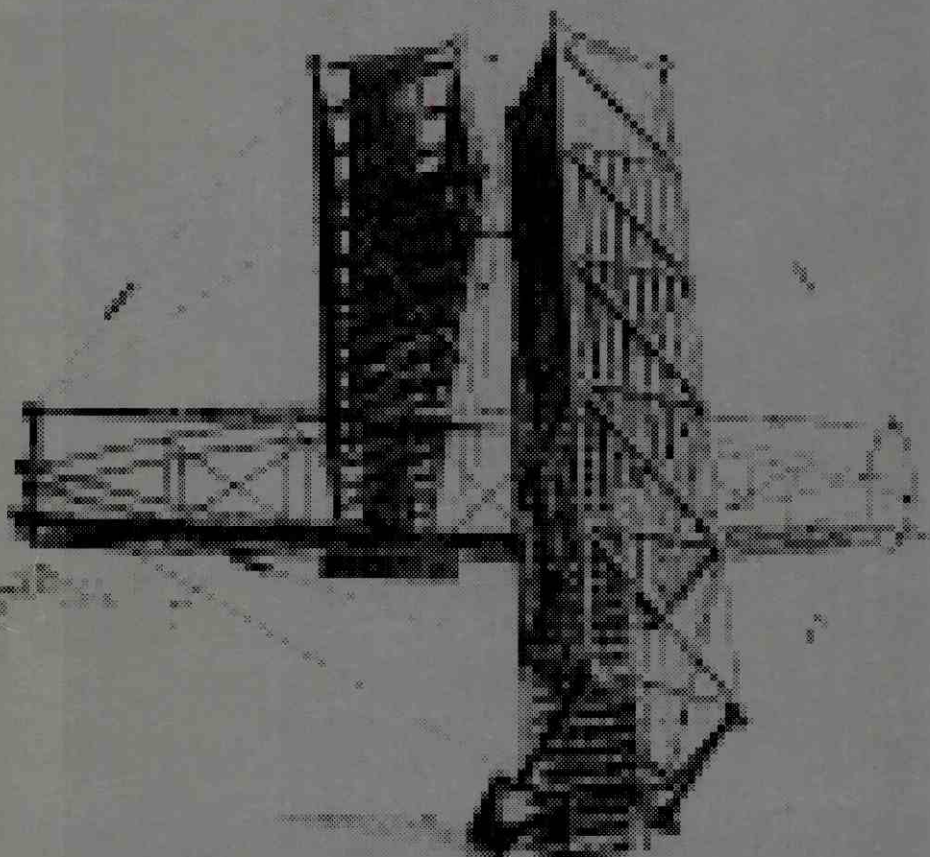


DOLAN

COLUMBIA
UNIVERSITY
BULLETIN
1990-91

GRADUATE SCHOOL OF
ARCHITECTURE
PLANNING AND
PRESERVATION



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**GRADUATE SCHOOL OF
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Educational Purpose

The Graduate School of Architecture, Planning, and Preservation offers a series of distinctive programs. The educational objectives of these programs deal in different ways with one open-ended field: urban society and its future. The presence of several areas of study within a single school enables a critical understanding of the forces that affect the building of spaces and the making of cities, so as to encourage appropriate formulation of original concepts, designs, and policies.

In each degree program offered, the School aims to develop students' artistic and intellectual abilities and to provide them, as future professionals, with the information and strategies necessary to deal responsibly and inventively with the issues challenging urban society today. These issues are approached in a non-dogmatic way so as to yield both significant theoretical proposals as well as pertinent solutions that can be effectively implemented in the contemporary city. Each program with its related studios is structured to permit faculty and students to explore a range of approaches in respective fields, while constantly aiming at social relevance and programmatic innovation.

Beyond its specific educational aims, the objectives of the School include basic research in the fields of architecture, planning, and preservation, exchange with other disciplines in the University, and the intensity of experimentation that makes the School part of broader international debates. Historically linked to the University's world-renowned Avery Library, the School takes advantage of its unique location in New York City. It draws vitality from and contributes to the unsurpassed resources available through the city's art and culture, its outstanding practitioners, scholars, and historians.

Bernard Tschumi
Dean

The Graduate School of Architecture, Planning, and Preservation

History

A program in architecture was first established at Columbia College in 1881, as an adjunct to the School of Mines. William R. Ware, a disciple of the first American student at the French *École des Beaux-Arts*, was the director of the new four-year curriculum leading to a degree of Bachelor of Philosophy.

The first class consisted of two students and met in a former asylum. In 1902 the School of Architecture finally realized complete independence as an entity in the University organization, and in 1912, with an enrollment of 140, the School moved into its new quarters, Avery Hall, designed by McKim, Mead, and White.

In 1922 William A. Boring became the first dean of the Faculty of Architecture. He foresaw the need for a department of town planning to provide instruction in defining the economic necessities of the community and the safety, health, and other requirements of the individual, and in the devising of plans to satisfy these needs. In this he anticipated the initial offering in 1935 of courses in town planning at the School of Architecture.

The first instance of the School's direct involvement in community service occurred in 1917. When St. Luke's Hospital in New York City proposed to erect an additional building adjacent to its existing facilities, to serve as a war hospital, the School of Architecture at Columbia was requested by the hospital authorities to aid in determining the feasibility of proceeding with the project. The School submitted a group of studies, in the form of eight-day problems, of such excellence that it was designated as architect of the project. This tradition of education and public service continues to this day as the students and faculty of this School continue to participate in a wide range of architecture, planning, and technology programs for the benefit of the community of which it is a part.

In 1966 Professor James Marston Fitch founded the first program in historic preservation in the United States.

The School celebrated its centennial in 1981. This was marked by the publication of *The Making of an Architect 1881-1981*, which chronicles the history of the School.

Facilities and Resources

The School

The School is located in its own building, Avery Hall; in the adjacent building, Fayerweather Hall; in the Avery extension, which connects the two; and in Buell Hall, directly south of Avery Hall. This complex houses design studios, class-

rooms, lounges, exhibition galleries, a carpentry workshop, audiovisual facilities, a slide library, a photography darkroom, a three-hundred-seat auditorium, and a seventy-seat lecture hall.

Avery Library

The resources of the world's leading architecture library, the Avery Architectural and Fine Arts Library, are located in Avery Hall and the Avery extension; they are available to the students of the School. Founded by Samuel Putnam Avery in 1890 as a research collection of books on architecture and the related fields, it has since grown into what can be called the national library of the profession. It is ranked by scholars from all over the world as the outstanding international research center on the history of architecture. Its holdings consist of over 230,000 books and periodicals on architecture, urban planning, art history, historic preservation, archaeology, the decorative arts, and a broad variety of related background material. The contents range from the first published book on architecture, L.B. Alberti's *De Re Aedificatoria* (1485), to a comprehensive collection of books on contemporary architectural movements. In addition, the library has over 100,000 original architectural drawings, collections of prints, and rare photographic material and archives. Avery Library also houses the *Avery Index to Architectural Periodicals*, the most comprehensive periodical index in the field. It is now available on-line as well as in print form.

The Ware Memorial Library is designed as a circulating branch of the library for the everyday use of the students. It contains more than eight thousand books on architecture and planning from the United States and Europe and is located in the Avery Library.

The Temple Hoyne Buell Center for the Study of American Architecture

The Temple Hoyne Buell Center for the Study of American Architecture, located in Buell Hall, was founded in 1982 to advance the understanding and interpretation of American architecture, landscape, and urbanism. To achieve this goal, the Buell Center has embarked on an ambitious program of fellowships and study programs designed to engage professionals, scholars, and the general public. These rich and varied programs make the Buell Center one of the world's most important focal points for the study of American architecture.

The Center for Preservation Research

The Center for Preservation Research, established in 1983 as a technical research facility of the Historic Preservation Program, offers a broad range of conservation services in the areas of historic preservation, architecture, and construction technology. The center's principal activity is technical studies, focused on the examination and treatment of historic buildings and monuments. Among the services offered are materials identification, condition assessment, and treatment evaluation.

