational resource (including computers and library materials) and unauthorized use of property are unacceptable and may also subject the offender to sanctions.

2. Personal Safety

Willful behavior that endangers the personal safety of others, whether or not they are members of the GSD, is a violation of school policies and may subject the offender to sanctions. Riots, violent intimidation or threats, use of weapons, physical assault, sexual offenses, and any other acts that endanger the physical well-being of individuals are violations of this policy. The faculty may consider sanctions whether or not civil or criminal penalties are imposed.

3. Protests and Demonstrations

Freedom of speech and assembly, including spontaneous and organized protests and demonstrations, is an essential part of both academic life and the culture of the United States. However, protesters and demonstrators are obliged to respect the rights of other individuals and especially

rights, it is a violation of this policy for any member of the GSD community to prevent or disrupt university functions, such as lectures, seminars, reviews, meetings, and other public events; and administrative, study, design, research, interview, and other nonpublic activities.

4. Contact Persons

Anyone who has reason to believe that a student has engaged in conduct that violated the school's policies on academic integrity, respect for others and their property, personal safety, or protests and demonstrations should report the matter to an appropriate faculty member or program director, or to any officer of the administration.

1E Nondiscrimination

1. Policy

In accordance with Harvard University policy, the Graduate School of Design does not discriminate against any person on the basis of race, color, gender, sexual orientation, religion, age, national or ethnic origin, political beliefs, veteran status, or handicap, in admission to, access to, or employment in its programs and activities. Every effort will be made to ensure fairness and consistency in the school's relations with its students, faculty and staff. Procedures for disciplinary hearings and sanctions are described in Section II. Review Process.

2. Contact Persons

A student of the GSD community who believes that any form of prohibited discrimination has occurred should bring this matter forward for review. (See section 2 'Review Process' for a description of the review process.) The following persons have been designated to handle inquiries regarding the nondiscrimination programs:

32 Holyoke Center, Cambridge, MA 02138 617 495 3786 <i>disabilityservice@harvard.edu</i>	Director of Human Resources Harvard University Graduate School of Design 48 Quincy Street Cambridge, MA 02138 617 495 4323	Dean of Students Harvard University Graduate School of Design 48 Quincy Street, Cambridge, MA 02138 617 495 5453
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The University 504 Compliance Coordinator is responsible for coordinating Harvard's efforts on behalf of individuals with disabilities. In addition, inquiries regarding the application of nondiscrimination policies regarding race, color, national origin, age, gender, or handicap may be referred to:

Regional Director
Office for Civil Rights, Boston Office
U.S. Department of Education
J. W. McCormack Post Office and Courthouse
Room 222, 01-0061
Boston, MA 02109-4557

1F Sexual Harrassment

1. Policy

The GSD seeks to maintain a learning and working environment free from sexual harassment. Sexual harassment seriously undermines the atmosphere essential to the academic enterprise. The determination of what constitutes sexual harassment will vary with the particular circumstances, but it may generally be described as unwanted behavior of a sexual nature, such as physical conduct or verbal comments or suggestions, which has an adverse effect on the learning or working environment of any member of the GSD community.*

Both men and women may be subjected to sexual harassment. Examples in the academic context may range from subtle forms of behavior or off-color jokes to blatant instances of the abuse of power such as making sexual favors a condition of success in a course. Allegations of sexual harassment will be treated seriously. The GSD is committed to working to resolve complaints of sexual harassment in a fair and expedient manner. Procedures for disciplinary hearings and sanctions are described in Section 2 'Review Process'.

*For example, the guideline definition of the United States Equal Employment Opportunity Commission is as follows: Unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature constitute sexual harassment when:

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1. submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment;
 2. submission to or rejection of such conduct by an individual is used as the basis for employment decisions affecting such individual; or
 3. such conduct has the purpose or effect of unreasonably interfering with an individual's work performance or creating an intimidating, hostile, or offensive working environment.
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2. Contact Persons

Any GSD student who believes that he or she is subject to, or who is aware of, sexual harassment is encouraged to discuss the situation as soon as the possible violation, or the most recent incident in a pattern of action, occurred. Contact the Dean of Students (Gund 422, 617 496 1236), or the program directors listed earlier. (See Section 2 for a description of the review process.)

Information on domestic abuse and dating violence, and sexual offenses is provided in the publication, 'Playing it Safe'. www.hupd.harvard.edu/playing_it_safe.php

If you have any questions or need to talk, please contact the Office for Sexual Assault Prevention and Support (617 495 9100) or the Dean of Students, Laura Snowdon (Gund 422, 617 496 1236).

REVIEW PROCESS

Note: Separate procedures apply for academic misconduct. See Section 1C.

2A Informal Review

Many possible cases of discrimination or sexual harassment can best be resolved informally. The officer or faculty member contacted will explore with the student various alternatives for resolving the matter. These may include, among other possibilities, an informal conference with the student, the subject of the possible violation, and one of the individuals listed above. The informal review will normally be completed within 60 days of the initial report of a possible violation to a contact person. Academic integrity and student conduct cases may also be resolved informally, if appropriate. This option should be discussed with the contact person.

2B Initiation of Complaint

In the event that the subject of the possible violation is a student or a member of the faculty, the matter will be handled according to the procedures outlined below. If the subject of the possible violation is an officer of the administration or member of the staff, the matter will be handled according to procedures governing staff disciplinary action.

1. Academic Integrity

See Section 1C. for academic misconduct policies and procedures.

2. Personal Conduct

The initiation of a complaint in cases involving student conduct involves the same process as cases of academic integrity. However, it may also be suggested or required, depending on the circumstances, that the Harvard University Police Department be notified. In cases that involve a civil suit, the dean may decide to proceed with a review independently of the suit or may decline to review a case that is considered to be in the purview of the civil courts only.

3. Discrimination and Sexual Harassment

If a satisfactory resolution cannot be found through an informal approach, and the student wishes to pursue the matter (or elects not to seek an informal resolution), the student will then confer with the Dean of Students. The student will submit a written complaint to the Dean of Students within 30 days of this conference. The written complaint will specify the following:

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- The full name and address of the complainant (the person making the complaint);
 - The full name and address (if known) of the respondent or respondents (person or persons against whom the charge is made);
 - A brief statement of the facts that support the allegation of a violation of GSD policy;
 - The date or dates of the alleged acts or practices.
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A copy of the complaint will be mailed or delivered to the respondent and to the Review Board (described below) by the Dean of Students within 7 days of the date upon which the formal complaint was filed. The respondent may submit a written reply stating his or her response to the complaint to the Review Board and the Dean of Students within 15 days of receipt of the complaint.

2C Review Board

Note: Separate procedures apply for academic misconduct. See Section 1C.

The Review Board will be comprised of six voting members of the Faculty of Design serving staggered three-year terms, of whom one will be designated chair by the dean. Three members of the Review Board will be elected, one from each academic department. The dean will appoint three at-large members and will also appoint an officer of the administration to serve as an ex-officio (nonvoting) member of the board.

All formal complaints and charges will be reviewed by a panel consisting of at least three faculty members normally selected from among the members of the Review Board in advance plus the nonvoting member of the board. Either the respondent or complainant may challenge participation by any member of the Review Board reviewing the case in question, by written petition to the Dean of Students. For good cause, as determined by the dean of the Faculty of Design, the challenged board member shall be replaced by another board member.

2D Review Board Procedures

1. Investigation of Facts

The panel appointed by the Review Board may investigate the facts or may request that an appropriate member of the university community investigate and report in writing. This process is normally completed within 30 days of receiving the written statements from the complainant and respondent. Due consideration will be given to the privacy of all involved parties.

The respondent and complainant or their designees will be provided with the opportunity to review the written investigative report in the Office of Student Services (Gund 422, 617 495 5453) within 15 days from the date that the panel receives the report.

2. Hearing

The panel may hold a hearing, after notice of at least 10 days to all parties, to consider whether any violations of institutional policy have occurred. If the Review Board decides to combine the investigation and hearing procedures, the first hearing will be scheduled within 30 days of receiving the written statements from the complainant and respondent.

Otherwise, the hearing will be scheduled within 30 days of completion of the investigative report. The hearing will not be open to the public. Participation will be determined by the panel. The complainant and the respondent may each normally bring an advisor to the hearing. A record of the hearing will be kept by the Dean of Students for a minimum of three years and will be considered confidential.

The panel will forward its findings and any recommendation for sanctions to the dean. The panel's report will be supported by specific findings of fact and conclusion, including, wherever appropriate, a statement of the reasons for the specific sanction and the principles or policies on which the panel relied in recommending the sanction. The panel's report will normally be completed within 30 days after the conclusion of the hearing.

The panel will provide both parties or their designees with an opportunity to view its written report in the Office of Student Services. Either party may submit a response to the dean within 10 days.

3. Miscellaneous

Upon agreement of the complainant and respondent, the panel may waive any step(s) in these procedures.

The panel may determine at any point in these procedures that, based on the information available, insufficient evidence exists to warrant further review or possible sanctions. The panel will notify all concerned parties of this finding and consider the matter closed, except as provided in the Appeal section below.

2E Sanctions

In the event that the respondent is a member of the GSD faculty, the panel will forward its findings to the Dean for consideration and possible action according to the policies and procedures that govern faculty.

Sanctions for a student may include, but are not limited to, admonition, reprimand, fines, restitutions, probation, mandatory leave of absence, requirements to withdraw, dismissal, a note of explanation on the student's transcript, or expulsion. If lesser sanctions (e.g., admonition, reprimand, fines, or probation) are recommended by the panel, the dean will review the panel's recommendations, with supporting materials, and take appropriate action. The decision of the dean will be made within 30 days of receipt of the panel's report, and is final, except as provided in the Appeal section below.

If major sanctions (e.g., mandatory leave of absence, requirement to withdraw, dismissal, or expulsion) are recommended by the panel, the voting members of the Faculty of Design will review the recommendation of the panel and take final action. In this event, the dean will forward the panel's recommendation and, at his or her discretion, may forward a separate recommendation to the faculty, normally prior to the next scheduled faculty meeting.

In accordance with the Eleventh Statute of the university, no student shall be dismissed or expelled except by a vote of at least two-thirds of the voting members of the faculty present and voting thereon. Other major sanctions require a simple majority of those present and voting thereon. The decision of the faculty is final, except as provided in the Appeal section below. The faculty's decision shall be communicated to the parties in writing within 15 days.

2F Appeals

All sanctions or other decisions (including denial of a hearing) are subject to appeal. An appeal may be directed to the dean within 30 days of the decision in question. Appeals will generally be granted only on the basis of new evidence or significant procedural error.

In cases where the appeal pertains to a lesser sanction or procedural error, the dean's ruling on the appeal will be made within 30 days and is final. In cases where the appeal pertains to a major sanction, and the result of the appeal is a recommendation by the dean for a change in sanction, a new vote of the faculty is required, normally at the next regularly scheduled faculty meeting.

All parties in a case will be notified in writing of the disposition of the appeal within 30 days of such disposition.

2F Disclosure

The GSD is allowed to disclose the results of a disciplinary proceeding against an alleged perpetrator of a crime of violence to the alleged victim of that crime without the prior written consent of the alleged perpetrator. In case of sexual misconduct involving violence, disclosure to the victim of the outcome of the review process against the alleged perpetrator is required.

2H Miscellaneous

The panel may, in its discretion and for good cause, alter any deadlines in these procedures.

MISCELLANEOUS

3A General Policy on Information Technology

Access to the GSD's networks, applications, computers and other electronic resources is a privilege, which the GSD reserves the right to revoke at any time at its sole discretion. Your access is contingent upon your continued proper use of these resources and your continued adherence to applicable law, this policy, and other GSD and Harvard University policies. For detailed information on the GSD's Computer Resource Policies, see http://www.gsd.harvard.edu/inside/computer_resources/manual/welcome/policies.htm.

3B Electronic Media Policy

Electronic media, such as social networking sites, blogs, and virtual worlds, have become increasingly prominent in daily life. Used effectively, they can be powerful communication tools, enabling individuals to share and exchange views on topics of mutual interest.

To ensure that all students are comfortable engaging fully in the learning experience while at the GSD, we ask all members of the GSD community to be respectful, honest, have integrity and personal accountability when using these forms of communications.

3C Video and Audio Recording of Classroom Activities by Students

GSD students are not permitted to make audio or video recordings of classroom sessions or activities in any form without the express approval of the faculty member(s) conducting the session, the student participants, and the Registrar's Office. The use of the term 'recording' in this policy refers to any images or audio captured by digital or film-based cameras, cellular telephones, hand-held devices, PDAs, pagers, audio tape recorders, or other digital or film-based device

3D Computer Accounts

All registered GSD students and affiliates, and external cross-enrolled students, may receive an account on the GSD's computer local area network, with a unique identifier (user name) and password. The account is normally valid until approximately one month following graduation or withdrawal, or the end of semester enrolled for cross-registered students. Use of the GSD's computer resources-including hardware, software, data, email, and internet access, and other resources-is intended for support of personal GSD-related academic studies. Commercial, for-profit, or other non-academic use is inappropriate.

Use of the account user name and password constitutes implicit acceptance of, and is contingent upon, the rules and regulations of the Computer Resources Group as outlined on the web

pages at www.gsd.harvard.edu/crq. Any use or activity which threatens the security or performance of the GSD computer network, invades the privacy of or harasses any other community member, or violates any rules of the GSD Computer Resources Group, may be grounds for termination of account privileges or other disciplinary action.

Account user names and passwords are assigned to individual students and are not transferable. A student may not allow any other person to use his or her computer account or password for any purpose, nor may any student use or attempt to use any other student's account or password: doing so may be grounds for termination of account privileges or other disciplinary action. Every student is responsible for his or her computer account and the circumstances of its use or misuse, including monetary charges for services or supplies consumed. Any student who believes his or her computer account or password has been compromised or misused should immediately contact the Director of Computer Resources.

3E Copyrighted Materials on the Internet

All GSD users must respect the copyrights in works that are accessible through computers connected to the Harvard network. Federal copyright law prohibits the reproduction, distribution, public display or public performance of copyrighted materials without permission of the copyright owner, unless fair use or another exemption under copyright law exists. In appropriate circumstances, the GSD will terminate the network access of users who are found to have repeatedly infringed the copyrights of others.

Information about the application of copyright law to peer-to-peer file sharing of music, movies and other copyrighted works is available at www.dmca.harvard.edu. Students with questions about copyright law or this policy should contact the Director of Computer Resources.

3F Falsification of Admission Application

Occasionally, a candidate for admission will make inaccurate statements or submit false material in connection with his or her application. In most cases, these misrepresentations are discovered during the admission process and the applicant is rejected. If a misrepresentation is discovered after a candidate is admitted, the offer of admission normally will be withdrawn.

If a misrepresentation is discovered after a student has registered, the offer of admission normally will be revoked and the student will be required to leave the school. If the discovery occurs after a degree has been awarded, the degree normally will be rescinded. The determination that an application is inaccurate or contains misrepresentations rests solely with the Admissions Office and will be resolved outside the student disciplinary process.

3G Ownership of Student Work, Intellectual Property Rights and Copyright

Except as provided below, students retain the copyright and other intellectual property rights in work they create in their capacity as students at the GSD. If the work is created as part of the student's duties as a paid employee (whether by stipend or by salary) it will be considered a 'work made for hire' for the University and the University will own the copyright.

A work is understood as the original expression of an author: a copy of the work is a physical manifestation of the expression. Copies of work submitted by a student in satisfaction of admission, course, or degree requirements, such as papers, drawings, models, digital images and other materials, become the property of the school. The GSD may use such copies for GSD non-commercial, academic or research purposes such as in exhibitions of GSD student work, GSD publications, reports to sponsors of studios and other forms of GSD outreach, provided that each student must be appropriately credited as the creator of the student's work.

Any other use of student work, for example, by faculty in their own publications, requires the written consent of each student contributor, in addition to appropriate credit. The school, faculty, and staff assume no responsibility for the physical safeguarding of such copies of student work and may, at their discretion, retain such copies, return them to their creators, or discard them. Ordinarily, material of a current student will not be discarded without giving the student a chance to reclaim it.

Due to the nature of design instruction, faculty will often be in the position of sharing their creative work with students and involving students in the work. Additionally, students working in groups may create works collaboratively. In such cases, joint ownership of works may result by agreement or as a matter of law.

If the GSD has provided more than incidental support for the creation and development of a work, individual students who contributed to the work will retain the rights to their ideas, but the University will own the copyright and other rights in the work itself. GSD support may include use of GSD resources such as funds, facilities and equipment beyond the resources typically provided for student use in connection with studios and other courses.

If the work is created as part of an activity that is subject to an agreement between the University/GSD and a third party that contains provisions on copyright and the use of the work, rights will be allocated in accordance with the agreement. With respect to studios, it is general GSD policy not to enter into or approve agreements with sponsors of studios that directly or indirectly provide for the transfer of rights in student work to a sponsor, beyond allowing use of the work as is customary in reports to the sponsor and displays relating to the project. In no circumstances will a transfer of rights, other than in connection with such customary uses, be approved without the written consent of each student contributor. The University's 'Intellectual Property Policy' can be found at: www.techtransfer.harvard.edu/resources/policies/IP/.