The center also undertakes sponsored research in all areas of architectural conservation, including treatment studies and the history of building materials and technology. It operates a complex of laboratories in Schermerhorn Hall and utilizes the extensive collections of the Avery Architectural and Fine Arts Library.

Columbia Headquarters for Japanese Architectural Studies and Advanced Research

The Columbia Headquarters for Japanese Architectural Studies and Advanced Research, located in Buell Hall, was established in 1989 to advance the cause of serious research in the history and theory of Japanese modern architecture and urbanism. It serves as a center for academics and architects from around the world. The headquarters' plans include the following: (1) courses in Japanese architecture at the advanced level, (2) a special subset of books and periodicals on Japanese architecture organized in Avery Library, (3) fellowships for young scholars, and (4) funds for recognized scholars to reside on campus and pursue advanced research in history and theory.

The Community Design Workshop

The Community Design Workshop has been developed to provide design research and development assistance to community organizations and public agencies. Its central purpose is to afford students in all of the School's programs practical exposure to and involvement in current community planning and design issues, to guide them in providing concrete solutions to such design problems, and to explore the extent to which architecture, planning, and preservation can be useful tools in the resolution of community issues. The Community Design Workshop is one of the distributional requirements in the Methods/Practice Sequence for students in the M.Arch. Program. Students can also elect to couple the workshop with studio to develop an Independent Design Option, as the option guidelines are observed. Within the Planning Program, the Community Design Workshop is an elective. In Historic Preservation, the Community Design Workshop belongs to the Planning Option.

Computing Activities

The Columbia University Center for Computing Activities (CUCCA) operates seven mainframe computers: one IBM 4381, one administrative IBM 3090, one IBM 3083, three Sun 4s, and one DEC VAX 8700. The 3090 is used for administrative tasks and the 3083 is used for the on-line library catalog; the remaining systems are used primarily for research and instructional purposes and support the VM/CMS and UNIX operating systems. The Sun 4s and the VAX 8700 are used mainly by students and faculty members and are well-suited for program development, document production, user communication, and research.

The center maintains microcomputers and over one hundred terminals around the campus for access to the mainframe systems. The main user facilities contain high-speed laser printers, as well as assorted graphics output equipment. The ter-

minals are in various residence halls and libraries throughout the campus and, in some cases, provide twenty-four hour access. Computer laboratories in 251 Engineering Terrace and in 321A and 215 International Affairs have Apple Macintosh and IBM PS/2 microcomputers, high-quality laser printers, graphics printers, a selection of software, and network connections.

Consulting Services, the public services arm of Academic Computing at Columbia, provides full-time consulting at the main computer labs on campus (215 International Affairs and 251 Engineering Terrace) and provides non-credit courses on microcomputers, mainframe systems, text editing programs, and statistical programs on the mainframe systems.

In 1986 the School, through a grant from the University and the IBM Corporation, opened computer laboratories in Avery and Schermerhorn halls. The facilities contain ten IBM/PC-ATs with plotters and graphics software to develop projects in computer-assisted design and thematic maps.

Publications

The School maintains a series of publications to foster the exchange of information and ideas between it and the architecture, planning, preservation, and real estate development communities. *Newsline* is a monthly periodical that contains information and essays regarding the School's programs, faculty, and alumni as well as calendars and reviews of New York area events in architecture, planning, preservation, and real estate. It acts as a platform for current debates in architecture and urban issues. It is distributed to students, alumni, and friends of the School. *Abstract* is the yearly journal that documents the School's programs and student work and offers students the opportunity to have their work published for wide distribution. *Abstract* is distributed to students and is available for purchase in bookstores. *Miniseries* covers recent projects of interest by Columbia faculty. *Precis* is the student-edited annual journal published in conjunction with Rizzoli International. This publication is a forum for contributors to expand on themes developed by the student editorial board. Recent themes have included "Architecture and Body," "The Culture of Fragments," and "Beyond Style." In addition, the School publishes catalogues of exhibitions it organizes as well as a new series of books covering a variety of issues of the built environment, theory, and history.

Lectures and Exhibitions

The School offers an array of lectures, exhibitions, and events that reflect the diversity and interests of its programs. The Wednesday Evening Lecture Series brings internationally prominent practitioners, historians, and theorists to speak on issues of architecture, planning, development, and urbanism. In addition, the Architecture, Planning, Preservation, and Real Estate programs maintain their own special lecture series that are open to the School community. Speakers in the programs have recently included: Tadao Ando, Thomas Beeby, Marshall Berman, Gabriel Cabrero, Santiago Calatrava, Robert Caro, Peter Cook, John Costonis, Peter Eisenman, Frank Gehry, Romaldo Giurgola, Denis Hollier,

Philip Johnson, Fay Jones, Rem Koolhaas, Barbara Kruger, Daniel Libeskind, Barbara Miller-Lane, Adele Naudé Santos, Edward Seckler, and Alvaro Siza.

In addition, the School and its programs sponsor special symposia and conferences that draw together faculty, prominent guests, and students to discuss issues of timely and historical importance. Recent and planned conferences and symposia include: "Hispanic Traditions in American Architecture and Urbanism," "Robert Moses' New York," "Currents in Contemporary Architectural Theory," and "The City and the Edge."

Exhibitions occur frequently at the School each term. With the opening of the Arthur Ross Architectural Gallery in Buell Hall, the School will become a focus for exhibitions concerning design. Recent and planned exhibitions include: "Building: Machines," "New Schools in Catalonia," "Emerging European Architects," "The Works of Santiago Calatrava," "Raum Plan vs. Plan Libre," "The Architecture of Albert Frey," and "The Works of Giuseppe Terragni."

New York City

The City of New York is in itself a principal resource for the student, who benefits from its urbanism and endless variety of excellent examples of historic and modern buildings.

New York's institutions are another significant advantage. Alumni and faculty members of the School are in positions of major responsibility in various organizations. This has helped the School to open up unique opportunities for students. A partial list of these organizations includes the Museum of Modern Art (Department of Architecture and Design), the Metropolitan Museum of Art, the Cooper-Hewitt Museum, the South Street Seaport Museum, the Architectural League of New York, the Institute for Fine Arts (New York University), the New York City Planning Commission, the New York City Landmarks Preservation Commission, the Parks Council, and the Municipal Art Society.

William F. Kinne Fellows Traveling Fellowships

The School is the beneficiary of a considerable bequest in honor of William F. Kinne Fellows that has as its purpose the enrichment of the student's education through travel. A number of fellowships for the study of architecture and related fields are awarded annually to graduating students. Applications from members of the graduating class are considered for postgraduate travel and for travel during the summer preceding the final year of study. Specific requirements and guidelines are announced during the academic year. Students apply in the spring term of each year.

The Paul Milstein Professorship of Urban Development

In 1983 Mr. and Mrs. Seymour Milstein endowed the Graduate School of Architecture, Planning, and Preservation with a professorship named in honor of their brother Paul Milstein. The Paul Milstein Professorship of Urban Development provides the opportunity to focus in depth on issues of interest by inviting senior

professionals or scholars to teach for one or two terms each year in the Master of Science in Real Estate Development Program. It is the intention of the professorship to encourage a deepening interest in the forces that have and will shape urban development in America.