3H Student Inventions and Software Creations

The University Statement of Policy in Regard to Inventions, Patents and Copyrights specifies that it applies to 'all members of the university including students in connection with their university work.' This will be interpreted to mean the following:

In regard to inventions, ownership of inventions made by a student shall remain with the student unless:

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1. The invention results from a student's employment by Harvard (either by stipend or salary).
 2. The invention is made in work which is subjected to a sponsored research agreement.
 3. The invention is made through the use of significant university resources or facilities (the use of resource or facilities generally available to students as part of their educational activities would not be considered 'significant' in this context).
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In regard to software, ownership of software created by a student shall remain with the student unless:

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1. The software is created as part of the student's duties as a paid employee (whether paid by stipend or by salary).
 2. The software is created in work which is subject to a sponsored research agreement.
 3. The software is created as part of work within a program, laboratory, or department which has a specified policy (which has been communicated to the student) that software will be owned by the university.
 4. The software is created with the use of significant university resources or facilities (the use of resources or facilities generally available to students as part of their educational activities would not be considered 'significant' in this context).
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3I Right of the University to Capture and use Digital Images

The use of digitized images for ID cards for academic and security purposes at the university is a condition of employment for all employees, and a condition of enrollment for all students. The university is within its rights to require images for the purposes of security and academic integrity. Specifically, Harvard University may use digitally recorded images of its populations for identification purposes, including identification cards, security systems, and classroom and exam proctor lists.

Requests for exemptions from having a photo ID will be reviewed by the Office of the General Counsel and will be granted only in extreme circumstances. If you do not wish to have your picture in facebook or internal directories, contact ID Card Services at 617 495 3322.

Should no previous objection be recorded, the university may print images of students, staff, faculty, or administration in its many traditional house/dorm books, class books, or organizational charts for purposes within the university. Should no previous objection be recorded, the university may print images in internal publications of students or faculty who are receiving degrees or awards. Should permission be given, the university may distribute prints of all students and faculty receiving degrees or awards outside of the university. Images will not be distributed from this database for purposes of negative publicity that could endanger a member of our community.

3J Use of University Libraries

The university's libraries are for the use of the students, faculty, staff, and other authorized members of the university and scholarly community. Except when specifically authorized for use to a designated commercial user, the systematic exploitation of library resources, including its databases, for profit is prohibited. It is inappropriate for students and others to sell data, to act as agents for those who do so, or otherwise to use their library privileges other than for personal academic use.

Students who fail to comply with library rules will be subject to revocation of library privileges, disciplinary action, and legal prosecution. In particular, unauthorized removal from the library of any book or other library material or property, or destruction, defacement or abuse of any library materials or other resources, are matters of grave concern. All library users will be subject to the fines and penalties of the Graduate School of Design and of the university as well as the laws of the Commonwealth of Massachusetts governing crimes against property.

3K Student Right-to-Know and Campus Security Act of 1990

In compliance with the Student Right-to-Know and Campus Security Act of 1990, the Harvard University Police Department publishes an online annual security handbook, entitled 'Playing It Safe'. The handbook describes Harvard's security policies, provides statistical information on the occurrence of crime on campus, and outlines some of the counseling programs the university offers. The handbook can be found at www.hupd.harvard.edu/prevention_handbook.php.

3L Consumer Information

In addition to the information contained in this Student Handbook, additional Consumer Information can be found in the Financial Aid Handbook on the website for the Office of Financial Assistance, www.gsd.harvard.edu/admissions/financial_aid/handbook.html. Copies of the Financial Aid Handbook are also available in the GSD Office of Student Services, Gund 422.

3M No-Smoking Policy

The no-smoking ordinance of Cambridge, Massachusetts, defines smoking as a hazard to public health and a public nuisance. It prohibits smoking in any public spaces in Cambridge, including classrooms, lecture halls, libraries, auditoriums, restrooms, work areas, lounges, and hallways.

These regulations are in effect throughout the city, and, of course, throughout Harvard University and the GSD. All faculty, students and staff members are expected to comply fully with this no-smoking ordinance.

Smoking is not permitted anywhere at the GSD. Under terms of the Cambridge ordinance, the GSD is responsible for policing all no-smoking areas within its buildings. Persons who smoke in no-smoking areas are in violation of this ordinance, which provides substantial individual and institutional penalties.

Please advise all persons who are smoking inside GSD buildings of the regulations and request that they comply. If the smoker does not comply with the request, the affected person should give the smoker's name to the Dean of Students.

3N Drugs and Alcohol

Harvard University promotes the health and well-being of its students and employees through its Health Services and other agencies. The unlawful possession, use, or distribution of illicit drugs and alcohol by students and employees on Harvard property or as a part of any Harvard activities is a violation of university rules as well as of the law.

Possession, use, or distribution of certain non-prescription drugs, including marijuana, amphetamines, heroin, cocaine, and nonprescription synthetics; procurement or distribution of alcohol if one is under 21 years of age; and provision of alcohol to anyone under 21 years of age are violations of law and of Harvard policy.

The university holds its students and employees responsible for the consequences of their decisions to use or distribute illicit drugs or to serve or consume alcohol. Further, it expects students and employees to create and maintain an environment for learning and work that is safe and healthy and that encourages responsible conduct.

The use of illicit drugs and the misuse of alcohol are potentially harmful to health. In particular, synthetically produced drugs, which are readily available in the Boston metropolitan area, often have unpredictable emotional and physical side effects that constitute an extreme health hazard. In addition, students are encouraged to weigh the seriousness of potential loss of function that may come from ingesting illicit drugs or too much alcohol. Because of the considerable health hazards involved in drug use, administrative, medical, and psychiatric help for students having drug problems or difficulties controlling their use of alcohol are available

on a confidential basis at the University Health Services. Any member of the university may make use of the Health Services on an emergency basis, day or night.

Attention is directed to the fact that the university is not, and cannot be considered as, a protector or sanctuary from the existing laws of the city, state, or federal government. Students are reminded that there are heavy penalties, including imprisonment, for possession or distribution of illicit drugs and for selling or delivering alcohol to, or procuring alcohol for, someone under the age of 21. There are also serious penalties for anyone under the age of 21 who purchases, attempts to purchase, arranges to procure alcoholic beverages, misrepresents his or her age, or falsifies his or her identification with the intent of purchasing alcohol; anyone, regardless of age, caught falsifying a driver's license, or selling or distributing false ID's; and anyone, regardless of age, who operates a motor vehicle under the influence of alcohol or drugs, or with an open container of alcohol. In addition, the City of Cambridge prohibits consumption of alcohol on public property or on property open to the public. All students should become familiar with the publication, 'Playing it Safe' prepared by the Harvard Police www.hupd.harvard.edu/playing_it_safe.php.

3O Hazing

Massachusetts law prohibits hazing in connection with initiation of new members into formal or informal student organizations. The term hazing means any conduct or method of initiation into any student organization, whether on public or private property, which willfully or recklessly endangers the physical or mental health of any student or other person. Principal organizers of or participants in hazing can be punished by fines and/or imprisonment, and students or others present at the scene of the crime of hazing are required to report such crime to law enforcement officials. GSD students who organize or commit the crime of hazing are subject to GSD disciplinary action. For more detailed information, refer to Playing it Safe.

3P Firearms and Dangerous Weapons

There is a Massachusetts criminal statute prohibiting persons (other than law enforcement officers), regardless of whether or not they have a license, from carrying a loaded or unloaded firearm in any university building or on the grounds of the university without written authorization of the board or officer in charge of the university. The definition of 'firearm' includes BB and pellet guns. A maximum penalty of \$1,000 fine or one year in jail, or both, can be imposed.

That statute (M.G.L. c. 269, 10(j)) has been amended recently by Chapter 648 of the Acts of 1989, extending the coverage of the statute to the carrying of 'any other dangerous weapon.' The amendment also makes it a misdemeanor punishable by a fine of up to \$500 if any faculty member or

The amendment does not define a dangerous weapon, but it should be assumed that a dangerous weapon includes items designed to do bodily injury such as a stiletto, ballistic knife, blackjack, brass knuckles, billy stick, switchblade knife, and martial arts items such as throwing stars, kung fu sticks, and nunchaku (sticks connected by a rope, chain, wire or leather).

Anything that can be perceived as a threat can and will be confiscated. If you have any questions, see the Dean of Students or call the Harvard Police.

3Q Missing Persons Policy

As required under federal law, the Graduate School of Design immediately will refer to the Harvard University Police Department (HUPD) any missing persons report involving a student who is living in on-campus housing. If HUPD determines that the student has been missing for more than 24 hours, then, within the 24 hours following this determination, the School, working with HUPD as necessary will:

-
1. Attempt to contact the student using any confidential contact information that the student may have provided to the School;
 2. Notify an appropriate external law enforcement agency;
 3. Contact any person the student has identified to the Registrar as an emergency contact; and
 4. Notify others at the University, as appropriate, about the student's disappearance. Students are reminded that they may provide the Registrar with the emergency contact information and/or confidential personal contact information if they have not already done so.
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Commencement, Gund Hall Trays / photo: Shelby Elizabeth Doyle





Gund Hall, From Quincy Street / photo: P. Vanderwerker



The paper in the book is 70 lb Cascades Rolland Enviro100 a FSC-certified 100% post-consumer recycled paper which is processed chlorine-free. Soy-based inks were used by the printer Puritan Press. The body text is Acid and there's also some Helvetica for good measure.

Thank you to faculty, staff, and students who shared their perspectives and advice about life at the GSD, to Amanda Heighes for her eye for detail, to Michael Ames at Puritan Press, and to the student editors from years before: much of their work remains.

Appendix 7

Dean's Diversity Initiative (DDI) at the Harvard Graduate School of Design

Faculty and Staff Members:

Lauren Baccus	Director of Human Resources
Toni Griffin	Adjunct Associate Professor of Urban Planning
Gail Gustafson	Co-Director of Admissions
Jonathan Levi	Adjunct Professor of Architecture (DDI Co-Chair)
Erika Naginski	Associate Professor of Architecture
Geri Nederhoff	Co-Director of Admissions
Carlos Reyes	Student Services Coordinator
Laura Snowdon	Dean of Students (DDI Co-Chair)
Jim Stockard	Lecturer in Housing Studies, Director of the Loeb Fellowship Program

Alumni Advisors:

Derek Ham	Assistant Professor at Florida A&M University; Alumnus, MArch II 2003; Member GSD Alumni Council
Steve Lewis	President of NOMA; Principal, Parsons Corp.; GSD Loeb Fellow 2006-07
Liz Ogbu	Public Architecture; Alumna, MArch I 2004
Michaele Pride	Associate Professor at UC School of Architecture and Interior Design; MAUD 2001; GSD Alumni Council Chair
M. David Lee, FAIA	Partner, Stull and Lee Incorporated; former Adjunct Professor at the GSD; MAUD 1971

Appendix 8

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Appendix 9

Harvard Graduate School of Design Public Exhibitions 2006-2011

For main exhibitions:

EXHIBITION TITLE

CURATOR/FACULTY MEMBER

FALL 2011

- *Dispatches from the Harvard GSD: 075 Years of Design* Peter Christiansen

SPRING 2011

- *Motion Matters, UNStudio* Ben van Berkel
- *The Divine Comedy* Sanford Kwinter
- *Commencement*

Faculty and visitor exhibitions:

- Rafi Segal: *Site Work*: April
- Theaster Gates: *The Rebuild Foundation*: April/May
- Kibbutz: *Architecture Without Precedents*: April/May (Library)
- Martin Bechtold: *Ceramic Futures*: April/May
- *Material Properties*: Jane Hutton (Upstairs Library)

FALL 2010

- *Deconstruction/Construction: The Cheonggyecheon River Project in Seoul*,
10th Veronica Rudge Green Prize in Urban Design Juan Busquets
- *Platform 3* Emily Waugh

Faculty and visitor exhibitions:

- Adams Kara Taylor: *The Structural Engineering of a Metaphor*: August
- Mark Mulligan: *Digital Archaeology: Unearthing Frank Lloyd Wright's Imperial Hotel*: September
- *UD50: 50th Anniversary of the Urban Design studies program*: September
- Joseph Grimma: *Diwaniya, Architectural Space and Political Exchange*: December-January

SPRING 2010

- *NEW TRAJECTORIES: Convergent Flux: Korea* John Hong, Jinhee Park, Halim Suh
- *Erratics: A Genealogy of Rock Landscape, Featuring
the Work of Claude Cormier Architectes Paysagistes (LA)* Jane Hutton
- *Commencement*

Faculty and visitor exhibitions:

- Pierre Belanger: *Power Perestroika*: January-February
- George Legendre: *The Mathematics of Sensible Things*: February-March
- Janine Antoni: *Inside/Out*: March-April
- *Invention/Transformation: Jimi Oases in Al Ain*: April (Jorge Silveti)
- Jeffrey Schnapp: *The Thing Tank* (with Special Collections exhibition in Library): January-February
- Weiwen Huang: *Shenzhen Biennale*: February-March

- Florian Idenburg *SO-IL: Five Projects*: March-April

FALL 2009

- *Utopia Across Scales: Highlights from the Kenzo Tange Archive*
- *Platform 2*

Seng Kuan
Felipe Correa

Faculty and visitor exhibitions:

- *25 Years of the Tange Visiting Professorship*: August-October
- *Life and work of Max Bond*: September-November
- Eelco Hooftman *GROSS MAX: Land of Water, Zuiderzeemuseum*: October-November
- Nazneen Cooper and Niall Kirkwood: *Mumbai Memo: Indexing Mumbai*: November
- Rick Peiser, curated by John Stilgoe: *Luminosity 1*: November
- Nanako Umemoto/RUR: *Shenzen Airport*: December-January
- Cecilia Puga: *Casa en Bahia Azul*: December-January

SPRING 2009

- *Patterns: Cases in Synthetic Intelligence*
- *Ecological Urbanism*
- *Commencement*

Paul Andersen
Gary Doherty

Faculty and visitor exhibitions:

- *Terminus: Disappearing Glaciers and Fragments of Human History (Peru, Vol. 1) a.k.a The Canary Project*: March-April
- *Road not yet Taken: The Interstate Highway Corridor Reconsidered*, Rob Lane, James Brown, Heather Tremaine: April-May
- *Concrete in the Landscape: 3 sites 3 projects by Peter Rose*: Spring
- Lars Muller: *Building Books: The Architect as Author*: April-May

FALL 2008

- *New Trajectories: Contemporary Architecture in Croatia and Slovenia*
- *Platform 1*

Mariana Ibañez
Lluís Ortega

Faculty and visitor exhibitions:

- Christoph Reinhart: *Modeling Gund Hall*: October-November
- *Afterlife: Alison and Peter Smithson's Economist Building at 50*, Curated by Peter Christensen and Mary Daniels in Special Collections
- *Ecological Urbanism Research seminar*: October
- Ciro Najle: *Motherhouse*: October-November
- Jalal Toufic : *Minor Art: Conceptual Posters and Book Covers*: November-December
- Chris Reed: *Regenerative Mats*: December-January

SPRING 2008

- *Dirty Work: Transforming Landscape*
- *Aga Khan Award for Architecture, Tenth Cycle*
- *Commencement*

John Beardsley, Christian Werthmann
Hashim Sarkis

Faculty and visitor exhibitions:

- Michael Meredith: *Three Variations on a Type*: January-February

- Hashim Sarkis: *Bademli House*: February-March
- Jonathan Levi: *Propagations*: May

FALL 2007

- *Transsolar*
- *Studio Works*
- *Weiss Manfredi*, Green Prize

Matthias Schuler
Laura Miller,

Faculty and visitor exhibitions:

- Marco Steinberg: *Stroke Pathways*: September
- Carl Steinitz: October-November (Loeb wall)
- Michael Meredith: *Willoughby Sharp*: November-December
- Joan Busquets and Felipe Correa: *Quito*: December-January

SPRING 2007

- *Project Zagreb*
- *African Cities*
- *Commencement*

Eve Blau, Ivan Rupnik
Tange Recipient David Adjaye

Faculty and visitor exhibitions:

- Paula Meijerink: *Wanted*, March-April (Loeb wall)
- Virginie Lefebvre, Aziza Chaouni: *Desert Ecotourism*, April
- Holly Getch-Clark: *Dioramas*, May

FALL 2006

- *Studio Works*
- *Beyond the Harvard Box*
- *Swiss Landscape*

Laura Miller,
Michael Meredith
Dorothee Imbert

Faculty and visitor exhibitions:

- Rick Peiser: *Mount Auburn Reflections*, October-November(Loeb Wall)
- Alistair McIntosh: *A Way of Working*, October-December
- Carl Steinitz: November-January (Loeb wall)
- Thomas Schroepfer and Christian Werthmann in Collaboration with Limin Hee: *Transurban Case Study 01: Vauban*, December-January

SPRING 2006

- *Playgrounds*
- *Between Form and Circumstance*
- *Commencement*

Noyes Professors Luis Mansilla, Emilio Tuñón
Michael Van Valkenburgh

Faculty and visitor exhibitions:

- Joseph MacDonald: *On Pattern*, January-March
- Alan Berger: *Drosscapes*, April
- Kostas Terzidis: *Algorithmic Architecture*, May

GSD COURSE AND INSTRUCTOR EVALUATION

Spring 2011

Course # _____ Instructor _____

The consolidated results of the first section will be made available to students ***Please write in pen***

CONTENTS/SUBJECT MATTER OF COURSE		Negative					Positive
1.	Did the instructor meet the stated objectives of the course?	1	2	3	4	5	NA
2.	Were your expectations for this course fulfilled?	1	2	3	4	5	NA
3.	Was the subject matter presented in the course:						
	a. clear?	1	2	3	4	5	NA
	b. intellectually challenging?	1	2	3	4	5	NA
	c. stimulating?	1	2	3	4	5	NA
PROJECTS/ASSIGNMENTS		Negative					Positive
4.	Were assignments well-chosen and helpful to the course?	1	2	3	4	5	NA
5.	Were assigned readings well-selected and relevant?	1	2	3	4	5	NA
6.	Was the workload (readings, assignments and other requirements):						
	a. reasonable?	1	2	3	4	5	NA
	b. allocated well within the course?	1	2	3	4	5	NA
	c. distributed well in relationship to the semester overall?	1	2	3	4	5	NA
7.	What proportion of the assigned reading did you complete?	20%	40%	60%	80%	100%	
8.	Were teaching facilities adequate?	1	2	3	4	5	NA
INSTRUCTOR		Negative					Positive
9.	Did the instructor exhibit adequate knowledge of the subject matter?	1	2	3	4	5	NA
10.	Did the instructor give clear, well-structured presentations?	1	2	3	4	5	NA
11.	Did the instructor foster quality discussion in class?	1	2	3	4	5	NA
12.	Was the instructor's verbal and written feedback helpful?	1	2	3	4	5	NA
13.	Was the instructor accessible during office hours or otherwise?	1	2	3	4	5	NA
14.	Did the instructor help you to develop relevant skills and abilities?	1	2	3	4	5	NA
15.	Was the role of T.A./T.F.s appropriate and helpful to the course?	1	2	3	4	5	NA
16.	Did the instructor:						
	a. seem committed to teaching?	1	2	3	4	5	NA
	b. inspire your interest and curiosity?	1	2	3	4	5	NA
OVERALL RATINGS		Negative					Positive
17.	Overall Instructor Rating	1	2	3	4	5	NA
18.	Overall Course Rating	1	2	3	4	5	NA

OVER ↘

This section will be available to the course instructor(s) and department chair only.