Mathews Lecture Series

The Mathews Lectures began in 1935 with an endowment from Charles T. Mathews (Class of 1889). Among the lecturers who have participated in the series are:

Professor Joseph Hudnut (1935)	Professor Alfred K. Frazer (1974)
Professor Leopold Arnaud (1937)	Professor Spiro Kostoff (1976)
Professor Talbot Hamlin (1939)	Professor Vincent Scully (1977)
Professor Meyer Schapiro (1946)	Professor George Collins (1979)
Professor John Mundy (1965)	Professor Neil Levine (1981)
Professor Henry R. Hitchcock (1971)	Professor Helen Searing (1983)
Sir Nikolaus Pevsner (1972)	Professor Georges Duby (1985)

Programs and Degrees

Master of Architecture

Master of Science in Architecture and Building Design

Master of Science in Architecture and Urban Design

Master of Science in Urban Planning

The Ph.D. in Urban Planning

Master of Science in Historic Preservation

Master of Science in Real Estate Development

Shape of Two Cities: New York/Paris Program (special undergraduate program)

Columbia/Barnard Undergraduate Architecture Majors

Joint Degree Programs

Master of Architecture—Master of Science in Historic Preservation

Master of Architecture—Master of Science in Urban Planning

Master of Science in Urban Planning—Master of Science in Historic Preservation

Master of Science in Urban Planning—Master of Business Administration (in conjunction with the Columbia Business School)

Master of Science in Urban Planning—Master of International Affairs (in conjunction with the School of International and Public Affairs)

Master of Science in Urban Planning—Juris Doctor (in conjunction with the School of Law)

Master of Science in Urban Planning—Master of Public Health (in conjunction with the School of Public Health)

Master of Science in Urban Planning—Master of Science in Social Work (in conjunction with the School of Social Work)

Programs

Master of Architecture Degree Program

CORE STUDIOS DIRECTOR: Mr. Thomas Hanrahan

ADVANCED STUDIOS DIRECTOR: Mr. Bernard Tschumi

The Master of Architecture is a three-year first professional degree program that examines the importance of architectural design concepts in relation to historic and contemporary issues in an evolving culture.

Being part of a great university located in a major metropolis has determined much of what is unique about the Architecture Program. The School is not only able to attract excellent faculty members, but it is also able to draw upon the large and diverse community of architects, theorists, practitioners, and scholars in New York. Thus the program is able to expose student architects to architecture as a complex and pluralistic cultural endeavor.

At the same time that it explores the richness of architecture culture, the program seeks to provide an orderly system for integrating the various aspects of architectural study. Therefore, the curriculum is broadly divided into the study of history and theory, technology, methods, visual studies, and design. Learning about architecture involves, on the one hand, examining those historical, social, cultural, technical, and economic forces that shape buildings; on the other hand, it means mastering these forces with means traditionally available to the architect. The design studio is the main focus of the curriculum in that it offers the opportunity to integrate and synthesize what is being studied.

In general, the program seeks to impart basic principles and knowledge, to develop visual and analytical skills, and to relate creativity to given cultural situations. It is hoped that architects, thus trained, will be able to use their knowledge and insight by responding to and improving the built environment.

Admissions

Eligibility

The M. Arch. Program at Columbia is for the first professional degree in architecture; therefore, students who already hold a professional degree (such as the B. Arch. degree) are not eligible to apply to the program. Students who have studied architecture in nonprofessional programs (such as a four-year program in architecture) may apply, with the possibility of obtaining advanced standing for such course work. Prior architectural study is not a requirement. Regardless of prior experience, all students fill out the same application forms and send supporting materials (as described below). Applications and all supporting materials are due on January 15. Students are admitted to the M. Arch. Program for the autumn term only.

Academic Preparation

1. All applicants must have, at the time of first registration, an undergraduate degree or the equivalent from an accredited college or university. Applicants are required to take the Aptitude Test of the Graduate Record Examination. Information may be obtained from the Graduate Record Examination, Educational Testing Service, Box 955, Princeton, N.J. 08540.
2. Applicants who have no prior background in architecture must complete a 3-point course in architectural graphic presentation as a prerequisite for the Core Studio Sequence, before first registering in the M.Arch. Program. Those students who are required to take the course are officially notified in their letters of admission, which are sent out on April 1.
The following course, which is offered by the School's Summer Session, fulfills this prerequisite:

S1020W Architectural representation: introduction 3 pts

3. To fulfill the prerequisite for the History/Theory Course Sequence all applicants must have completed a 3-point survey course in architectural history dealing with any of the following periods: classical to Renaissance, Renaissance to modern, or modern. The following course, which is offered by the School's Summer Session, fulfills this prerequisite:

S3320W Issues in architectural theory and history 3 pts

Candidates who have not yet successfully completed the above academic prerequisites at the time of application are eligible for admission into the M.Arch. Program. However, their admission into the program is conditional on the successful completion of the prerequisites before the first registration in September. They will be notified in their admission letter on April 1.

If the history/theory prerequisite course is taken at another college or university, after admission to the M.Arch. Program, prior approval must be obtained by sending, during the summer, course titles and descriptions to the dean of admissions. The credit for these courses must be recorded by transcript at the above office as soon as possible, but before September 1. The points for these courses are *not* applicable to the M.Arch. degree.

Applicants are *strongly advised* but not required to complete the following non-mandatory course work: one term of general physics (with laboratory) and one term of studio in the visual arts (drawing, painting, or sculpture). In addition, a reading knowledge of a modern foreign language, a course in environmental studies, and additional courses in architectural history are recommended.

Additional information regarding courses offered in the Columbia University Summer Session may be obtained by writing to Office of the Summer Session, 303 Lewisohn, Columbia University, New York, N.Y. 10027.

Students in need of financial aid may use part of their student loans for the Columbia summer session courses. (See *Financial Aid—Loans.*)

Portfolio

In addition to the application form and supporting documents, applicants must submit a portfolio showing evidence of their visual acuity and graphic abilities: paintings, drawings, prints, graphic designs, or architectural drawings. It is recommended that evidence of freehand drawing skills be included. Submitted materials, either original work or reproductions of the originals, should not exceed 8½ by 11 inches and should not measure more than ½ inch in thickness. The pages should not be placed in a ring binder and each page must be clearly marked with the applicant's name. Please do not send slides.

The material is returned by mail only if sufficient postage is included and the return address clearly indicated.

Placement into Studio Sequence

Students who are admitted into the M.Arch. Program are informed in their letters of admission of the level at which they will enter the Core Studio Sequence. Based on the evidence submitted in the portfolio, the student's status in relation to the prerequisites and requirements of the studio sequence is determined. Students may be required to take the studio prerequisite, *Architecture S1020W—Architectural representation: introduction*, at Columbia during the summer. A limited number of students may receive advanced standing points for *Architecture A4001 and A4002—Core studio, I and II*, thereby reducing the required studio sequence to two years. After the student's status has been determined by the M.Arch. Committee on Admission, it is not subject to further review by the Graduate School of Architecture, Planning, and Preservation. No subsequent petitions for advanced standing in design studio sources are considered.

Transferring Academic Credit

Students who have completed acceptable architecture course work prior to entering the M.Arch. Program may apply for advanced standing credit or course waivers in nonstudio courses. No requests for advanced standing credit are considered until official copies of relevant transcripts have been submitted to the Office of Architecture Admissions.

There are two situations in which one may receive *advanced standing* in the M.Arch. Program: (1) a student who is admitted into the second year of the M.Arch. Program may receive advanced standing for the first year courses including the two design studios (potentially 36 points); (2) a student with an undergraduate degree who has taken architecture courses beyond those required for that degree may receive credit for those courses; credit will be evaluated on an individual basis (potentially 9 points).

Information regarding procedure for students who wish to petition for advanced standing or course waiver is available at the time of first registration in

September. Students may receive the approvals from faculty or directors at any time after enrollment. Official transfer of credit by the Columbia University registrar, however, cannot be accomplished until one year of full-time enrollment in the M.Arch. Program. Advanced standing forms are available in the Office of the Dean of Admissions and should be returned there for review.

Petitions for advanced standing credit in nonstudio courses are normally reviewed by a faculty member teaching the equivalent course within the Graduate School of Architecture, Planning, and Preservation. For cases in which no equivalent course is offered at Columbia, the petition is reviewed by the dean. Advanced standing credit is awarded only for courses in which students have received a grade of C or better. In some cases, faculty members may ask to see examples of previous course work. Students are advised to have course descriptions and previous course work on hand at September registration to facilitate planning an academic program with an adviser.