PLEASE COMMENT ON THE FOLLOWING QUESTIONS:

Please write in pen

19. What were the greatest strengths/weaknesses of the course/studio?

20. Comment on the content/subject matter of the course.

21. Comment on the quality and selection of the projects/assignments.

22. Comment on instructor's strengths/weaknesses.

23. What preparation/background is necessary for this course?

24. How would you improve this course?

25. Additional comments.

GSD STUDIO AND INSTRUCTOR EVALUATION

Spring 2011

Course # _____ Instructor _____

The consolidated results of the first section will be made available to students ***Please write in pen***

CONTENTS/SUBJECT MATTER OF COURSE		Negative					Positive
1.	Did the instructor meet the stated objectives of the course?	1	2	3	4	5	NA
2.	Were your expectations for this course fulfilled?	1	2	3	4	5	NA
3.	Was the subject matter presented in the course:						
	a. clear?	1	2	3	4	5	NA
	b. intellectually challenging?	1	2	3	4	5	NA
	c. stimulating?	1	2	3	4	5	NA
PROJECTS/ASSIGNMENTS		Negative					Positive
4.	Were assignments well-chosen and helpful to the course?	1	2	3	4	5	NA
5.	Were assigned readings well-selected and relevant?	1	2	3	4	5	NA
6.	Was the workload (readings, assignments and other requirements):						
	a. reasonable?	1	2	3	4	5	NA
	b. allocated well within the course?	1	2	3	4	5	NA
	c. distributed well in relationship to the semester overall?	1	2	3	4	5	NA
7.	What proportion of the assigned reading did you complete?	20%	40%	60%	80%	100%	
8.	Were teaching facilities adequate?	1	2	3	4	5	NA
INSTRUCTOR		Negative					Positive
9.	Did the instructor exhibit adequate knowledge of the subject matter?	1	2	3	4	5	NA
10.	Did the instructor give clear, well-structured presentations?	1	2	3	4	5	NA
11.	Did the instructor foster quality discussion in class?	1	2	3	4	5	NA
12.	Was the instructor's verbal and written feedback helpful?	1	2	3	4	5	NA
13.	Was the instructor accessible during office hours or otherwise?	1	2	3	4	5	NA
14.	Did the instructor help you to develop relevant skills and abilities?	1	2	3	4	5	NA
15.	Was the role of T.A./T.F.s appropriate and helpful to the course?	1	2	3	4	5	NA
16.	Did the instructor:						
	a. seem committed to teaching?	1	2	3	4	5	NA
	b. inspire your interest and curiosity?	1	2	3	4	5	NA
OVERALL RATINGS		Negative					Positive
17.	Overall Instructor Rating	1	2	3	4	5	NA
18.	Overall Course Rating	1	2	3	4	5	NA
STUDIO		Negative					Positive
19.	Were desk critics and individual feedback clear and constructive?	1	2	3	4	5	NA
20.	Were the interim reviews adequate and constructive?	1	2	3	4	5	NA
21.	Was the instructor accessible during studio periods?	1	2	3	4	5	NA
22.	Did studio help develop your creative abilities?	1	2	3	4	5	NA

This section will be available to the course instructor(s) and department chair only.

PLEASE COMMENT ON THE FOLLOWING QUESTIONS:

Please write in pen

19. What were the greatest strengths/weaknesses of the course/studio?

20. Comment on the content/subject matter of the course.

21. Comment on the quality and selection of the projects/assignments.

22. Comment on instructor's strengths/weaknesses.






23. What preparation/background is necessary for this course?

24. How would you improve this course?

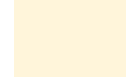


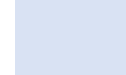
25. Additional comments.

**GUND HALL
Master Legend**






Departments

-  Architecture
-  Landscape Architecture
-  Advanced Studies Program
-  Urban Planning & Design
-  Loeb Fellowship
-  Student Forum
-  Student Services
-  Dean
-  Administration
-  Faculty Planning
-  Academic Finance
-  Exhibitions
-  Computer Resources
-  Building Services

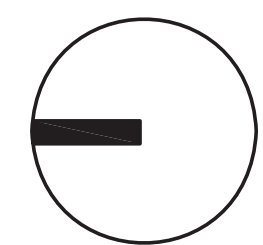
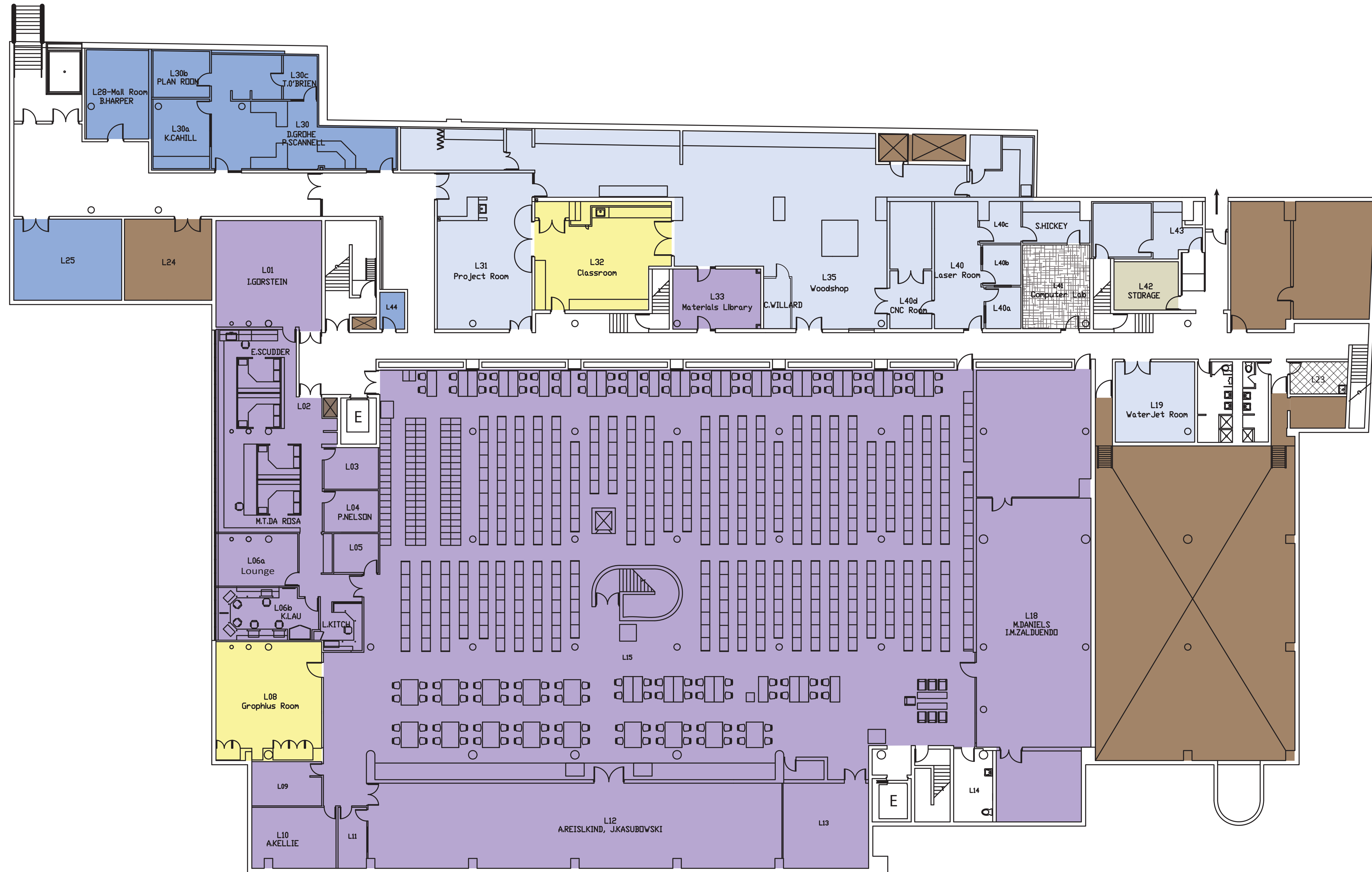
Teaching Spaces

-  Studio
-  Teaching Spaces
-  Computer Lab
-  Fabrication Lab

Common & Service Areas

-  Loeb Design Library
-  Chauhaus (HUDS)
-  Mechanical
-  Custodial
-  Circulation

Harvard Graduate School of Design
Gund Hall Space Utilization
Effective Fall 2009

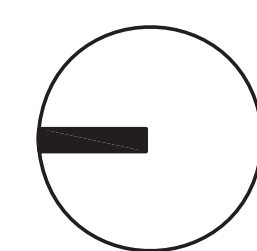
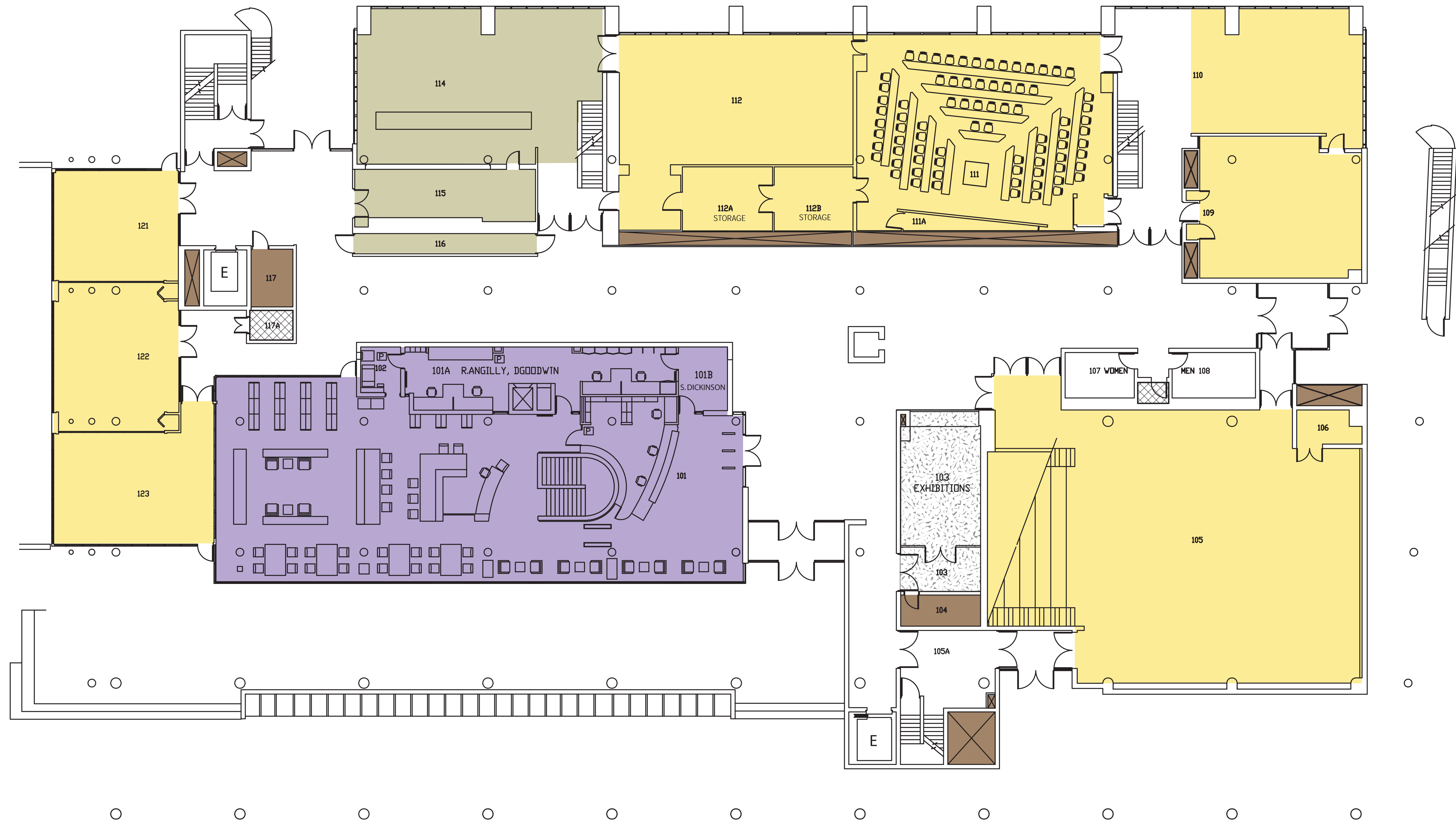


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|---|--|---|
| Teaching Spaces | Loeb Design Library | Mechanical |
| Computer Lab | Chauhaus (HUDS) | Custodial |
| Fabrication Lab | Building Services | Circulation |

Harvard Graduate School of Design

BASEMENT FLOOR Gund Hall

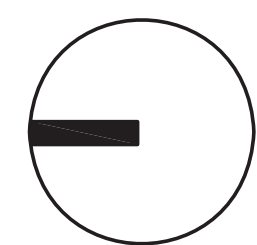
3/11/2010



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|---|--|---|
| Teaching Spaces | Chauhaus (HUDS) | Circulation |
| Loeb Design Library | Mechanical | |
| Exhibitions | Custodial | |

Harvard Graduate School of Design
FIRST FLOOR Gund Hall

3/11/2010

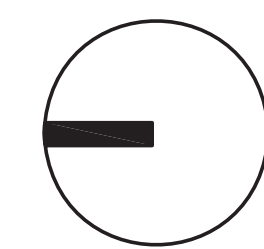


- Studio
- Teaching Spaces
- Architecture
- Mechanical
- Custodial
- Circulation

Harvard Graduate School of Design

SECOND FLOOR + MEZZANINE Gund Hall

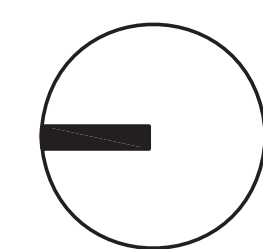
3/11/2010



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| Studio | Architecture | Urban Planning & Design | Mechanical |
| Teaching Spaces | Landscape Architecture | Loeb Fellowship | Custodial |
| Computer Lab | Advanced Studies Program | Student Forum | Circulation |
| Fabrication Lab | Landscape & UPD Shared | Building Services | |