There are three circumstances under which courses can be *waived*: (1) the student presents evidence of professional experience in related subject matter; (2) the student passes a formal examination on the subject (with the approval of the course instructor); or (3) the student presents evidence of having passed relevant courses at the undergraduate or graduate level. Because waivers do not carry point or course credit, elective courses may be taken to fulfill the point requirements for the M.Arch. degree.

The Three-Year M.Arch. Curriculum

The Master of Architecture Program attempts to distinguish itself from similar programs elsewhere by stressing the importance of developing an understanding of, and an ability to apply, architectural concepts in relation to broader historic and contemporary issues. The objective of the program is to assist the student in developing a theoretical basis for decision making in design, while maintaining intense exposure to a broad spectrum of philosophical and cultural attitudes. The faculty believes that a variety of pedagogical approaches delivered with clearly defined objectives best suits the needs of the heterogeneous graduate student population.

The program comprises four major components, together forming the educational matrix that is the core of the Columbia experience:

1. A student body with interest in the profession of architecture and with diverse backgrounds in many areas of intellectual endeavor, all contributing to the richness of the program.
2. A faculty of experienced teachers, both practitioners and researchers, all of whom are expected to relate their extracurricular work to their teaching responsibilities.
3. A program of study consisting of lectures, seminars, and studios, whose objectives are definable but whose form is malleable in response to changing cultural attitudes and social needs.

4. A setting of the most effective physical facilities, including classrooms, studios, auditoriums, shops, and libraries. In addition, the cultural milieu of New York City is an ever-present advantage that gives the program its unique qualities.

The focus of the entire program is the Architecture Design Studio. It is a carefully structured three-year course of study that prepares the student for roles related to the design of buildings and other environmental artifacts. This design activity is augmented by five other areas of study. The History/Theory Sequence broadens the student's perceptions of his or her design activity, through the historical and theoretical examination of the cultural role of design activity. The Technology/Structures Sequence prepares the student to understand the structural, constructional, and material consequences and constraints on design decisions. The Visual Studies Sequence provides specialized investigation that complements the normal studio work, including both manual and computer-aided drawing courses. The Methods/Practice Sequence prepares the student to undertake management and professional practice activities. The Elective Sequence, which permits the student to pursue individual interests in architectural and environmental topics, may become, in certain cases, the basis for pursuing advanced study in specialized areas beyond the M.Arch. degree.

Summary of the Master of Architecture Program

To graduate with a Master of Architecture degree, a student is required to complete 108 graduate-level course points that are approved by the Graduate School of Architecture, Planning, and Preservation. These course points are a combination of required courses, a certain number of points of distribution course requirements, and elective course points. The courses are divided into the following categories: Studio, History/Theory, Technology/Structures, Visual Studies, Methods/Practice, and Elective. Each category (except Elective) has requirements that must be fulfilled. The School reserves the right to institute changes in the curriculum before the expiration date of this bulletin.

I. STUDIO COURSE SEQUENCE

The Studio Sequence is the focus of the M.Arch. Program. During the three-year, six-term program each student may study with as many as six different critics. All studio work is subject to formal public design review, and design juries include visiting architects, historians, artists, critics, and engineers, as well as faculty members from the Architecture, Building Design, Urban Design, Planning, and Historic Preservation programs of the School.

The Core Studios are composed of a carefully structured three-term sequence involving a series of interrelated projects that begin with an examination and utilization of fundamental space-making elements (line, plane, volume), and that are directed toward the ordering of hierarchical spatial sequences, the engagement of the phenomena involved in the act of making or constructing, and the occupation of space. Studio projects

involve the issues of public and private, urban and suburban, context and program, analysis and invention, among others, and progressively increase in length from two weeks to twelve weeks.

In the Advanced Studios, themes and programs are defined by the individual critics. These themes and programs both carry an educational objective and present an opportunity for the critic to develop with his or her students a specific area of work or research. The Advanced Studios are intended to build upon the ideas and skills developed in the Core Studios. The range of faculty and studio projects in studio sections allows the student to work with those instructors on projects that will allow specialized design study. In contradistinction to the Core Studios, the Advanced Studios are open to M.Arch. students as well as to second professional degree students.

A. Prerequisite for Entry into M.Arch. Program

A 3-point course in architectural representation offered by the Graduate School of Architecture, Planning, and Preservation for entering students with a deficiency in graphic ability (notified in the letter of admission). The following course offered in the summer session is required:

S1020W Architectural representation: introduction 3 pts

B. Requirements for M.Arch. Program

Six sequential studios starting in autumn term, first year:

A4001	Core studio, I	9 pts
A4002	Core studio, II	9 pts
A4003	Core studio, III	9 pts
A4004	Advanced studio, IV	9 pts
A4005	Advanced studio, V	9 pts
A4006	Advanced studio, VI	9 pts

Total: 54 pts

II. HISTORY/THEORY COURSE SEQUENCE

DIRECTOR: Ms. Mary McLeod
Mr. Kenneth Frampton

The history/theory curriculum stresses a broad social and cultural approach to architecture history. Architecture history is not seen primarily as stylistic evolution, but rather in terms of a rich matrix of parameters—political, economic, artistic, technological, and theoretical—which have had a role in shaping the discipline. Most instructors of architecture history at GSAP have both professional and academic degrees. A shared intention is to understand the relations between practice and a historical perspective.

The course offerings are structured to provide each student with an opportunity to gain both a broad general background in architecture history and a degree of specialized knowledge in areas of his or her selection. The architecture history classes within the School are supplemented by

M.Arch. Program

Course Sequence

Design Studio
Total: 6x9=54 pts

Technology/Structures
Total: 6x3=18 pts

History/Theory
Total: 6x3=18 pts

Drawing
Total: 2x3=6 pts

Methods/Practice
Total: 2x3=6 pts

Electives
Total: 2x3=6 pts

Totals
108 pts

Autumn Term 1	Spring Term 2	Autumn Term 3	Spring Term 4	Autumn Term 5	Spring Term 6
Core studio, I	Core studio, II	Core studio, III	Advanced studio, IV	Advanced studio, V	Advanced studio, VI
Architecture and technology, I	Structures, I	Architecture and technology, II	Structures, II	Structures, III	Architecture and technology, III
History of architecture, I: 1750-1850	History of architecture, I: 1850-1930	Distribution 1	Distribution 2	Distribution 3	Distribution 4
Architectural drawing, basic	Architectural drawing, advanced				
		Computer-aided design in architecture	Distribution 1		
				Distribution 1	Distribution 2
Studio+3 classes, 18 pts	Studio+3 classes, 18 pts	Studio+3 classes, 18 pts	Studio+3 classes, 18 pts	Studio+3 classes, 18 pts	Studio+3 classes, 18 pts

classes in the Department of Art History and Archaeology, and students are especially encouraged to take art history courses examining pre-1750 and non-Western topics. Students may also take courses in other departments of the University, such as history and philosophy, providing they meet basic distribution requirements.

A. Prerequisite for Entry into M.Arch. Program

Any 3-point survey course in the history of architecture. A broad survey of world architecture is especially recommended. The following course is offered in the summer session:

S3320W Issues in architecture theory and history 3 pts

Students with little or no architecture background may also be required to take *Principles of architecture design* during the summer session.

B. Requirements for M.Arch. Program

Two sequential courses:

A4348 History of architecture, I: 1700-1850 3 pts

A4349 History of architecture, II: 1850-1930 3 pts

Total: 6 pts

If a student has had a similar class or classes, he or she may petition the professor of the class to waive the requirement.

C. Distributional Requirements for M.Arch. Program

Four courses

Total: 12 pts

The four courses must be chosen from five categories: (1) Pre-1750, (2) Modern 1750 to the Present, (3) Urban, (4) American, and (5) Non-Western. Students are expected to combine breadth in those fields they have not previously studied with in-depth seminars in at least one of these categories. At least one of the distribution areas must be Pre-1750, unless a waiver is granted. Each term's course schedule will identify those courses fulfilling the distribution requirements.

Below is a list of History/Theory courses offered in the past; included are classes which meet distributional requirements. Most courses are offered on a one- or two-year rotating basis.

A4358	Renaissance and baroque architecture	3 pts
A4445	The Palazzo: between type and built form	3 pts
A4573	Imperial Roman architecture	3 pts
A6734	Classical language and literature of architecture	3 pts
V3248	Greek art and architecture	3 pts
W3180	Art and architecture of ancient Egypt	3 pts
G4355	Gothic architecture	3 pts
G4418	Renaissance architecture in Italy	3 pts
A4314	Utopia and heterotopia	3 pts
A4337	Architecture and politics: 1920 to the present	3 pts

A4353	Le Corbusier	3 pts
A4370	Italian Rationalism	3 pts
A4372	Skyscrapers: art, technology, and commerce	3 pts
A4374	Contemporary theory and criticism of architecture: 1965 to the present	3 pts
A4380	The architecture of the Weimar Republic	3 pts
A4383	German modern movement: 1918–1933	3 pts
A4393	Anti-rationalist tendencies in modern architecture	3 pts
A4409	Theories of architecture: 1700–1900	3 pts
A4420	Comparative critical analysis of built form	3 pts
A4421	Avant-garde and tradition in 20th-century architecture	3 pts
A4450	Scandinavian modern movement: Utzon and Aalto	3 pts
A4480	Elements of landscape architecture	3 pts
G4548	Eighteenth-century French architecture	3 pts
G8573	Eighteenth-century French architecture theory	3 pts
A4330	Urban history, I	3 pts
A4331	Urban history, II	3 pts
A4371	Paris: the evolution of urban form	3 pts
A4410	Design attitudes in European and American urbanism: 1750–1930	3 pts
A4547	Case studies in urban design	3 pts
A6769	History of the American city	3 pts
Pl A4112	Physical structures of cities	3 pts
Pl A4304	Introduction to housing	3 pts
Pl A6001	History and theory of urban planning	3 pts
A4355	The architecture of Frank Lloyd Wright: critical analysis	3 pts
A4366	Historical evolution of housing in New York City	3 pts
A4755	The architecture of Louis I. Kahn: critical analysis	3 pts
A6730	American architecture before 1876	3 pts
A6731	American architecture after 1876	3 pts
A6769	History of the American city	3 pts
A6785	Modernism in America	3 pts
A4307	Contemporary non-Western architecture	3 pts
A4342	Contemporary Japanese architecture	3 pts
A4344	Traditional Japanese architecture	3 pts
A4351	Formal structure in central Asian architecture	3 pts
A4451	Crosscurrents between Western architecture and Islamic architecture	3 pts
A4573	Islamic architecture	3 pts
V3613	Buildings and cities in Japanese history	3 pts

III. TECHNOLOGY/STRUCTURES COURSE SEQUENCE

DIRECTORS: Mr. Robert Marino
Mr. Tony Webster

The Technology/Structures Sequence is predicated on a structurally rational point of view, and is intended to engage the student in investigations of structural and material properties as they directly determine architectural form and experience. The course sequence involves both lecture-based and studio-based courses, and both utilize laboratory demonstrations and field trips to active construction sites or material manufacturers. Lecture courses introduce structural principles for use in the design studio. Studio courses involve the design of simple yet precisely defined constructions in the various basic material types; these designs are subjected to public review at their conclusion. Advanced classes involve the case-study analysis of exemplary works of architecture—a method intended to enrich both theory and practice through a “hands-on” approach to the construction and servicing of built form.

A. Requirements for M.Arch. Program

Six sequential courses are required:

A4111	Structures, I	3 pts
A4123	Structures, II	3 pts
A4125	Structures, III	3 pts
A4220	Architecture and technology, I	3 pts
A4221	Architecture and technology, II	3 pts
A4610	Architecture and technology, III	3 pts

Total: 18 pts

B. Recommended electives for M.Arch. Program

A4136	Structures and computers	3 pts
A4619	Introduction to mechanical systems	3 pts
A4626	Architectural detailing	3 pts
A4628	Architectural acoustics	3 pts
A4637	Lighting and buildings	3 pts
A6134	Architectural consequences of structural decisions	3 pts

IV. VISUAL STUDIES COURSE SEQUENCE

DIRECTOR: To be announced

The Visual Studies Sequence is intended to develop and improve the student's capacity for graphic representation of three-dimensional architectural form and space. It is intended as a corollary to *Architecture A4001* and *A4002—Core studio, I and II*, and involves the presentation and utilization of increasingly sophisticated and precise drawing techniques both drafted and freehand.

A. Requirements for M.Arch. Program

Two sequential courses:

A4509	Architectural drawing: basic	3 pts
A4503	Architectural drawing: advanced	3 pts

Total: 6 pts

V. METHODS/PRACTICE COURSE SEQUENCE

DIRECTOR: To be announced

The Methods/Practice Sequence introduces the student to various aspects of professional practice including computer-aided design, project and office management, development processes, legal and planning regulation, etc. These serve as an introduction to areas to be further developed during the three-year apprenticeship period (following completion of the M.Arch. Program) required for professional licensing.

- A. Requirement for M.Arch. Program
- | | | |
|-------|---------------------------------------|-------|
| A4535 | Computer-aided design in architecture | 3 pts |
|-------|---------------------------------------|-------|
- B. Distributional Requirements for M.Arch. Program
- One course out of those offered:
- | | | |
|-------|--|-------|
| A4136 | Structures and computers | 3 pts |
| A4534 | Advanced computer-aided design in architecture | 3 pts |
| A4536 | Development and finance | 3 pts |
| A4560 | Professional practice | 3 pts |

VI. ELECTIVES

- A. In addition to those courses listed above in categories II–IV, any of which may be taken as an elective, courses offered by the Urban Planning and Historic Preservation programs when taken as electives may be applied toward completion of the M.Arch. degree.
- B. Electives in Other Schools and Departments
- Students may choose courses from other schools and departments of the University for M.Arch. elective credit. These courses are required to be directly related to the student's professional program within the School, and these courses must be at the graduate level (course numbers 4000 and above). Exceptions may only be granted by the dean or course sequence directors. Approval for these courses must be obtained during the registration period for the semester during which they are to be taken, and provided to the Office of Admissions.

VII. SUMMER COURSES

A. Summer Programs Abroad

The School offers summer programs abroad that can be taken for elective credit. These programs are open to Columbia students and others registered in professional programs. They generally involve lectures, seminars, tutorials, and tours and are held for five weeks during June and July.

B. Summer Session Courses

For architecture-related courses offered at Columbia during the summer, consult the Summer Session section of this bulletin.

After full-time matriculation into the M. Arch. Program, a student may credit no more than 6 points toward his or her degree from courses being taken simultaneously at institutions other than Columbia University and must obtain prior approval from the dean. M. Arch. degree candidates must be matriculated in the program for at least two years (72 points). A maximum of two research courses may be taken toward the M. Arch. degree.

Example of Three-Year M. Arch. Curriculum

Term 1 (Autumn)

A4001	Core studio, I	9 pts
A4220	Architecture and technology, I	3 pts
A4348	History of architecture, I	3 pts
A4509	Architectural drawing: basic	3 pts
		<hr/>
		18 pts

Term 2 (Spring)

A4002	Core studio, II	9 pts
A4111	Structures, I	3 pts
A4349	History of architecture, II	3 pts
A4503	Architectural drawing: advanced	3 pts
		<hr/>
		18 pts

Term 3 (Autumn)

A4003	Core studio, III	9 pts
A4221	Architecture and technology, II	3 pts
A4535	Computer-aided design in architecture	3 pts
	History/theory distribution course	3 pts
		<hr/>
		18 pts

Term 4 (Spring)

A4004	Advanced studio, IV	9 pts
A4123	Structures, II	3 pts
	History/theory distribution course	3 pts
	Methods/practice distribution course	3 pts
		<hr/>
		18 pts

Term 5 (Autumn)

A4005	Advanced studio, V	9 pts
A4125	Structures, III	3 pts
	History/theory distribution course	3 pts
	Elective	3 pts
		<hr/>
		18 pts

Term 6 (Spring)

A4006	Advanced studio, VI	9 pts
A4610	Architecture and technology, III	3 pts
	History/theory distribution course	3 pts
	Elective	3 pts
		<hr/>
		18 pts

Total for M.Arch. degree: 108 pts minimum

Joint Degrees

For joint degree options in the Master of Architecture Program, please consult the Joint Degree Programs section of this bulletin.