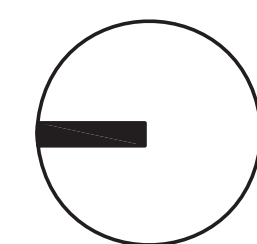
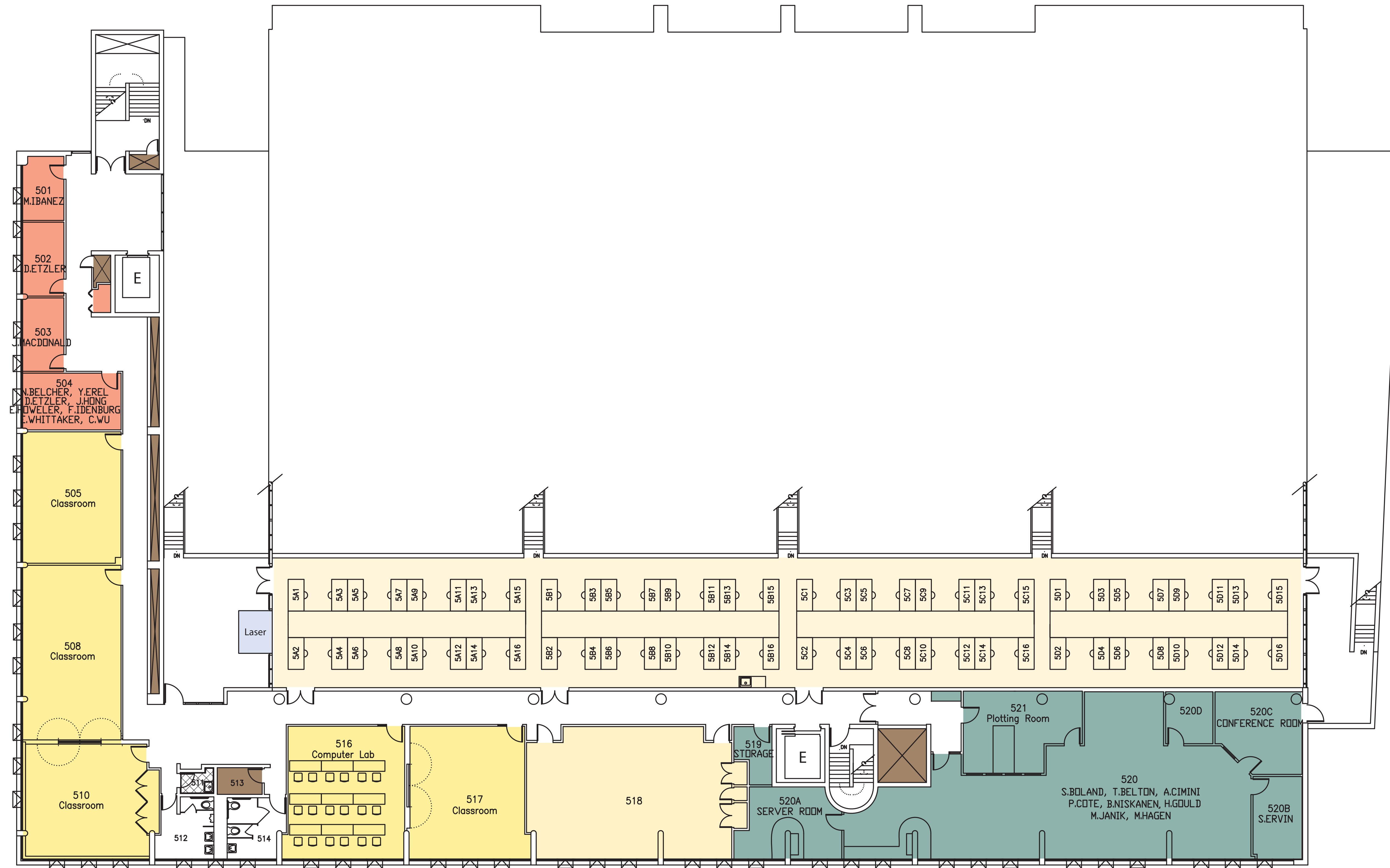
Harvard Graduate School of Design
THIRD FLOOR Gund Hall

3/11/2010



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|--|--|---|--|
| Studio | Landscape Architecture | Administration | Student Services |
| Teaching Spaces | Urban Planning & Design | Faculty Planning | Mechanical |
| Architecture | Dean | Academic Finance | Custodial |

Harvard Graduate School of Design
FOURTH FLOOR Gund Hall



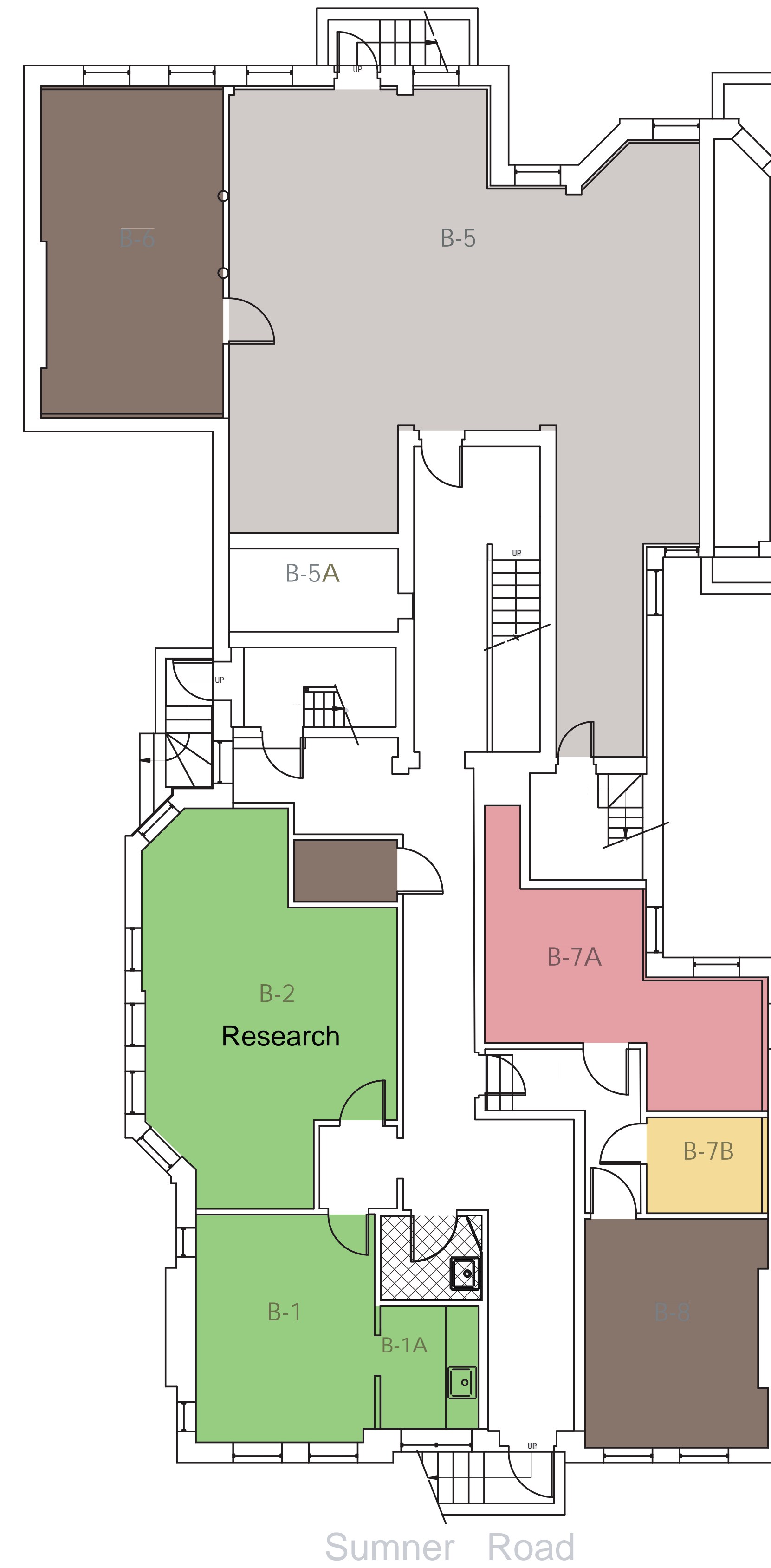
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|--|---|---|
| Studio | Architecture | Custodial |
| Teaching Spaces | Computer Resources | Circulation |
| Fabrication Lab | Mechanical | |

Harvard Graduate School of Design
FIFTH FLOOR Gund Hall

7 SUMNER ROAD MASTER LEGEND

- Teaching Spaces
- Emeriti Office
- Research
- Aga Khan Office
- Visiting Scholar Office
- Harvard Design Magazine
- Publications
- Exhibitions
- Development/Alumni/ae Relations
- Real Estate Initiative Office
- Finance office
- Human Resources
- Faculty Planning
- Mechanical
- Custodial
- Circulation

Cambridge Street



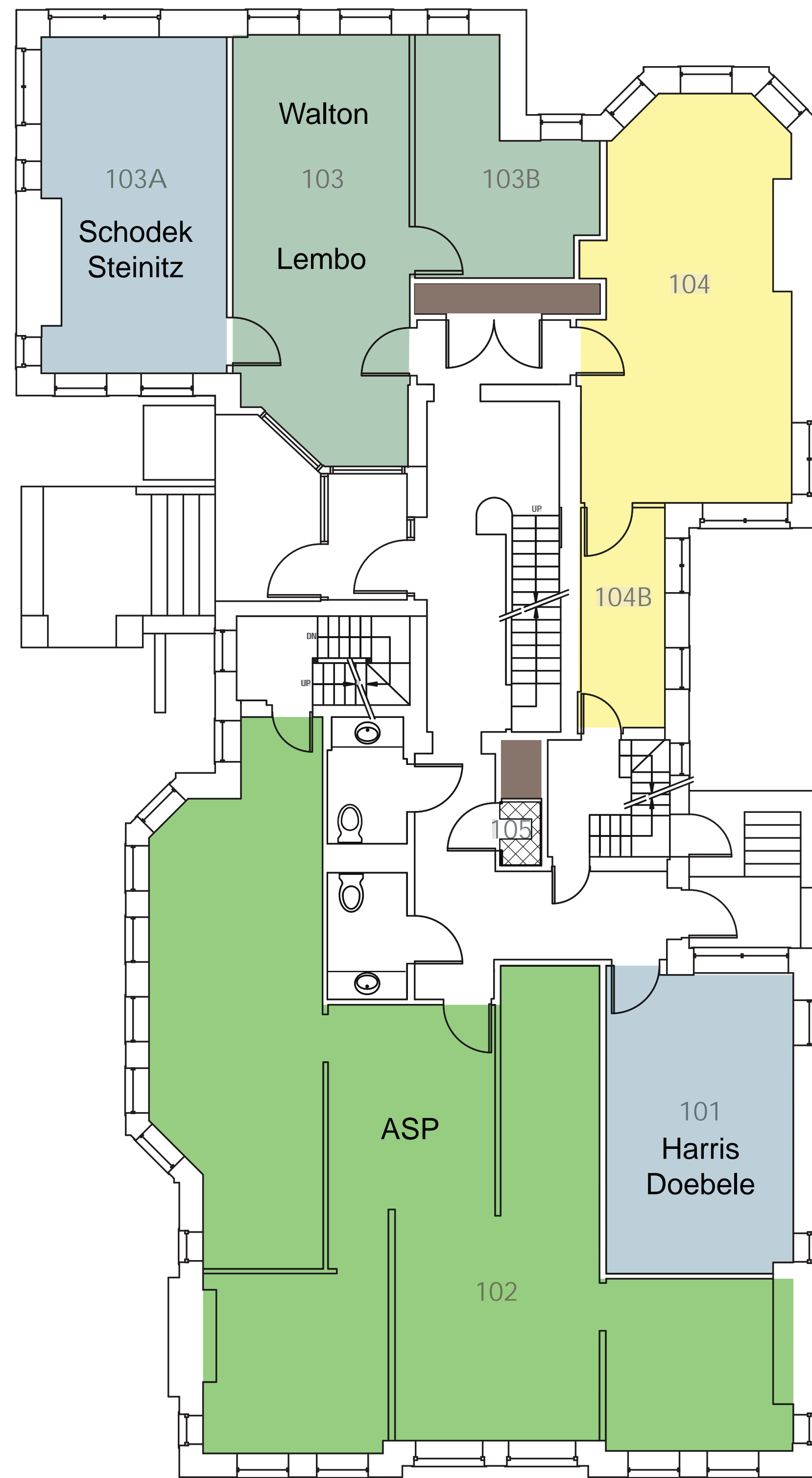
Legend

- Research
- Development Storage
- Student Services Storage
- Shared Storage
- Mechanical
- Custodial
- Circulation

BASEMENT FLOOR 7 Sumner Road

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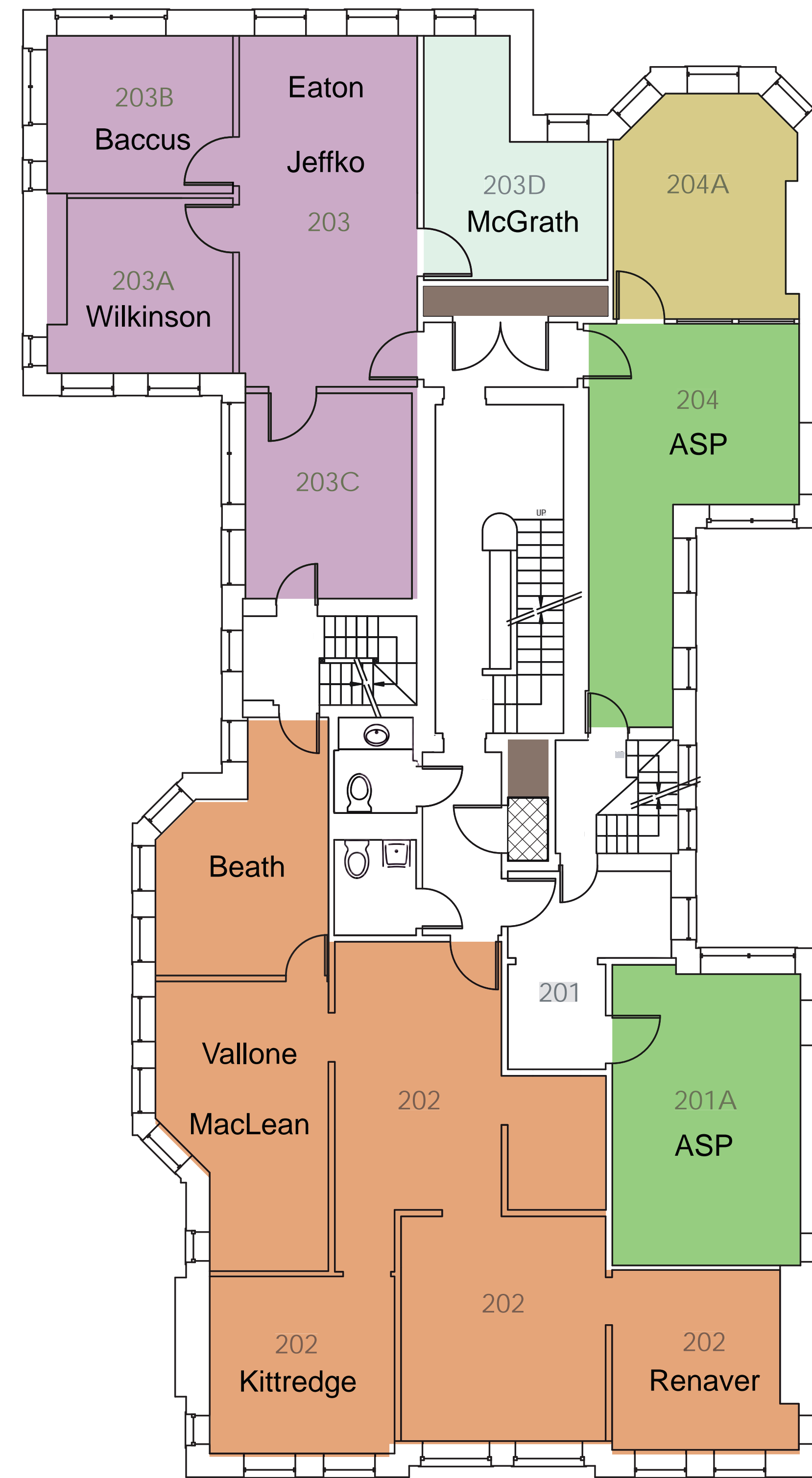
Cambridge Street



Sumner Road

FIRST FLOOR 7 Sumner Road

Cambridge Street



Sumner Road

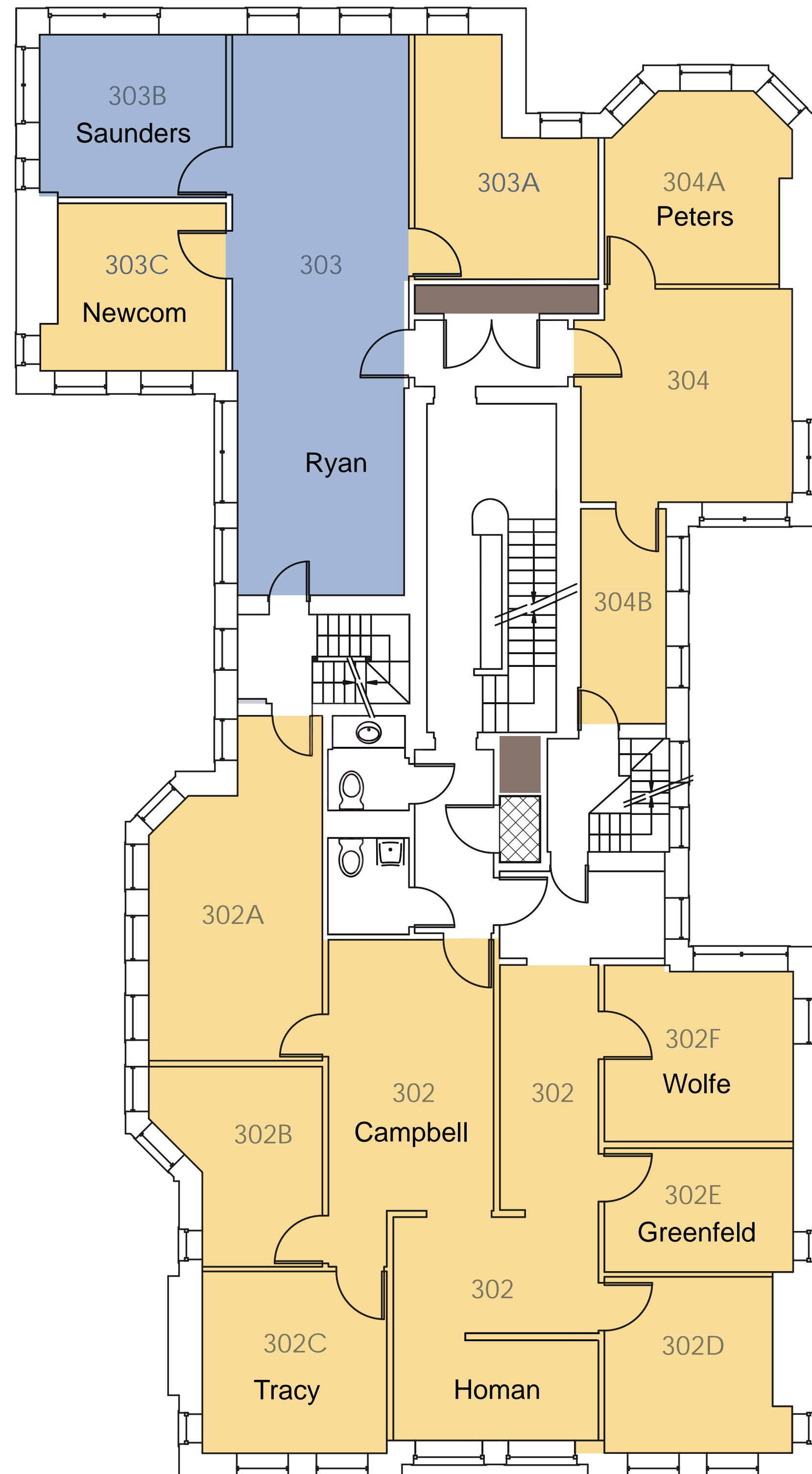
SECOND FLOOR 7 Sumner Road



Legend

- Teaching Spaces
- Emeriti Office
- Research
- Aga Khan Office
- Real Estate Initiative Office
- External Relations
- Finance office
- Human Resources
- Faculty Planning
- Mechanical
- Custodial
- Circulation

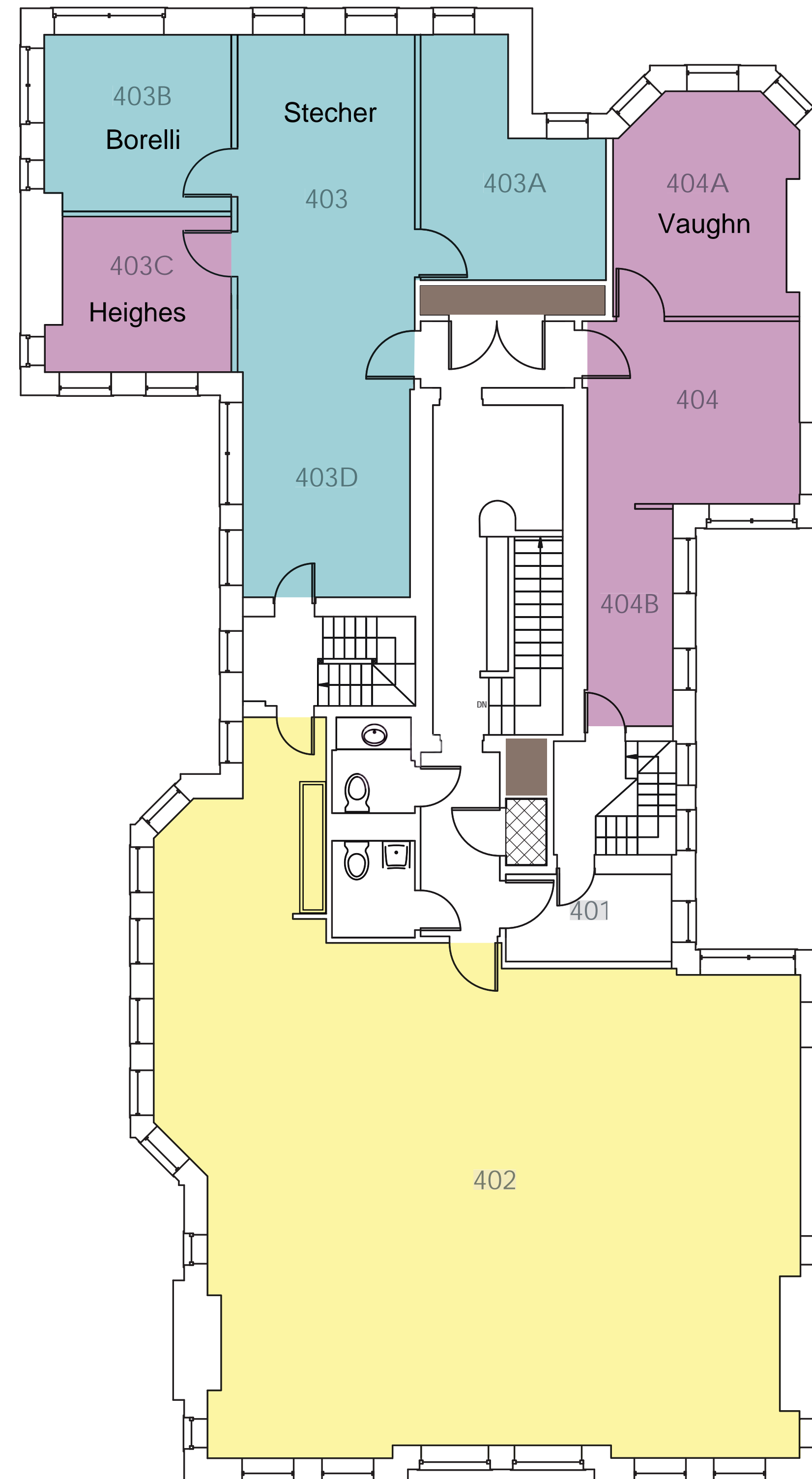
Cambridge Street



Sumner Road

THIRD FLOOR 7 Sumner Road

Cambridge Street



Sumner Road

FOURTH FLOOR 7 Sumner Road



Legend

- Teaching Spaces
- Harvard Design Magazine
- Publications
- Exhibitions
- Development/Alumni/ae Relations
- Mechanical
- Custodial
- Circulation

Appendix 12

GSD Faculty Appointments and Promotions 2006-2011			
	Position	Department	Start Date
New Senior Faculty Appointments			
Farshid Moussavi	Professor in Practice	Architecture	1/1/2006
Martin Bechthold	Professor	Architecture	7/1/2008
Sanford Kwinter*	Term Professor	Architecture	7/1/2009
B. Mack Scogin	Professor in Practice	Architecture	1/1/2009
Krzysztof Wondiczko*	Professor in Residence	Architecture	7/1/2010
Martha Schwartz	Professor in Practice	LA	7/1/2007
Ann Berrizbeitia	Professor	LA	7/1/2009
Charles Waldheim	Professor	LA	7/1/2009
Susan Fainstein*	Term Professor	UPD	7/1/2006
Rahul Mehrotra	Professor	UPD	7/1/2010
Neil Brenner	Professor	UPD	7/1/2011
<i>* these faculty hold non-tenured positions</i>			
New Junior Faculty Appointments			
Luis Ortega	Assistant Professor	Architecture	7/1/2006
John Hong	Adjunct Associate Professor	Architecture	7/1/2007
Timothy Hyde	Assistant Professor	Architecture	7/1/2007
Mariana Ibanez	Assistant Professor	Architecture	7/1/2007
Mark Mulligan	Adjunct Associate Professor	Architecture	7/1/2007
Erika Naginski	Associate Professor	Architecture	7/1/2007
Christoph Reinhart	Associate Professor	Architecture	7/1/2008
Danielle Etzler	Assistant Professor	Architecture	7/1/2009
Cameron Wu	Assistant Professor	Architecture	7/1/2010
Eric Howeler	Assistant Professor	Architecture	7/1/2011
George Liaropoulos-Legendre	Adjunct Associate Professor	Architecture	7/1/2011
Kiel Moe	Assistant Professor	Architecture	7/1/2011
Allen Sayegh	Adjunct Associate Professor	Architecture	7/1/2011
Elizabeth Whittaker	Adjunct Assistant Professor	Architecture	7/1/2011
Pierre Belanger	Associate Professor	LA	7/1/2009
Chris Reed	Adjunct Associate Professor	LA	7/1/2010
Peter Del Tredici	Adjunct Associate Professor	LA	7/1/2010
Jill Desimini	Assistant Professor	LA	7/1/2010
Jane Hutton	Assistant Professor	LA	7/1/2011
Judith Grant Long	Assistant Professor	UPD	7/1/2006
Brent Ryan	Assistant Professor	UPD	7/1/2007
Toni Griffin	Adjunct Associate Professor	UPD	7/1/2009
Felipe Correa	Assistant Professor	UPD	7/1/2008
Michael Hooper	Assistant Professor	UPD	7/1/2010
Joyce Klein Rosenthal	Assistant Professor	UPD	7/1/2010
Junior Faculty Promotions			
Michael Meredith	Assistant Professor to Associate Professor	Architecture	7/1/2007
Thomas Schroepfer	Assistant Professor to Associate Professor	Architecture	7/1/2009
Ingeborg Rocker	Assistant Professor to Associate Professor	Architecture	7/1/2011
Timothy Hyde	Assistant Professor to Associate Professor	Architecture	7/1/2011
Christian Werthmann	Assistant Professor to Associate Professor	LA	1/1/2008
Judith Grant Long	Assistant Professor to Associate Professor	UPD	7/1/2010
Other New Faculty Appointments			
Nader Tehrani	Adjunct Professor	Architecture	7/1/2006
Jonathan Levi	Adjunct Professor	Architecture	7/1/2007
Maryann Thompson	Adjunct Professor	Architecture	7/1/2007
Matthias Schuler	Adjunct Professor	Architecture	7/1/2008

PROFESSIONAL PRACTICE COURSE ARCHIVE

courses that fulfilled the non-western elective requirement for MArch I students

FALL 2006

5103: Public and Private Development	Jerold Kayden
5203F: Markets and Market Failures	Joseph Kalt
5204: Real Estate Development and Finance	Richard Peiser
5476: Housing Delivery System in the United States	James Stockard
7405: Leading the Design Firm	Spiro Pollalis, Brian Kenet
7406: Specifications	Mark Kalin
7411: From Concept to Implementation	Spiro Pollalis

MIT

MIT 11.345J: Entrepreneurship in Construction and Redevelopment

SPRING 2007

5203S: Markets and Market Failures	Jose Gomez-Ibanez
5206: Planning and Environmental Law	Brian Blaesser
5212: Field Studies in Real Estate, Planning, and Urban Design	Richard Peiser
5303: Advanced Real Estate Development and Finance	Mona Serageldin
5314: Strategic Planning and Local Development	Matthew Kiefer
5403M3: Public Approvals for Private and Development Projects	Bing Wang
5475: The Design of Housing in the United States	Leland Cott
7208: Legal Aspects of Design Practice	Carl Sapers
7222: The Bilbao Guggenheim Museum: Topics in Project Management	Spiro Pollalis, Luis Rodriguez

PROFESSIONAL PRACTICE COURSE ARCHIVE

courses that fulfilled the non-western elective requirement for MArch I students

FALL 2007

5203A: Markets and Market Failure	Joseph Kalt
5203B: Markets and Market Failure	Jose Gomez-Ibanez
5204: Real Estate Development and Finance	Richard Peiser
5480UPD: Negotiation and Conflict Resolution in Urban Planning and Design	James Kostaras
5476: Housing Delivery Systems in the United States	James Stockard
7213: International Design Practice: Business, Law, and Culture	Jay Wickersham
7406: Specifications	Mark Kalin
7408: A New Framework for Practice	Paul Nakazawa
7440: Leading the Design Firm	Brian Kenet

MIT

MIT 11.345J: Entrepreneurship in Construction and Redevelopment	John Kennedy
MIT 11.421J/15.426J: Real Estate Finance & Investments I: Micro-Level Fundamentals	David Geltner

SPRING 2008

5103: Public and Private Development	Jerold S. Kayden
5212: Field Studies in Real Estate, Planning & Urban Design ... Lee, MA	Richard Peiser, Bing Wang
5303: Advanced Real Estate Development and Finance	Richard Peiser
5314: Strategic Planning and Local Development	Mona Serageldin
5403M3: Public Approvals for Private Development Projects	Matthew Kiefer
5403M4: Design Typologies and Financial Operation for Urban Developments	Bing Wang
5475: The Design of Housing in the United States	Lee Cott
6328: In Search of the Engineer	Hanif Kara, Andreas Georgoulis
6331: Building Information Models	Michael Schroeder

PROFESSIONAL PRACTICE COURSE ARCHIVE

courses that fulfilled the non-western elective requirement for MArch I students

FALL 2008

5201: Urban Politics, Planning, and Development	Alan Altshuler
5203B: Markets and Market Failure	Jose Gomez-Ibanez
5204: Real Estate Development and Finance	Richard Peiser
5206: Planning and Environmental Law	Brian Blaesser
5476: Housing Delivery Systems in the United States	James Stockard
5484: Redevelopment Policy	Susan Fainstein
7213: International Design Practice: Business, Law, and Culture	Jay Wickersham
7406: Specifications	Mark Kalin
7408: A New Framework for Practice	Paul Nakazawa
7411: Design and Development: from Concept to Implementation	Spiro Pollalis, Andreas Georgoulis
7440: Leading the Design Firm	Brian Kenet, Spiro Pollalis
HBS 2166: Operations Strategy	Robert S. Huckman, Daniel C. Snow

SPRING 2009

5103: Public and Private Development	Jerold S. Kayden
5303: Advanced Real Estate Development and Finance	Frank Apeseche, Glenn Mueller
5403M3: Public Approvals for Private Development Projects	Matthew Kiefer
5403M4: Building Design and Planning Typologies	Bing Wang
5475: Design of Housing in the United States	Leland Cott
6328: In Search of Engineer	Andreas Georgoulis, Hanif Kara
6331: Building Information Models	Michael Schroeder
7307: Strategy, Sustainability, and Finance	John Macomber
7407: Managing the Design Project	Richard Jennings
HBS 1461: Real Estate Development, Design, and Construction	E. Kohn, J. Macomber, C. Gordon

PROFESSIONAL PRACTICE COURSE ARCHIVE

courses that fulfilled the non-western elective requirement for MArch I students

FALL 2009

3432: Global Redesign Project	Toshiko Mori
5201: Urban Politics, Planning, and Development	Alan Altshuler
5203A: Markets and Market Failure	Joseph Kalt
5203B: Markets and Market Failure	Jose Gomez-Ibanez
5204: Real Estate Development and Finance	Richard Peiser
5206: Planning and Environmental Law	Brian Blaesser
5476: Housing Delivery Systems in the United States	James Stockard
7407: Managing the Design Project	Richard Jennings
7408: A New Framework for Practice	Paul Nakazawa
7410: The Architect in History: The Evolution of Practice... Renaissance to the Present	Jay Wickersham
7411: Design and Development: from Concept to Implementation	Andreas Georgoulis, Spiro Pollalis
7440: Leading the Design Firm	A. Georgoulis, R. Jennings, B. Kenet

HBS

HBS2166: Operations Strategy	Robert S. Huckman, Daniel C. Snow
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SPRING 2010

5103: Public and Private Development	Brian W. Blaesser
5303: Advanced Real Estate Development and Finance	Frank Apeseche, Glen Mueller
5403M3: Building Design Typologies and Operational Principles of Real Estate	Bing Wang
5475: Design of Housing in the United States	Leland Cott
6328: In Search of Design through Engineers	Andreas Georgoulis, Hanif Kara
6331: Building Information Models	Michael Schroeder
7222: The Bilbao Guggenheim Museum: Topics in Project Management	Spiro Pollalis, Luis Rodriguez
7307: Strategy, Sustainability, and Finance	John Macomber
7409 (HBS 1461): Real Estate Development, Design, and Construction	J. Macomber, E. Kohn, C. Gordon
7413 Integrated Project Delivery	Richard Jennings

NON-WESTERN COURSE ARCHIVE

courses that fulfilled the non-western elective requirement for MArch I students

FALL 2006

1304: BOMBAY STUDIO: Urban Adjustments Negotiating the Kinetic and Stat	Rahul Mehrotra
1307: Migrating Coastlines: Emergent TranFORMations for Dubai, U.A.E.	Ali Rahim
1311: Steer a million people per day.. Beyoglu, Istanbul	Han Tumertekin
1402: Maximum Mumbai, Minimum Mumbai: Repositioning the Cotton Textile Girangaon...	Niall Kirkwood
1501: Tokyo's 'New Order' from a Local Perspective: Redevelopment of the Chuo-ku...	Mark Mulligan , Peter G. Rowe
4329: Urbanization in the East Asian Region	Peter G. Rowe

FAS

HAA 122x: Architecture of the Mediterranean World	Gulru Necipolgu-Kafadar, Alina A. Payne
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MIT

4.614: Religious Architecture and Islamic Cultures	Nasser Rabbat
4.616: Historiography of Islamic Architecture	Nasser Rabbat

SPRING 2007

1315: Nanjing	Preston Scott Cohen
1320: Reframing of Open Public Space in Tokyo	Yoshiharu Tsukamoto
1322: MAKINAMEDINA: Reconfiguring the Relationship Between Geography	A. Hashim Sarkis, Aziza Chaouni
4344: Modern Architecture and Urbanism in China	Peter Rowe
6311: Innovative Constructions: cases in modern Japan	Mark Mulligan

MIT

4.614: Religious Architecture and Islamic Cultures	Nasser Rabbat
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NON-WESTERN COURSE ARCHIVE

courses that fulfilled the non-western elective requirement for MArch I students

FALL 2007

1305: Kanchogai Street	Ryue Nishizawa, Florian Idenburg
1309: Tokyo's Book City	Andrea Leers
1402: Mumbai Margins: Rethinking the Island City	Niall Kirkwood, Nazneen Cooper
4329: Urbanization in the East Region	Peter G. Rowe
4405: "Other Modernities": Architecture and National Identity in Global Context	Sibel Bozdogan
6311: Innovative Constructions: Cases in Modern Japan	Mark Mulligan
9206UPD: Resurfacing (Revisiting) The Grid as an Organizational Device for the Design...	Joan Busquets, Felipe Correa