**Master of Science Degree
in Architecture and Building Design**

DIRECTOR: Mr. Robert Stern

The Program

The M.S. degree in Architecture and Building Design is a three-term program consisting of summer, autumn, and spring terms.

The objective of the program is to provide outstanding young professionals who hold B.Arch. or M.Arch. degrees the opportunity to enter into an intensive postgraduate study of architectural design and discourse that simultaneously enhances their architectural abilities and encourages critical thought. The research and design work produced in the studios draws to a large extent on the unique possibility of observing New York City as a "design laboratory." The intention of the program may be articulated as follows:

1. To engage the mind in a complex definition of architecture: from the questioning of the program to the elaboration of design.
2. To engage the student in the production of the objects—drawings, models, etc.—which may give the subject of architecture tangible, visible, and measured presence.
3. To encourage the student to confront culture, knowledge, and intuition in the making of an architecture that goes beyond stylistic issues to satisfy larger conceptual, social, and human values.

Admissions

Applications are due February 15. All applicants for admission to the program must have a B.Arch. or M.Arch. degree or equivalent. In addition to the application form and required supporting documents, applicants must submit a portfolio containing examples of their architectural designs, particularly from the last two years of undergraduate training. The portfolio should not exceed 8½ by 11 inches, should not measure more than ½ inch in thickness, and should be submitted with the application. The portfolio will be returned by mail only if sufficient postage and packaging are included and if the return address is indicated on the portfolio. The Graduate Record Examination (GRE) is *not* required.

Applicants for this program enter in the summer term; they must attend on a full-time basis.

Organization of the Program

The program is viewed as a framework in which both academic and professional concerns are explored. A set of required studios and courses is enhanced by limited and open electives that are shared with other programs in the School and that promote intellectual cross-fertilization among disciplines. Two required courses in 20th-century and contemporary theory, exclusive to the program, provide grounding for architectural exploration in the studio. "Limited electives" are those School offerings designated as appropriate by the director. "Open electives" are of the student's choice. Autumn and spring studios are shared with final year Master of Architecture students.

Program Requirements

The M.S. degree in Architecture and Building Design requires 45 points in the following curriculum.

Summer Term

A6853	Design studio, I	9 pts
A4421	Theories of 20th-century avant-garde architecture	3 pts
A4028	Building New York or	3 pts
A6769	History of the American city	

 15 pts

Autumn Term

A4005	Design studio, II	9 pts
A4303	Critical positions in architecture	3 pts
	Limited elective	3 pts
		<hr/> 15 pts

Spring Term

A4006	Design studio, III	9 pts
	Limited elective	3 pts
	Open elective	3 pts
		<hr/> 15 pts

Note: Students are strongly advised to take one additional 3- or 4-point elective during each term. No extra tuition is charged between 15 and 19 points. Courses may be dropped until the last day of classes.

**Master of Science Degree
in Architecture and Urban Design**

DIRECTOR (ACTING): Mr. Roy Strickland

The Program

The M.S. degree in Architecture and Urban Design is a three-term, second professional degree program that introduces architects to a variety of scales of design intervention beyond the single building. Through design studios and support courses in history, theory, and public policy, students expand their vocabulary for describing and shaping the form of the city. As part of the School, the program is uniquely positioned to combine the resources of Columbia University with those of New York City. The program's terms consist of summer, autumn, and spring.

The focus of the program is the design studio. In it, students are given the opportunity to explore diverse issues such as urban morphology, the public domain, land use, and large-scale development. Through interaction with the faculty, students learn the formal, symbolic, planning, and social implications of their design work as they test their design hypotheses through a critical sense developed from support courses in the cultural, social, economic, and political processes that shape urban form. In the program, such processes are presented as both means toward the implementation of urban design and as challenges which must be confronted by students and faculty as they seek to expand the intellectual content and physical consequences of the discipline. As a result, the program is a laboratory for design that emphasizes the most rigorous exploration of possibilities for creating urban form.

Admissions

Applications are due February 15. All applicants for admission to the program leading to the M.S. degree in architecture and urban design must have a B.Arch. or M.Arch. degree or the equivalent. In addition to the application form and required supporting documents, applicants must submit a portfolio containing examples of their architectural designs, particularly from the last two years of undergraduate training. The portfolio should not exceed 8½ by 11 inches, should not measure more than ½ inch in thickness, and should be submitted with the application. The portfolio will be returned by mail only if sufficient postage and packaging are included and the return address is indicated on the portfolio. The Graduate Record Examination (GRE) is *not* required.

Applicants for this program enter in the summer term; they must attend on a full-time basis.

Organization of the Program

The program's summer term provides an immersion in urban history and urban design theory while autumn and spring terms emphasize methodologies and practice. Throughout, studios offer increasingly complex projects, often focused on (but not limited to) New York City and/or its metropolitan area. To encourage urban design as a multi-disciplinary endeavor, students are advised to take a three- or four-point elective each term from the School's offerings in architecture, planning, preservation, and real estate development. Suggested electives in the autumn term are those deemed appropriate by the director of the program.

Program Requirements

The M.S. degree in Architecture and Urban Design requires 45 points in the following curriculum:

Summer Term

A6848	Studio, I	9 pts
A6868	Elements of urban design	3 pts
A4028	Building New York	3 pts
	or	
A6769	History of the American city	
		<hr/> 15 pts

Autumn Term

A4005	Studio, II	9 pts
A4028	Building New York	3 pts
	or	
A6769	History of the American city	
Pl A4714	Legislating aesthetics	3 pts

Suggested electives:

PLA6001 History and theory of urban planning

or

A4536 Development and finance

15 pts

Spring Term

A4006 Studio, III

9 pts

A6420 Issues in contemporary practice

3 pts

A6052 Planning, law, and administration

3 pts

or

A4539 Advanced development and finance

15 pts

Note: Students are strongly advised to take one additional 3- or 4-point elective during each term. No extra tuition is charged between 15 and 19 points. Courses may be dropped until the last day of classes.

Master of Science Degree in Urban Planning

DIRECTOR: Ms. Saskia Sassen

The Program

The primary purpose of the M.S. degree in Urban Planning is the education of students so that they may contribute their knowledge, skills, and understanding to improving the quality of life in urban society and addressing the major urban issues of the day. Course work, field work, and research are means to this end. The faculty is committed to the vision of an improved city with expanded opportunity, social justice, and a better quality of life.

Urban planning is inherently an economic, social, political, and physical process that applies technical knowledge, research findings, and past experience to the city of today and tomorrow. The real challenge of planning education today is the effective integration of architectural design and technical skills with the methods of applied social science to ensure sensitive physical and social planning. The program meets this challenge through a curriculum that provides students with a thorough understanding of the basic processes that produce built environments, as well as the techniques necessary to intervene effectively in these processes.

The emphasis of the program is on physical and social planning in very large cities and comparative urbanization. Housing, urban land markets, planning law, and environmental planning are among the major subjects covered. The fundamental event in urban life today, and in the foreseeable future, is the dramatic restructuring of the built environment that is under way in large, mature cities in the United States and abroad. This restructuring is the product of a com-

plex, poorly understood transformation of the economic, demographic, social, and technological forces governing urban development. Nowhere is this restructuring more pronounced than in New York City, with its jarring juxtapositions of abandonment and gentrification, industrial exodus and office expansion, private wealth and public austerity. The city is often the first to experience new urban phenomena and public policy responses, making it the perfect laboratory in which to study the problems and opportunities inherent in the restructuring process.