MIT

4.628: Special Problems in Islamic and Non Western Architecture

SPRING 2008

1316: Experiments in Tessellation: Airport Terminal	Farshid Moussavi, Daniel Lopez-Perez
4344: Modern Architecture and Urbanism in China	Peter G. Rowe
5314: Strategic Planning and Local Development	Mona Serageldin
6311: Innovative Constructions: Cases in Modern Japan	Mark Mulligan
6445: Green Infrastructure in the Non-formal City	Christian Werthmann

NON-WESTERN COURSE ARCHIVE

courses that fulfilled the non-western elective requirement for MArch I students

FALL 2008

1401: MUMBAI METROPOLITAN: Adapting the Airport Lands, Mumbai, India Niall Kirkwood, Nazneen Cooper
4329: Urbanization in the East Asian Region Peter G. Rowe
4346: Visions of the Japanese House Ken Tadashi Oshima

FAS

HAA 285v. The Complete Taj Mahal Ebba M. Koch

MIT

4.662: Religious Architecture and Islamic Cultures Nasser Rabbat
4.619: Historiography of Islamic Architecture Nasser Rabbat
4.629: Special Problems in Islamic and Nonwestern Architecture-Mughal Landscapes... Jim Wescoat

SPRING 2009

1316: The Al Qattara Oasis in Al Ain "A" Jorge Silvetti
1318: Stubborn Urbanism Preston Scott Cohen
1508: The Al Qattara Oasis in Al Ain "B" Felipe Correa
4344: Modern Architecture and Urbanism in China Peter G. Rowe
5324: Villages in Development in the Pearl River Delta Marco Cenzatti, Margaret Crawford
6311: Innovative Constructions Mark Mulligan
6334: A New Urban Enterprise Nazneen Cooper, Niall Kirkwood

FAS

HAA 12m: Monuments and Cities of the Islamic World: An Introduction David J. Roxburgh

NON-WESTERN COURSE ARCHIVE

courses that fulfilled the non-western elective requirement for MArch I students

FALL 2009

1302: Toward an Industrial Ecology for New Caofeidian	Nanako Umemoto
1303: Global Redesign Project I: Le Kinkeliba	Toshiko Mori
1304: TB Clinics and Research Laboratories in Ethiopia	Peter Rose
1307: Reticulated Form II: Airport Terminus in Bucharest	Joseph MacDonald
1310/1502: The New Gate: Public Space, Infrastructure, & the Re-Orientation of ... Istanbul	A. Hashim Sarkis
4329: Urbanization in the East Asian Region	Peter G. Rowe
4405: Modern Architecture and National Identity: Ottoman/Turkish Case in Global Context	Sibel Bozdogan
9206LA03: Mumbai Matter: Assembling Urban India	Nazneen Cooper, Niall Kirkwood

MIT

4.614 : Religious Architecture and Islamic Cultures Rabbat
4.621: Orientalism and Representation Rabbat
4.623: Mughal Landscapes: History, Heritage and Design Wescoat

SPRING 2010

1316: Foggy Architecture	Scott Cohen
1320: Traces	Martin Bechthold, Allen Sayegh
4344: Modern Architecture and Urbanism in China	Peter Rowe
6311: Innovative Constructions	Mark Mulligan

NON-WESTERN COURSE ARCHIVE

courses that fulfilled the non-western elective requirement for MArch I students

FALL 2010

1302: Global Redesign Project 2

Toshiko Mori

1303: Dense + Green

Thomas Schroepfer

1307: Geography of a Bridge

Hashim Sarkis

1311: Architecture, in Extremes

Sahel Al Hiyari

4329: Urbanization in the East Asian Region

Peter G. Rowe

4405: Istanbul: From Imperial Capital to Global City

Sibel Bozdogan

FAS

HAA 2882 Ito Jakuchu and Japanese Nature Painting

Yukio Lippit

MIT

4.236J/11.463J Structuring Low-Income Housing Projects in Developing Countries

Reinhard Goethert

4.680: Advanced Studies in the HTC of Art and Architecture – Landscape Research...

James Wescoat

SPRING 2011

1314: New Metabolism

Hiromi Hosoya

1315: Type and Typography

Preston Scott Cohen

1406/1513: Peri-Urban Development

Yu, Mulligan, Rowe, Ervin

1508: Extreme Urbanism: Reimagining Mumbai's Back bay

Rahul Mehrotra

4344: Modern Architecture and Urbanism in China

Peter Rowe

6311: Innovative Construction in Japan

Mark Mulligan

9107: Baku, Oil City

Eve Blau

FAS

Anthro 1742 Housing and Heritage: Conflicts Over Urban Space

HAA 229p Word and Image in Persian Painting

David J. Roxburgh

HIST 1630 Rising China?

MIT

4.623 Mughal Landscapes: History, Heritage & Design

James Wescoat

ADVANCED HISTORY COURSE ARCHIVE

courses that fulfilled the advanced history elective requirement for MArch I students

FALL 2006

3306: Contemporary Architecture and Cultural Discourse	Jeffrey Kipnis
3419: Beyond the Harvard Box: The early works of Barnes, Franzen, Johanse, Rudolph	Michael Meredith
3475: The city of Leisure and Tourism	Virginie Lefebvre
4105: Studies of the Built North American Environment: 1580 to the Present	John R. Stilgoe
4323: Constructing Vision	A. Hashim Sarkis
4329: Urbanization in the East Asian Region	Peter G. Rowe
4355: Architecture, Science and Technology, XVIIIth Century-Present	Antoine Picon
4408: Situating the Modern	Sibel Bozdogan
4409: Paris and the Idea of the Modern City	Neil Levine, Antoine Picon
4413: Outside the Canon: revisionist Readings of Aalto	Kari Jormakka
5101: Histories and Theories of Urban Interventions	Margaret Crawford

FAS

CLASARCH 246: Topography and Monuments of Athens	Betsey Robinson
HAA 122x: Architecture of the Mediterranean World	Gulru Necipolgu-Kafadar, Alina A. Payne
HAA 223x: Islamic Palaces, Pavilions and Gardens	Gulru Necipoglu-Kafadar
HAA 230: Hadrian's Villa: Tivoli and Beyond	Rabun Taylor

MIT

4.614: Religious Architecture and Islamic Culture	Nasser Rabbat
4.619: Historiography of Islamic Architecture	Nasser Rabbat
4.645: Selected Topics in Architecture: 1750 to the Present	Arindam Dutta
4.662: Advanced Study in the History of Urban Form	David Friedman
4.692: Special Studies in the History, Theory, and Criticism of Art	Erika Naginski

SPRING 2007

3211: On Contemporary Architecture	Rafael Moneo
3304M4: Carefully Reading Koolhaas II (2 units)	George Baird
3305: The Architectural Imaginary: Experimental Architecture of the 1970s	K. Michael Hays
3305M3: The History of the Contemporary (2 units)	Sylvia Lavin
3423: Architecture and the Market	Irene Scalbert
4303: Modernization in the Visual United States Environment, 1890-2035	John R. Stilgoe
4317: History of Modern Gardens and Public Landscapes: 1800 to the present	Mark Laird
4320: Of Rocks, Trails and Televisions: The Democratic Monument in America	Richard Sommer
4321: Rome and St. Peter's	Christine Smith
4337: Digital Culture, Space and Society	Antoine Picon
4339: Sites of Conflict + Innovation: At the Center of the New Europe	Eve Blau
4344: Modern Architecture and Urbanism in China	Peter G. Rowe
4416: Artifice	Timothy Hyde

FAS

HAA 188j: Japanese Architecture	Yukio Lippit
HAA 271m: Architecture, Display, and Mass Culture in 19th/20 th Century	Alina A. Payne

ADVANCED HISTORY COURSE ARCHIVE

courses that fulfilled the advanced history elective requirement for MArch I students

FALL 2007

3306: Contemporary Architecture and Cultural Discourse	Jeffrey Kipnis
3325: Decorating Diversions	Monica Ponce de Leon
3425: Designing the Underneath: Architecture and/as Infrastructure	Bill Rankin
4105: Studies of the Built North American Environment: 1580 to the Present	John R. Stilgoe
4329: Urbanization in the East Asian Region	Peter G. Rowe
4355: Architecture, Science and Technology, XVIIIth Century-Present	Antoine Picon
4405: "Other Modernities": Architecture and National Identity in Global Context	Sibel Bozdogan
4417: Space and Subjectivity in the Modern Period	Antoine Picon

FAS

HAA 153p: Le Corbusier and the Invention of Modernism	Alina A. Payne
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MIT

4.609 Seminar in the History of Art and Architecture	
4.635 Renaissance Architecture	David Friedman
4.638 Advanced Study in Renaissance Architecture	David Friedman
4.645: Selected Topics in Architecture: 1750 to the Present	Arindam Dutta
4.654–4.656 Advanced Study in Modern Architecture	S. Anderson
4.665 Contemporary Architecture and Critical Debate	S. Anderson

SPRING 2008

3305: The Architectural Imaginary: Experimental Architecture in the 1970s	K. Michael Hays
3211: On Contemporary Architecture	Rafael Moneo
4132: Frames of Mind: Approaches to Film Theory	Giuliana Bruno
4303: Modernization in the Visual United States Environment, 1890-2035	John R. Stilgoe
4305: Adventure and Fantasy Simulation, 1871-2036: Seminar	John R. Stilgoe
4317: History of Landscape Architecture II	Mark Laird
4321: Rome and St. Peter's	Christine Smith
4344: Modern Architecture and Urbanism in China	Peter G. Rowe
4354: Visual Fabrics: Film, Fashion and Material Culture	Giuliana Bruno
4401: Transparency	Eve Blau
4416: Topics in Postwar Architectural History and Theory	Timothy Hyde
4443: Technological Revolutions in Landscape	Michael Lee
4489: Technology, Cities and Urban Form	Thomas J. Campanella

FAS

HAA 153p: Le Corbusier and the Invention of Modernism	Alina A. Payne
HAA 51p: Renaissance Architecture and the Rise of Classicism	Alina A. Payne

ADVANCED HISTORY COURSE ARCHIVE

courses that fulfilled the advanced history elective requirement for MArch I students

FALL 2008

3316: Architecture and Art: From Robert Smithson to the emerging 'New Synthesis'	Sanford Kwinter
4105: Studies of the Built North American Environment: 1580 to the Present	John R. Stilgoe
4109: History of Landscape Architecture	Michael Lee
4304: North American Seacoasts and Landscapes: Discovery Period to the Present	John R. Stilgoe
4329: Urbanization in the East Asian Region	Peter G. Rowe
4345: Race, Inequality, and Cities	Thomas Sugrue
4346: Visions of the Japanese House	Ken Tadashi Oshima
4347: The Ecological Tradition: The Body and/in the City	Alison Hirsch
4351: Film Architectures: Seminar Course	Giuliana Bruno
4353: Imagining the City: Literature, Film, and the Arts	Giuliana Bruno
4358: Authority and Invention: Art and Architecture in Western Europe, 950-1250	Christine Smith
4420: The Ruin Aesthetic: Episodes in the History of an Architectural Idea	Erika Naginski
4501: Proseminar in History, Theory and Urban Design	Margaret Crawford, K. Michael Hays
5101A: Histories and Theories of Urban Interventions	Margaret Crawford
FAS	
HAA 285v. The Complete Taj Mahal	Ebba M. Koch
MIT	
4.662 Religious Architecture and Islamic Cultures	Nasser Rabbat
4.619 Historiography of Islamic Architecture	Nasser Rabbat
4.629 Special Problems in Islamic and Nonwestern Architecture	Jim Wescoat

ADVANCED HISTORY COURSE ARCHIVE

courses that fulfilled the advanced history elective requirement for MArch I students

SPRING 2009

3211: Behind Today's Architectural Trends	Rafael Moneo
3305: The Architectural Imaginary: Experimental Architecture of the 1970s	K. Michael Hays
3428: Digital Culture: Architecture and Cities	Antoine Picon
4303: Modernization in the Visual United States Environment, 1890-2035	John R. Stilgoe
4305: Adventure and Fantasy Simulation, 1871-2036: Seminar	John R. Stilgoe
4317: History of Modern Gardens and Public Landscapes: 1700 to the present	Mark Laird
4321: Rome and St. Peter's	Christine Smith
4344: Modern Architecture and Urbanism in China	Peter G. Rowe
4347: The Ecological Tradition: The Body and/in the City	Alison Hirsch
4348: Rethinking Suburban History	Margaret Crawford
4409: Paris and the Idea of the Modern City	Neil Levine, Antoine Picon
4419: Hub of the Universe: Boston in the Gilded Age	Christine Smith
4421: Versailles to the Visionaries	Erika Naginski
4422: The Piranesi Effect	Erika Naginski
4442: The History of Horticulture in Landscape Architecture	Mark Laird
FAS	
HAA 1: Landmarks of World Art & Architecture	Neil Levine
HAA 12m: Monuments and Cities of the Islamic World: An Introduction	David J. Roxburgh
HAA 170g: The Grid	Neil Levine
HAA 194e: World Fairs: Art and Exposition	Suzanne P. Blier

ADVANCED HISTORY COURSE ARCHIVE

courses that fulfilled the advanced history elective requirement for MArch I students

FALL 2009

3434: Architecture and Art: From Minimalism to Neuro-phenomenolgy	Sanford Kwinter
4105: Studies of the Built North American Environment: 1580 to the Present	John R. Stilgoe
4109: History of Landscape Architecture I	Dorothee Imbert
4130: Scale: City, Object, Field	Eve Blau
4304: North American Seacoasts and Landscapes: Discovery Period to the Present	John R. Stilgoe
4329: Urbanization in the East Asian Region	Peter G. Rowe
4353: Imagining the City: Literature, Film, and the Arts	Giuliana Bruno
4358: Authority and Invention: Art and Architecture in Western Europe, 950-1250	Christine Smith
4405: Modern Architecture and National Identity: Ottoman/Turkish Case...	Sibel Bozdogan
4423: The Shapes of Utopia	Erika Naginski
4424: Fifteen Things (a secret history of Italian design)	Jeffrey Schnapp
4501: Proseminar in History, Theory and Urban Design	K. Michael Hays, Timothy Hyde
5101: Histories and Theories of Urban Interventions	Susan Fainstein

FAS

HAA 222m. Architecture in the Early Modern Mediterranean World...	Gülru Necipoglu-Kafadar, Alina A. Payne
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MIT

4.607: Thinking About Architecture: In History and At Present	Jarzombek
4.614 : Religious Architecture and Islamic Cultures	Rabbat
4.621: Orientalism and Representation	Rabbat
4.623: Mughal Landscapes: History, Heritage and Design	Wescoat
4.645: Selected Topics in Architecture—1750 to the Present	Dutta
4.662: Advanced Study in the History of Urban Form	Friedman
4.693: Special Studies in the History, Theory and Criticism of Art—Ornament:...	Smentek

ADVANCED HISTORY COURSE ARCHIVE

courses that fulfilled the advanced history elective requirement for MArch I students

SPRING 2010

3211: Behind Today's Architectural Trends	Rafael Moneo
3305: The Architectural Imaginary: Experimental Architecture of the 1970s	K. Michael Hays
3426: Light and Space: Experiments in Transforming the Photosphere	Sanford Kwinter
4132: Frames of Mind: Approaches to Film Theory	Giuliana Bruno
4303: Modernization in the Visual United States Environment, 1890-2035	John R. Stilgoe
4305: Adventure and Fantasy Simulation, 1871-2036: Seminar	John R. Stilgoe
4317: History of Modern Gardens and Public Landscapes: 1700 to the present	Mark Laird
4321: Rome and St. Peter's	Christine Smith
4344: Modern Architecture and Urbanism in China	Peter G. Rowe
4347: The Ecological Tradition: The Body and/in the City	Alison Hirsch
4354: Visual Fabrics: Film, Fashion and material Culture	Giuliana Bruno
4355: Architecture, Science and Technology, XVIIIth Century – Present	Antoine Picon
4401: Transparency	Eve Blau
4419: Hub of the Universe: Boston in the Guilded Age	Christine Smith
4425: Histories of the Future	Timothy Hyde
4426: The Spectacle Factory	Jeffrey Schnapp
4427: Adolf Loos, Our Contemporary	Yehuda Safran
4473: Architecture or Poverty...	A. Hashim Sarkis

ADVANCED HISTORY COURSE ARCHIVE

courses that fulfilled the advanced history elective requirement for MArch I students

FALL 2010

3434: Architecture and Art: From Minimalism to Neuro-phenomenology	Sanford Kwinter
3436: Critical Preservations Practices	Michael Hays
3496: The Moment of the Monument	Jeffrey Schnapp
4105: Studies of the Built North American Environment: 1580 to the Present	John R. Stilgoe
4304: North American Seacoasts and Landscapes: Discovery Period to the Present	John R. Stilgoe
4329: Urbanization in the East Asian Region	Peter G. Rowe
4358: Authority and Invention: Art and Architecture in Western Europe, 950-1250	Christine Smith
4405: Istanbul: From Imperial Capital to Global City	Sibel Bozdogan
4428: Visionary Architecture	Erika Naginski
4501: Proseminar in History, Theory and Urban Design	Eve Blau, Timothy Hyde
5101: Histories and Theories of Urban Interventions	Susan Fainstein
7410: The Architect in History: The Evolution of Practice... Renaissance to the Present	Jay Wickersham