Admissions

Applications are due February 15. The master's program prepares students from many different backgrounds for careers as professional planners. Applicants frequently have majored in architecture, engineering, sociology, political science, geography, economics, or urban studies. All applicants are required to take the Aptitude Test of the Graduate Record Examination (GRE). Information may be obtained from the Graduate Record Examination, Educational Testing Service, Box 955, Princeton, New Jersey 08540.

Organization of the Program

The program combines critical perspectives on the process of urban, social, economic, and physical change in large cities with the technical skills required for professional practice.

Central to the curriculum in Urban Planning is the articulation of space (understood as material form, not mere geographic territory) and social and physical urban processes in their various embodiments: the economy, social and physical services, population, the political and administrative institutional framework, and the built environment. This concern with the spatial-social nexus in the analysis and theorizing of urban processes is cast along comparative lines and focused especially on very large cities. Organizing the curriculum are questions about the efficiency and equity of planning models and practices and their differences in market and state-run economies, and, on a more theoretical level, questions of urban form.

The focus on planning in very large cities stems from a recognition of the importance of the context within which planning takes place. Columbia's location in New York City and the interest that this city has had for planners and scholars are prime reasons for this choice. The focus on planning in very large cities should also serve as the medium for a comparative perspective. Such a perspective has promise because it is in such cities that the major development issues on both the North-South and East-West axes are playing themselves out. Members of the faculty are currently working on or in various major cities: London, Tokyo, Berlin, Cairo, Lagos, Karachi, Bangkok, Mexico City, and Moscow.

Pedagogically, this program is centered on the belief that the best professional education takes place in an environment of learning by doing, reinforced by classroom work that provides a thorough understanding of the economic, social, political, and physical aspects of the comprehensive planning and analysis of the

built environment. This approach is implemented by a program of requirements, which includes a workshop in planning skills, a planning studio, courses in analytic methods, and courses in planning theory and practice.

Program Requirements

Students are required to complete 39 points in eleven core courses, 9 points in a sector specialization of their own choosing, and 12 additional points in elective courses. Students may take courses offered elsewhere in the University to fulfill some or all of their elective requirements. A master's thesis is also required.

Term 1

Pl A4208	Analytic methods, A	3 pts
Pl A6001	Theory and practice of urban planning	3 pts
Pl A6290	Workshop in planning skills	3 pts
Pl A4112	Physical structures of cities	3 pts
	Sector specialization elective	3 pts

Term 2

Pl A4206	Analytic methods, B	3 pts
Pl A6911	Planning studio	3 pts
	Sector specialization elective	3 pts
	Elective	3 pts

Term 3

Pl A6850	Research design	3 pts
Pl A4151	Foundations of urban economic analysis	3 pts
	Sector specialization elective	3 pts
	Electives (2)	6 pts

Term 4

Pl A6225	The planning process	3 pts
Pl A6918	Thesis	3 pts
Pl A6052	Planning law and administration	3 pts
	Electives (2)	6 pts

Sectors

A minimum of three courses must be taken within a sector to fulfill the sector specialization requirement. A student interested in concentrating in a sector not listed below may construct his or her own specialization, subject to the approval of the program director. The following four sectors are offered in the Urban Planning Program:

Housing

International Comparative Planning

Physical Planning and Infrastructure Development

Urban Economic Development

The Ph.D. Program in Urban Planning

DIRECTOR: Ms. Saskia Sassen

The Program

The Ph.D. Program prepares students for careers in teaching, research, and advanced practice in the fields of urban theory, policy, and planning. The program has as its specific field of inquiry the articulation of space (understood as material form, not mere geographic territory) and social and physical urban processes in their various embodiments: the economy, social and physical services, population, and the political and administrative institutional framework. Organizing this inquiry are questions related to the efficiency and effectiveness of planning practices and their differences in market or centralized economies and, on a more theoretical level, questions of urban form.

Admissions

Applications are due January 1. An applicant is expected to hold a master's degree in urban planning or in a related discipline and have excellent academic credentials, with a grade average of B+ or better. In addition, an applicant is required to have completed at least 90 points of undergraduate liberal arts courses in the social sciences, humanities, or natural sciences, and the core courses provided in the master's-level curriculum in the Urban Planning Program at the School.

Students without a master's degree may be admitted to the Master's Program in Urban Planning with a "Notation of Intent" to apply for the Ph.D. Program. Upon completing the master's degree, their application for admission to the doctoral program will be considered.

The Ph.D. Program is part of the Graduate School of Arts and Sciences. Application forms should be requested from the director or directly from the Office of Admissions, Graduate School of Arts and Sciences, Room 107 Low Memorial Library, Columbia University, New York, N.Y. 10027.

Organization of the Program

Each student is expected to acquire advanced knowledge in the following areas:

1. Urban Theory
2. History and Theory of Planning
3. Research Methods in Planning
4. Sector Specialization
5. Related Discipline or Field

At the center of the Ph.D. curriculum are the two seminars on Planning Theory and Planning History (*Planning A6001* and *Planning A6002*). Planning theory provides students with advanced knowledge of theories that inform planning practice and theory. There are three broad areas from which planning theory draws and upon which the seminar must rest: (1) theories of urban form, (2) theories of the state and of collective decision making, and (3) theories of planning action. The first area of theory is the study of urban form and social scientific theo-

ries of built form and space. The second area draws almost exclusively from the social sciences; political science, sociology, and economics in particular. It seeks to explore the ways in which collective decisions evolve in complex urban societies and the role of public action at the urban level. The final area of theory attempts to provide understanding of how planning is actually done in various institutional settings. This final field draws heavily on the planning literature and literature about planning in related disciplines. The Planning History Seminar focuses on major works in planning history and major themes and issues in the history of planning. These two courses, in addition to the Ph.D. research colloquium (*Planning A8900-A8901*), are taught by senior faculty in planning.

Students are required to take two courses in advanced methods. One of them is the Advanced Seminar in Systems Analysis (*Planning A8220*). The other may be taken in another department in the Graduate School of Arts and Sciences.

Finally, students are expected to take one or two advanced seminars in specialized planning fields, such as housing, urban land markets, comparative urbanization, or comparative physical planning. Students may and are encouraged to take courses in their field of specialization or related fields in other departments of the University.

M.Phil. Examination Requirement

There are comprehensive examinations in History and Theory of Planning and in the Sector Specialization. These are eight-hour written exams read by a committee of at least three members of the Doctoral Program Subcommittee in Urban Planning. Students must pass these exams satisfactorily before they can present and defend their dissertation proposal. The exams are normally taken at the end of the spring term or in the summer. Any student who has satisfactorily passed the comprehensive examination and had a Ph.D. dissertation proposal accepted, will be awarded the M.Phil. degree.

Dissertation proposals must be approved by the main advisor and are presented and defended in front of at least three members of the Ph.D. Program Steering Committee in addition to the advisor. Completed dissertations must be approved by the main advisor before they can be defended in front of a dissertation committee.

Program Requirements

History and Theory of Planning

Each student is required to complete a minimum of three courses in the history and theory of planning. Two of the three courses are the Advanced Seminars in Planning History and Theory. Among the topics covered are the genesis and structure of planning thought and methods; economic, political, and social factors influencing the development of planning theories and policies; the theory and development of urban structures; and the history of cities.

Research Methods in Planning

This requirement is intended to develop the social science, planning, and evaluation skills expected of a planning scholar. Two courses in advanced methods are required.

Sector Specialization

Sector specializations provide students with the substantive backgrounds for their individual scholarly interests. The following list of typical fields is intended to be suggestive, not exclusive:

- Planning History and Theory
- Urban Spatial Theory
- Economic Development
- Physical Planning
- Transportation
- Housing
- Community Development
- Health and Human Services Planning
- Comparative Planning

Related Discipline or Outside Field

This requirement helps students to relate their urban planning interests to a broader field of intellectual inquiry. It is normally met by the completion of a minimum of three courses in the area chosen or by previous work. In either case, a letter from a University faculty member expert in that area attesting to the completion of the requirement is needed. The following are examples of related disciplines and outside fields: anthropology, art history, economics, geography, history, law, political science, public health, social work, sociology, historic preservation, urban design, and international affairs.