FAS

HAA 239x Greek Myths on Roman Sarcophagi	Ruth Bielfeldt
HAA 242. Issues of Interpretation in Medieval Art	Jeffrey F. Hamburger
HAA 271k. Law and the Human: The Challenge of Carl Schmitt...	Joseph Koerner, Noah R. Feldman
HAA 272z. Post WW II European Art (Part II)	Benjamin Buchloh
HAA 288s. Ito Jakuchu and Japanese Nature Painting	Yukio Lippit

MIT

4.640: Advanced Study in Critical Theory of Architecture	Arindam Dutta
4.656: Advanced Study in Modern Architecture	Ana Miljacki

ADVANCED HISTORY COURSE ARCHIVE

courses that fulfilled the advanced history elective requirement for MArch I students

SPRING 2011

3331: Conversations on Architecture of the Second Half of the XXth Century	Rafael Moneo
3421: New Geographies: Imagining a City-World Beyond Cosmopolis	Hashim Sarkis
3426: Light and Space: Experiments in Transforming the Photosphere	Sanford Kwinter
3497: Critical History: Curating Images, Objects, Media	Peter Galison, Jeffrey Schnapp
4303: Modernization in the Visual United States Environment, 1890-2035	John R. Stilgoe
4305: Adventure and Fantasy Simulation, 1871-2036: Seminar	John R. Stilgoe
4321: Rome and St. Peter's	Christine Smith
4323: Constructing Vision: A History and Theory of 'Visual Constructs' in Architecture	Hashim Sarkis
4350: Michaelangelo: Precedents, Innovations, Influence	Christine Smith
4418: Beginnings of Architecture	K. Michael Hays, Antoine Picon
4423: The Shapes of Utopies	Erika Naginski
4429: The Personifications of Modernism: Philip Johnson	Timothy Hyde
4344: Modern Architecture and Urbanism in China	Peter G. Rowe

FAS

HAA 226s Ottoman Architectural Culture and Urbanism in the Age of Sinan	Gulru Necipoglu-Kafadar
HAA 229p Word and Image in Persian Painting	David J. Roxburgh
HAA 240r Topics in Byzantine Art: Materiality	Ioli Kalavrezou
HAA 245x Jan van Eyck's Renaissance	Hugo van der Velden
HAA 271p Reading, Drawing, Painting Architecture	Alina A. Payne
HAA 271x The Origins of Modernity: The "New" 18 th Century	Ewa Lajer-Burcharth
HAA 275w The Thing	Jennifer L. Roberts
HAA 291r Topics in Pre-Columbian and Colonial Art	Thomas B.F. Cummins

Appendix 16

Platform Committee Heads

History and Theory – Antoine Picon

Media – Krzysztof Wodiczko

Professional Practice – Jonathan Levi

Technology – Martin Bechthold

Guidelines for Applicants to Master In Architecture Advanced Placement (MArch I AP)

Outlined below are admission and degree requirements for persons applying to the Master in Architecture degree program with advanced placement (2 ½ year program). For further information, please see the program descriptions at www.gsd.harvard.edu.

Admissions Requirements

Applicants for advanced placement in the MArch I program are considered separately from those who apply for the MArch I program without advanced placement (3 ½ year program). Applicants who apply for advanced placement may be referred to the admissions committee for the 3 ½ year MArch I program if it is determined that they are ineligible for advanced placement.

In order to be eligible for advanced placement, applicants must have completed the following:

- Four-year Bachelor of Arts or Bachelor of Science degree in architecture or environmental design in an approved program;
- A minimum of three advanced architectural design studios;
- One semester of a college-level course in calculus or higher mathematics (one year preferred; grade of B or above achieved);
- One semester of a college-level course in physics (one year preferred; grade of B or above

achieved);

- Two semesters of college-level survey courses in the history of architecture, covering the ancient to modern periods (grade of B or above achieved);
- Undergraduate course work analogous to the first year of study in the graduate program, including aforementioned architecture design studios and introductory courses in visual studies, building technology, design theory, and computer-aided design.

Portfolio Requirements

Particular importance is placed on portfolio review in the case of MArch I AP applicants. The documentation of design projects is the best indication of undergraduate design curriculum and its value towards advanced placement in the graduate program. Portfolios should include projects from the three prerequisite design studios, with an emphasis on complete documentation in two-dimensional drawings (site and building plans, sections, elevations) and three-dimensional views. Project documentation should indicate fluency in a variety of representational media, including hand-drawings, computer renderings, and models. Revealing conceptual clarity at each scale of a design proposal is an important goal of the graphic layout. Each project should include the course number, the date of the project, and the

instructor's name.

Projects selected for inclusion in the portfolio should demonstrate the applicant's:

- Ability to conceive and manipulate complete spatial relationships in an architectural setting;
- Understanding of spatial sequence, manipulating movement through architectural space;
- Experience in resolving a variety of difficult site conditions, including at least one project in an urban context;
- Ability to work with complex programmatic requirements;
- Engagement with building materials and technology as an integral part of design exploration.

Degree Requirements

Advanced placement students:

- Begin in the third semester of the MArch I program, thus reducing their required length of study to two-and-a-half years;
- Normally enroll in the third through seventh semester courses and studios required in the MArch I program as listed in the GSD Catalog;
- Are required to complete 100 units of study;
- Must submit, at the time of their acceptance, materials verifying completion of the courses equivalent to those required during the first year of the MArch I program;

- Must take as electives any courses from the first year of the MArch I program that they have not satisfactorily completed in prior course work;
- May not have to take some of the required courses from the second year of the MArch I program, pending review of their prior studies.

**Harvard Graduate School of Design
Department of Architecture**

**Supplement to Architecture Program Report for 2012 NAAB
Visit for Continuing Accreditation**

Submitted to: The National Architectural Accrediting Board Visiting Team
Date: 1 April 2012

1.1.3 Responses to the Five Perspectives

A. *Architectural Education and the Academic Community*

The Graduate School of Design is committed to maintaining and enhancing its reputation for leadership in the field of architectural education. A reputation for leadership depends not only on producing graduates who will go on to lead successful careers within the architectural profession, but also on establishing relationships with broader academic communities that enhance understanding of modes of intellectual inquiry unique to design pedagogy, and by extension, lead to enhanced respect for the role that architects play in society. Thanks to its situation as the largest and most visible program within the Graduate School of Design, the Master in Architecture degree program is well positioned to make unique and significant contributions to Harvard University and to the broader academic community.

Such contributions to the academic community by members of the M.Arch program's faculty and students may take many forms – comprising for example scholarship, pedagogy, and community engagement and service – and may have a variety of impacts over the long and short term. Publications represent a very clear measure of scholarly contribution by our faculty. Books, peer-reviewed journal essays, and publication of design work and criticism in professional journals have established national and international reputations for many of our tenured and non-tenured faculty. Full publication lists are included in faculty CVs in this report's Appendix 2; updated lists for spring 2012 are seen on individual faculty webpages (see architecture.gsd.harvard.edu/faculty). Faculty members also deliver public lectures on a regular basis at the GSD and other venues within Harvard University, at other schools of architecture, and at ACSA conferences (in academic year 2011-12, Professors Scott Cohen, Eric Howeler, and Danielle Etzler have all given talks at ACSA events).

Interdisciplinary collaboration is key to the architecture program's engagement with a broader academic community, and the GSD provides an excellent setting for such collaborations – beginning with interdepartmental initiatives in both curricular and extracurricular settings. For example, several options studios each semester are co-sponsored by the Department of Architecture and the Departments of Urban Planning and Design and Landscape Architecture, drawing students from different programs together to work on design challenges in collaborative teams. In the spring semester 2012, four studios are currently co-sponsored with UPD (Silvetti-Nakazawa, Abalos, Correa, Tagliabue) and one with Landscape Architecture (Aranda). In addition, a handful of non-studio elective courses each term are interdepartmental; in spring 2012, these courses include GSD-2322 "Intermediate Landscape as Digital Media" (Mah), GSD-5493 "The Archaeology of Civic Sustenance" (Georgoulas), GSD-7440 "Leading the Design Firm" (Kenet-Jennings), and GSD-9690 "Discourse and Methods" (Hyde). Interdisciplinary research, involving academic collaborators both within and outside of the GSD, takes several forms at the GSD and encompasses the efforts of both senior and junior architecture faculty, doctoral students, and advanced Master's degree candidates. The Research Advancement Initiative (RAI), chaired by Professor Hashim Sarkis, was created with the goal of integrating professional education with the academic pursuits of a research university and addressing emerging topics of common interest. In the spirit of promoting interdisciplinary research, this initiative also seeks to nurture opportunities for collaborative work within the GSD and between the GSD and other units at Harvard and elsewhere in the world (details of the GSD's Research Centers and Research Labs are described under the headings "Research Centers" and "Curricular Opportunities for Student Research and Travel" in section 1.2.1 Human Resources and Human Resource Development).

Harvard University encourages innovative approaches to pedagogy among faculty members in each of its graduate and professional schools and in the Faculty of Arts and Sciences, and the GSD has taken an active role across the University in promoting design studio pedagogy as a model for teaching students synthetic problem solving skills. Members of the Architecture Department are regular participants (and speakers) in a university-wide program called "Talking about Teaching", in which faculty from different schools and disciplines experience one another's teaching methods in

rotating seminars held in different classroom environments. Since 2009, Associate Dean for Academic Affairs Michael Hays has led the GSD's efforts to assist faculty in Harvard's Faculty of Arts and Sciences in developing an undergraduate liberal arts major in architecture at Harvard College; this new program will accept its first concentrators during academic year 2012-13. In these and other ways, the GSD's Department of Architecture affirms its strong commitment to a broad-based liberal arts education as the basis for professional education and future leadership.

Other kinds of engagements between our Master's program and the Harvard community include the involvement of students and faculty in university-wide initiatives related to the campus environment itself. Dean Mostafavi plays a leading role in Harvard's Arts Task Force (created by President Drew Faust in 2007) and has positioned GSD faculty to become active participants in campus expansion planning and in creative programming studies for outdoor space on campus. Further examples of community engagement and service are detailed below under the heading "Architectural Education and the Public Good".

B. Architectural Education and Students

The Graduate School of Design is fortunate to count among each class entering its Master in Architecture Degree Program some of the most accomplished, creative, and independent-thinking students to be found in graduate programs anywhere today. Drawing from a pool of applicants from across the US and internationally, the Department of Architecture asks its faculty, individually and collectively, to devote hundreds of hours each winter to reviewing admissions files and portfolios submitted by students from a wide range of academic, ethnic, and geographic backgrounds, in order to achieve in each matriculating class a diverse and unique group of individuals. There seems to be no better way to prepare today's architecture students to thrive in a globalizing world than to impress on them respect for such individuals and their diverse points of view as they work together, collaboratively and in parallel, with other students whose prior education and life experiences have shaped different intellectual and moral frameworks for viewing the world. At the same time, within this environment of exchange and debate, it is even more important that faculty be careful to nurture and strengthen individual voices among all the students. A key feature of our pedagogy is maintaining a high teacher-to-student ratio in the design studio – typically between one studio instructor is responsible for 10-11 students (and never more than 13) – so that students can count on frequent one-on-one meetings with their instructors each week (typically three times a week during the program's first year, afterwards twice a week) to discuss the progress of design projects as well as the overall advancement of their design skills. At the urging of the previous NAAB Team that visited the School in 2006, the GSD has developed and published a Studio Culture Policy that aims to establish, based on clear guidelines, an optimal learning environment based on an atmosphere of mutual respect between students and faculty, and among the students themselves.

Leadership skills are an essential component of design education, and the M.Arch program emphasizes this across its curriculum in various ways. Having design projects evaluated and discussed in a public jury setting train students to develop and refine both their graphic presentation and their public speaking skills, with high value placed on conceptual clarity in argumentation, responsiveness to criticism, composure and self-awareness. In the classroom, many instructors employ the case study method and role-playing to induce students to think both analytically and intuitively about technical and professional dilemmas they may face in practice. Outside the classroom, GSD architecture students are encouraged to establish and/or become active in extracurricular design initiatives, entrepreneurial ventures, and social action groups that may help them define and test out future professional interests. The School sponsors and in many cases gives financial support to a wide range of student organizations (a full listing of student organizations is found in section 1.2.1 Human Resources and Human Resource Development, under "Student Organizations").

C. Architectural Education and the Regulatory Environment

While much of the GSD's pedagogical emphasis lies in the encouragement of design research, innovation, and speculative work, the Department of Architecture is equally committed to ensuring that students graduating from its professional degree program in architecture are well equipped for the (potentially more pragmatic) next phase of their design careers, including internship in architectural firms, studying for professional registration exams, and licensure within the context of international, national, and state regulatory environments. It is safe to say that helping students understand the kinds of opportunities and responsibilities they will encounter in the years after graduation, and how they can use these experiences to shape rewarding future careers, is an underlying concern of every faculty member, administrator, and staff member associated with the M.Arch Degree Program. More specifically, however, the GSD's Office of Student Services has several staff dedicated to Career Services. Career Services hosts numerous professionally oriented events – most notably two Career Fairs – over the course of each academic year. In addition, the Director of Career Services, Meryl Golden, also serves as the School's IDP Coordinator. In this capacity, she organizes one or two general meetings with students each year, to familiarize them with NCARB's Intern Development Program; helps students get enrolled in IDP and facilitates correspondence between NCARB and the GSD Registrar; and meets individually with students about their progress in IDP and the choices they may make about summer internships. (Further information about Career Services provided for M.Arch students at the GSD is provided in section 1.2.1 Human Resources and Human Resource Development under the heading "Career Services for Architecture Students"). The Intern Development Program itself is the explicit focus of a paired lecture and case study assignment during one week of the required course GSD-7212 "Issues in Architectural Practice and Ethics", so that students are encouraged to learn about IDP and to apply critical thought to career choices it may entail in a manner consistent with other aspects of professional practice presented in the course. Our program's attention to preparing the next generation of practitioners for licensure is substantiated by Architectural Registration Exam pass rates that have consistently ranked among the very highest in the nation for NAAB-accredited programs (a link to current ARE pass rates is found in section 2.4.5 ARE Pass Rates).

D. Architectural Education and the Profession

Awareness of the world of professional practice outside academia – where design ideas are tested and debated by means of real planning proposals and real projects, affecting the lives of diverse populations – is essential for the mature development of a budding architect. Students enrolled in the Master in Architecture program have numerous and prolonged opportunities during their time at the GSD to interact with practicing architects (including many faculty members) as well as with city planners, landscape architects, engineers and other design consultants, artists, construction managers, photographers, filmmakers, writers, journalists, and many others whose work relates to and enhances the practice of architecture. Each semester the Graduate School of Design hosts a rich array of lectures, conferences, symposia, executive education courses, alumni gatherings, and other events that bring to the GSD (and hence, into students' awareness) leaders and innovators working in diverse arenas of the design professions. (A current listing of upcoming events planned for the duration of spring semester 2012 may be found online at <http://www.gsd.harvard.edu/#/events/index.html>). Exposure to visiting faculty – many of them running high-profile practices in the US and/or abroad – brings renewed excitement to our program, introducing fresh ways of thinking about professional practice in different domestic and international contexts. The Loeb Fellowship Program brings nine mid-career design professionals to the GSD each year, and many Fellows choose to associate themselves with studios, research labs, or other curricular and extracurricular initiatives where they can have contact with faculty and advise students on their professional paths.

The Department of Architecture maintains strong ties not only to internationally renowned architects and practices around the globe, but also to a close-knit community of local practitioners – many of them GSD graduates – by means of hosting alumni events and executive education courses, and by

playing an active role in the Boston Society of Architects (the BSA is New England's largest AIA chapter), including holding a seat on the BSA Board of Directors.

Students in the M.Arch program must complete one required course in professional practice as well as one additional professional practice distributional elective – meaning they may choose among many elective options, as approved by the Program Director (see Appendix 13 for a list of approved Professional Practice electives). The required course, GSD-7212 “Issues in Architectural Practice and Ethics”, relies on the case study method (developed at the Harvard Business School and now employed at many other professional schools) and role-playing to expose students to a full range of ethical and professional dilemmas they may later face in practice. In spring 2011, Dean Mostafavi appointed a school-wide *ad hoc* committee, headed by Adjunct Professor of Architecture Jonathan Levi, to study the problem of professional practice education within the context of rapid changes taking place in the design professions – architecture, landscape architecture, urban planning and design. A draft report with recommendations for curricular reform is currently being prepared, likely affecting not only the content of required courses and electives but also modes of production in the design studio.

Among the most pressing challenges before the architectural profession today are those associated with environmental and social sustainability. Our profession's collective understanding of sustainability issues has matured greatly in the past decade, yet many challenges lie ahead for both practitioners (who tend to focus necessarily on regulatory and economic aspects of sustainability) and students (who tend to focus more on abstract and speculative aspects). The primary focus of sustainability pedagogy within the GSD's M.Arch core curriculum has been based on scientific analysis of building performance, as permitted by new designer-friendly software applications that are actively under development here and at other research universities. Professor Christoph Reinhart, who taught in the M.Arch program until January 2012, developed DIVA (a widely available Rhino plug-in application that allows architects to quickly and accurately assess daylighting strategies) using grants obtained during his time at Harvard. In 2008, a generous grant made by Paul and Joan Zofnass created a new research center at the GSD, the Zofnass Program for Sustainable Infrastructure, headed by Architecture Faculty members Professor Spiro Pollalis, Research Professor Daniel Schodek, and Andreas Georgoulas (further information on the Zofnass Program is found in section 1.2.1 Human Resources and Human Resource Development under the heading “Research Centers”). The Department continues to recruit and hire faculty with expertise in other areas of sustainability; Assistant Professor Kiel Moe, author of several books on contemporary building technique, was the most recent of such hires, and two other faculty searches are ongoing. With faculty like Moe teaching both core technology courses and introductory design studios, our program seeks full integration of sustainability principles into the design pedagogy, with the expectation that today's students will, once in practice, unlike previous generations, be unable to separate sustainability consciousness from design methodology.

E. Architectural Education and the Public Good

“Since its founding, the Graduate School of Design has been a crossroads of learning and intellectual debate. Today, the school is committed to building on that legacy of cultural diversity, firm in the conviction that a multiplicity of voices and viewpoints among students, staff, and faculty is essential to our mission of advancing the fields of architecture, landscape architecture, and urban planning and design.” – Dean Mohsen Mostafavi

Graduates of the GSD's Master in Architecture degree program will only become leaders in the profession if their education has developed in them sufficient mental agility, inquisitiveness, and flexibility to respond to the needs not only of private clients but also of the broader public affected by and benefiting from their design solutions. With the exception of a few introductory studio exercises aimed at more abstract, spatial problem-solving, design pedagogy in the M.Arch program is shifting away from a notion of architectural solutions resulting directly from fixed program briefs, towards a more open dialogue between architectural space and programmatic needs of a given institution, community, and/or context; in other words, we no longer believe that reductive formulations such as

“form follows function” are sufficient to produce an architecture that is responsive to the diverse needs of a rapidly changing world. In each successive semester of the core studio sequence, students are given increasing flexibility to design programs to be housed in their architecture: in the fourth-semester core studio, for example, students work collaboratively on urban master plans where, in response to a multi-layered analysis of social and economic forces, they engage in urban programming (determining appropriate uses and densities within a given district, as well as adjustments to transit planning and development phasing). In third-year options level, students may elect to enroll in studios that serve the public good in more direct ways – for example, studying low-cost deployable solutions to housing refugees in the wake of the 2010 earthquake in Haiti (Shigeru Ban, spring 2010); designing medical clinics and educational campuses for rural communities in the developing world, in collaboration with NGO sponsors (Peter Rose, spring 2009; Toshiko Mori, fall 2010); and developing programs and architecture to promote community among the survivors of the Tohoku tsunami in Kamaishi, Japan (Toyo Ito, spring 2012). Architecture students may also elect to enroll in options studios offered by the Department of Urban Planning and Design, which analyze and propose solutions for real urban (re)development projects in America and around the globe – nearly all of them sponsored by local governmental bodies, NGOs, or (in a few cases) enlightened developers.

Outside of the studio, students are exposed to the role architects play in addressing the world's very pressing challenges of environmental, social, and economic sustainability in a wide array of required and elective courses. Energy systems and responsible construction practice are covered, for example, in GSD-6125 “Environmental Technologies in Buildings”, while the relationship of architecture and urban design to social theory is a key component of GSD-4223 “Buildings, Texts, and Contexts III: Architecture in the 20th Century”. Students can pursue more specialized topics related to understanding how design impacts the public by taking advanced architectural electives in sustainability, construction technology, history and theory; courses in ecology offered by the Department of Landscape Architecture; and urban theory offerings of the Department of Urban Planning and Design. That the GSD provides architecture students with diverse and abundant opportunities to engage faculty and students from related design disciplines should be considered among the unique strengths of our program.

But the architect's engagement with the public is not merely a topic of academic interest, to be discussed hypothetically in the relative safety of the classroom. The GSD actively encourages students to get out into communities – local and global – to understand more directly the needs of communities underserved by architectural or urban design and, where practical, to provide design services. Numerous student-led social action organizations are recognized and their activities funded by the GSD – among these SoCA (Social Change and Activism), NOMAS (National Organization of Minority Architecture Students), and Women in Design. (A full listing of student organizations is found in section 1.2.1 Human Resources and Human Resource Development under the heading “Student Organizations”). The GSD also awards several Community Service Fellowships each year to students interested in working with community groups and nonprofits on deserving design and design education projects. The GSD is also interested in cultivating young and diverse pool of design talent for future generations. Project Link is an intensive four-week Architecture and Design studio created, planned, and initiated in 2008 by GSD students in the fields of Architecture, Landscape Architecture, and Urban Planning. It is a student-run and university-funded opportunity to reach out to Boston communities to introduce opportunities within the design field for underprivileged and talented high school students. The summer program teaches students architectural drafting, model-making, and representation techniques, and instills in them fundamental design principles that encourage them to think critically about their surroundings. Its goal is to immerse students in the world of design and put them on track for exploring these ideas at a collegiate level.

1.1.4. Long-Range Planning

(NOTE: This section has been updated since the September 2011 APR submittal.)

Long-Range Planning at the GSD

In Fall 2010, Dean Mostafavi and the senior leadership of the GSD including Executive Dean Pat Roberts, Associate Dean (Academic) Michael Hays, and the Department Chairs began a new Five-Year Academic Planning exercise in consultation with GSD Senior Faculty. This renewal of the academic plan for the GSD was completed, reviewed, and submitted to the President of Harvard University in November 2011. This plan, many of whose details have already been announced and/or implemented, forms part of an academic planning exercise across Harvard University and is intended to also lend shape to the University's upcoming capital campaign.

The five-year planning exercise covers not only academic planning for the Graduate School of Design's various programs, including the Master in Architecture degree program, but also financial, staffing, and space planning. It includes projections for enrollment increase in several degree programs (though currently not for the Master in Architecture degree program) and a corresponding expansion and renovation of our facilities. The most important details of the GSD's five-year plan that have been made public are outlined below; in this redacted version, aspects that affect or are closely related to the long-range plans of the Master in Architecture degree program are given particular focus.

Enrollments

The Graduate School of Design, as an entity within the University, is relatively small in terms of student and faculty (in Full-Time Equivalent, or FTE, figures), and its scope and size have not enabled it to function optimally. The GSD does not benefit, for example, from critical mass in degree programs such as MUP that have relatively smaller enrollments compared to the M.Arch program. Although the GSD is one of the smallest schools within Harvard University, it offers (for better or worse) one of the highest numbers of separate degree programs (10). Bringing enrollments up in programs such as MUP, MAUD, and MDesS will bring critical mass, ensuring that the School is educating the appropriate number of future leaders in each of its disciplines. The M.Arch I program has historically had the largest enrollment among GSD programs, and its current enrollment targets – 60 students entering the program in the first year, with an 12 additional students added with Advanced Placement in the second year – are not expected to increase in the near future.

The MDesS program provides innovative opportunities for the GSD as we pursue the dual mission of design excellence and social engagement; the program has successfully launched several new concentrations during the Mostafavi deanship, including Art, Design, and the Public Domain (fall 2010), Critical and Strategic Conservation (fall 2011), and Anticipatory Spatial Practice (fall 2011). The MDesS program presents that possibility of instigating cross-disciplinary collaboration with faculty from other schools and departments and of contributing to an emerging discussion of developing more arts-related programs within the University. Increasing enrollments of non-studio based programs like the MDesS, DDes, and to some extent, the MUP program, will help the school increase its overall enrollment without putting undue strain on desk space within the studio space of Gund Hall.

As the design disciplines become more complex, the School has needed to offer a greater variety of courses so that students from all disciplines can pursue not only their required courses but also those that expose them to broader fields of study, ranging from geometric modeling to advanced fabrication to large-scale urban and landscape planning. Faculty hires have increased over the past several years, reflecting our response to this need (as well as to increased enrollments), and the size of the GSD faculty is projected to grow from 69.5 FTE (current) to 83.4 FTE within five years.

Financial Aid

Lack of sufficient financial aid has affected our ability to compete against certain schools for the best students, especially in architecture and planning. However, we achieved an admissions yield rate of approximately 72% over the past three years. Although the average grant to individual students has remained relatively flat since 2008, our financial aid expenditures have doubled over six years as a result of increased number of grants, higher enrollments, and making grants available to international students. The multiyear plan assumes we will maintain a standard tuition discount of 42%.

Faculty Planning

Faculty FTEs have steadily grown in recent years as a result of our efforts to create a stronger presence of full-time faculty who can provide the leadership necessary for achieving our goals. We plan to increase the number of tenured faculty and convert some of the part-time tenured faculty positions into non-tenured positions as these faculty members retire. The recent increase in numbers is also due to reliance on visiting faculty, who fulfill their traditional role of linking design pedagogy to practice, and who also provide us with an opportunity to gain or experiment with emerging domains of knowledge in our various fields of study. More of these visiting faculty positions will be converted into multiyear junior and senior positions. The goal of increased faculty hiring in the next five years is to achieve an overall increase of roughly 14 FTEs over five years, which, together with projected enrollment increases, will produce a student-to-faculty ratio of roughly 9:1 (compared to 8.4:1 currently). It should be noted that design studio education is intensive, with 12-13 students per studio section normally the maximum, and 9-10 students ideal for core studios in M.Arch, MLA, and MUP programs.

The Department of Architecture has advertised and is currently evaluating candidates for the following open faculty positions:

- Tenured/Senior Professor in Architectural Design
- Tenured/Senior Professor in Environmental Technologies and Sustainable Design in Architecture
- Senior Professor in Architectural Technology
- Adjunct Associate Professor in Architecture Professional Practice
- Assistant or Associate Professor / Adjunct Assistant or Associate Professor in Environmental Technologies and Sustainable Design

A full listing of Open Faculty Positions at the GSD may be seen online at the URL <http://www.gsd.harvard.edu/#/gsd-resources/human-resources/open-faculty-positions.html>

Among these various positions, the Department of Architecture has made a top priority increasing the number (and diversifying the age and experience range) of architecture faculty teaching in sustainable design; this reflects closely the value statements made in the “Five Perspectives” above (particularly Architectural Education and the Profession/Architectural Education and the Public Good). In addition to allowing the Department to develop broader course offerings in sustainability, attracting top faculty to the GSD will also enhance increase opportunities for architectural master’s and doctoral candidates to pursue original research in this field.

Staffing

GSD staffing levels have been comparatively lean compared to the University as a whole, but additional staffing cuts (about 10%) were made in 2010 as part of an administrative reorganization. Over the past year, however, new positions have been created and filled, including a financial analyst in Financial Services, a Web Content Manager, a new director of Executive Education (see below), and additional positions in Student Services for recruitment and learning support. Providing adequate

staff to support faculty research initiatives is now a high priority, so that the GSD can continue to attract and administer research sponsorship.

Executive Education

The GSD's Executive Education program was hit hard by the recent economic crisis; in 2011 a new Director, Rena Fonseca, took on the project of reshaping Exec Ed with the goals of addressing market needs more directly in course development; achieving greater participation of GSD faculty as instructors and guest speakers; and channeling the benefits of executive-level learning back to members of the GSD Community.

Space Planning

The School's design campus has started to take form with the recent acquisition of three nearby houses that are now in use. Doctoral students have workstations in 20 Sumner Road, and MDesS students are housed in 40 Kirkland Street. Each house also has two seminar rooms for small classes and meeting space. Faculty and staff offices may be added over the course of the next few years.

After surveying students and faculty, slight modifications were made to the design of the new desks in the Gund Hall studio trays. The second floor and mezzanine have been renovated over the summer of 2011, and the replacement of all remaining older workstations will be completed over the summer of 2012.

Additional modifications/renovations to the School's physical facilities entailed by the 2011 five-year plan (each of these detailed in greater depth in section 1.2.3 "Physical Resources") include a new classroom added adjacent to the Loeb Library and Portico Rooms; modifications to the Loeb Library interiors, responding to students' needs for meeting and computer use space, and consolidating specialized collections; updates and enhanced machinery and facilities for the basement Fabrication Labs; and a new curtain installed in Piper Auditorium, which will enable the School to more attractively configure the auditorium for various uses.

Student Information System and Website

A number of information and communications systems improvements have been completed over the summer of 2011, including the new GSD Registrars Online Student Information System (GROPIUS), which replaces most of the paper formwork students needed to complete for registration and enrollment in the past with convenient online resources. Simultaneously, the GSD's new website was launched in September 2011 (see section 2.4 "Public Information").

Curricular Planning

Long-term curricular planning for the Master in Architecture Degree Program – including the recent development of semester-abroad study programs for Architecture students, changes in the Independent Thesis program, and the integration of research laboratories into advanced elective curriculum – while under the general purview of the Dean's Five-Year Planning Study – have primarily evolved within the context of the Department of Architecture, led by the Chair, Senior Faculty, the Program Director, and individual faculty members responsible for specialized topic areas (history, theory, environment, technology, etc.). Curricular review and development procedures are discussed later in this report, in section 2.2.3 "Curricular Review and Development". The goals of long-term curricular development closely reflect several value statements made in the "Five Perspectives" above (particularly Architectural Education and the Academic Community/Architectural Education and Students).

Supplement to APR section 1.2.1 Human Resources and Human Resource Development:
 "Faculty Teaching Assignments and Credentials" (see APR p. 19)

Faculty member	Summary of expertise	Academic Year 2011-2012					
		Course number					
Abalos, Inaki	design studio, skyscrapers, urban design	1602					
Asensio Villoria, Leire	architectural design, computation	1405/1504	6423				
Bandy, Vincent	architectural design	1201					
Bechthold, Martin	structures, fabrication, robotics, advanced research, CAD/CAM	6429	9112	6229			
Bozdogan, Sibel	architectural history and theory, focus on Turkey and Middle East	4408					
Burchard, Jeffrey	architectural design	1102					
Cohen, P. Scott	architectural design, projective geometry, computational design	1101	1314				
Conzett, Jurg	structural engineering	6431					
Correa, Felipe	urban design	1605					
de Meuron, Pierre	architectural design	9310 (thesis)					
Erel, Yael	architectural design	1101	1102				
Etzler, Danielle	architectural design, materials, fabrication	1201	6121	1202			
Georgoulas, Andreas	project management, professional practice	7411	5493	6328			
Goncalves, Joana	sustainability, energy	6423					
Hays, K. Michael	architectural history and theory, critical conservation, academic dean	3474	4121	4474	4432	4475	
Herzog, Jacques	architectural design	9310 (thesis)					
Hong, John	architectural design, sustainability	1305	1102				
Howeler, Eric	architectural design, construction technology, fabrication	1201	1202	6123			
Hoxie, Christopher	digital media, immersive environments	2223	2319	2405	2414		
Hyde, Timothy	architectural design, history and theory, thesis coordinator	4223	1202	9301	9690		
Ibanez, Mariana	architectural design, computational and responsive environments	1101	1317	6434			
Idenburg, Florian	architectural design	1201	1202				
Jennings, Richard	professional practice, project management, integrated project delivery	7440					
Kara, Hanif	structural engineering	6328					
Khamsi, James	architectural design	1102					
Kienzl, Nico	energy, sustainability, construction technology	6122					
Kwinter, Sanford	architectural theory, contemporary society	3431	3426				
Leers, Andrea	architectural and urban design, professional practice						
Legendre, George L.	architectural design, parametric design	1316	2404				
Levi, Jonathan	architectural design, construction technology	1201					
Lynch, Peter	drawing	2121					
Macomber, John	construction and project management	7409					
McCafferty, Patrick	structural engineering	6227					
Michalatos, Panagiotis	computational design	6338	6425	6432			
Moe, Kiel	energy, sustainability, construction technology, architectural design	1101	6125	6430			

Supplement to APR section 1.2.1 Human Resources and Human Resource Development:
 "Faculty Teaching Assignments and Credentials" (see APR p. 19)

Faculty member	Summary of expertise	Academic Year 2011-2012					
		Course number					
Moneo, Rafael	architectural design, architectural theory	3211					
Mori, Toshiko	architectural design, fabrication, engineering collaboration, globalization	1301					
Moussavi, Farshid	architectural design	1312	3409				
Mulligan, Mark	architectural design, construction technology, Japanese architecture, materials	6121	6230	2414	6311		
Nabian, Nashid	architectural design, computational and responsive environments	6469	2314				
Naginski, Erika	architectural history	4121	4420	4122	4432		
Nakazawa, Paul	professional practice, entrepreneurship	7408	1601				
Nastasi, John	computation, fabrication, CAD/CAM	6317	6427				
Park, Jinhee	architectural design, sustainability	1305					
Petit, Emmanuel	architectural theory, contemporary society	4450					
Picon, Antoine	history of architecture, history of technology, doctoral research methods	4430	4122				
Piper, Michael	architectural design	1202					
Pollalis, Spiro	structures, project management, advanced research, sustainable cities						
Reinhart, Christoph	sustainability, energy, daylighting, software development, advanced research	6428					
Rocker, Ingeborg	architectural design and theory, fabrication	1101					
Sarkis, Hashim	architectural and urban design, architecture of Islamic world	1310					
Sayegh, Allen	architectural design, computational and responsive environments	1315	2314				
Scelsa, Jonathan	architectural design	1312	3409				
Schnapp, Jeffrey	architecture and information technology	3498	9115				
Schuler, Matthias	sustainability, energy	6412					
Scogin, Mack	architectural design, professional practice	1313					
Segal, Rafi	architectural and urban design	1202					
Shapins, Jesse	architecture and information technology	3448					
Silvetti, Jorge	architectural design and theory, urban design	3500	1601				
Smith, Christine	architectural history, specialist in medieval, renaissance	4358	4321	4350			
Snyder, Susan	architectural preservation	3333					
Thomas, George	architectural preservation	3333					
Thompson, Maryann	architectural design, professional practice	1201	7212				
Whittaker, Elizabeth	architectural design	1101					
Wickersham, Jay	professional practice, legal aspects	7410	7212				
Witt, Andrew	digital media	2224					
Wodiczko, Krzysztof	art in public domain	2482	2483	1315			
Wu, Cameron	architectural design, projective geometry	1101	2122	1102			