Degree Requirements

Examinations

Required examinations will be offered at the end or the beginning of the autumn or spring terms; none will be offered during the summer session. They will be graded (Pass with Distinction/Pass/Fail) by the Ph.D. Examination Committee. No examination can be taken while Incompletes in that area are outstanding.

The Examination Committee will comment in writing to the student on his/her written responses after each examination, and those comments shall be included in the student's file. If the committee determines that the student has not satisfactorily passed, the student shall be eligible for reexamination, but not more than once for each examination.

Course Credits and Grades

Students may earn either Examination Credit (E credit) or Registration Credit (R credit). E credit is granted after regular evaluation of student's work in a course

and is expressed as a letter grade: A (excellent), B (good), C (fair), D (poor), and F (failure), or Inc (incomplete). A student has one year to make up an Incomplete. After that time, the grade will automatically be changed to an R, except in the case of seminars.

R credit is earned when the student attends a course without any obligation to take examinations or do other assigned work. Once awarded, the grade is not subject to change, nor may a course taken for R credit be repeated for Examination Credit. Both E and R credits are entered on a student's permanent record and are counted toward residence requirements. A student may also audit courses, with the approval of the instructor, but without receiving any credit.

The Graduate School of Architecture, Planning, and Preservation uses a Pass/Fail/Incomplete grading system. Ph.D. students, however, must receive letter grades.

Note: No more than 15 of the 75 points of required work can be taken for R credit—or 9 out of 45 points if 30 points of advanced standing has been granted, or 12 out of 60 points, if 15 points of advanced standing has been granted.

Languages

No general language requirement is imposed on students in the Ph.D. Program. The literature in the field relevant to the work of planning students concentrating on areas within the United States today is, by and large, available in English; knowledge of additional languages is professionally necessary only for students in certain areas of specialization. At the time of the first meeting of the student's Ph.D. Committee, and again at the committee meeting with the student to review the Ph.D. dissertation proposal, a determination will be made whether such a requirement is appropriate. For example, it is anticipated that a student taking as a sectoral specialization urban planning in less-developed countries, or one writing a comparative international study of one aspect of planning will require a mastery of foreign languages appropriate to the particular interest. Where such knowledge is required, proficiency must be established to the satisfaction of the director of the doctoral program.

Master of Philosophy Degree

Any student who has satisfactorily passed the comprehensive examinations and has had a Ph.D. dissertation proposal accepted, will be awarded the M. Phil. degree.

Any student who receives fewer than two Residence Units of advanced standing must complete the work for the M.Phil. degree within *four years*. If a student receives two Residence Units of advanced standing, all degree requirements must be completed within *three years*.

Time Limit and Extended Residence

A student must complete all requirements for the Ph.D. degree within seven years after initial registration, or within six years if awarded advanced standing of

two Residence Units. Rare exceptions to this rule are recommended by the program and granted by the dean of the Graduate School of Arts and Sciences.

A student who has satisfied the minimum residence requirements is eligible to enroll for Extended Residence at a reduced fee. This applies to *any term* in which a student has yet to complete either course work, language requirement, qualifying examinations, or the defense of the dissertation. Exception is made for students who defend a dissertation if they were registered either for a Residence Unit or Extended Residence in the term immediately preceding the defense, in which case they pay the Matriculation and Facilities Fee.

Students who are *not* completing degree requirements as described above, and who are *not* required to register for a Residence Unit or Extended Residence as a condition of their fellowship or University appointment, can satisfy the requirement for continuous registration and maintain their status by paying the Matriculation and Facilities Fee, which allows them to make use of various University facilities.

Joint Degree Programs

For joint degree options in the Urban Planning Program, please consult the Joint Degree Programs section of this bulletin.

Master of Science Degree in Historic Preservation

DIRECTOR: Mr. Michael Kwartler

The Program

The M.S. degree in Historic Preservation is the oldest and most comprehensive program of its kind in the United States. It provides specialized training for those who wish to be professionally active in preservation. The program's fundamental concern is the centrality of the meaning of the past to the living present as an essential component of a community's sense of well-being. This concern is manifested in the conscious retention of meaningful elements of both the built and natural environment and reflects an underlying belief in the validity of historical continuity between the past, present, and future.

The field of historic preservation encompasses professional activity in diverse situations. In part, historic preservation is the management of cultural resources, as it deals with the identification and protection of meaningful elements of both the built and natural environments. These elements range in scale from interiors and their furnishings, to entire urban and rural regions and include buildings, building complexes, neighborhoods, and landscapes. Protection includes not only the physical act, but also the institutional means, both legal and economic, to support that act. As our history is part of the living present, preservation also is concerned with the management of change that is responsive to protected ele-

ments of the past. These include special conservation treatments, the insertion of modern services, the adaptive re-use of historic fabric, and the design of new buildings and building complexes appropriate to their historic context.

The Columbia program offers concentrations in four sectors that correspond to the field of preservation: architectural and landscape design, history, building and landscape conservation, and preservation planning. Architectural design focuses on the making of appropriate design interventions, history with the documented identification and understanding of significant components of the past, building conservation with the analysis and stabilization of specific physical components of the past, and preservation planning with the contextual analysis of the environment and the identification of appropriate legal and financial procedures for protection. In practice these sectors overlap, and the Columbia program recognizes that overlap through its core curriculum comprised of courses from each sector and the theory and practice of preservation. This ensures the learning of a common language and facilitates later professional cooperation and understanding.

Course work: 60 points are required. During the first year, all degree candidates study methods of documentation and building conservation, American architectural and environmental history, and the theory and practice of historic preservation planning, and participate in two design studios, one of which focuses on preservation planning policy. Before beginning their second term, students are required to select the sector that represents their area of concentration or focus. Submission of a thesis topic is a requirement for registration in the autumn of the second year. Research for the thesis in the autumn of the second year culminates with a report to the thesis advisor; the completed thesis is presented in the spring term.

The remainder of the work consists of lectures, seminars, preservation studios, and laboratory courses in conservation.

Registration: Continuous registration is required until graduation. Degree candidates must complete all requirements within five years of enrollment as matriculating students. With departmental permission, a grace period of one year in which registration is not required may be allowed after completion of four terms of course work, but the use of University facilities and health services is not allowed without registration. After the grace period students must re-enroll and pay fees in order to receive the degree.

Related activities: Local community involvement is encouraged whenever appropriate. Special ties are maintained with New York City institutions such as the Metropolitan Museum of Art, the Landmarks Preservation Commission, the Landmarks Conservancy, the Temple Hoyne Buell Center for the Study of American Architecture, and the Center for Preservation Research and its laboratory. These ties provide additional educational opportunities and further enrich the program.

Field trips: Each year, field trips are organized to a variety of sites, principally in the Northeastern United States and occasionally to national conferences sponsored by organizations such as the Association for Preservation Technology, the Society of Architectural Historians, and the National Trust for Historic Preserva-

tion. The University provides major funding for transportation and lodging through the William Kinne Fellows Traveling Fellowship Fund. All students are required to participate in at least one field trip.

Internships: All students are required to complete a summer internship before receiving a degree. Students are individually responsible for securing internships, but are assisted in this by a special committee within the program. Internships should be approved in advance by the director and are recognized as completed upon receipt of a letter of evaluation from the internship supervisor sent to the director and a brief report from the student summarizing the work. In certain cases, work done before entering the program is accepted in lieu of an internship.

Prerequisites: Because of the interdisciplinary nature of preservation, no specialized training is required for entrance into the program with the following exceptions:

- For all students, at least one undergraduate survey in architectural history and one basic drafting or drawing course;
- For students in the design sector, a professional degree in architecture or landscape architecture;
- For students in the conservation sector, at least one undergraduate course in chemistry, physics, biology, or earth science.

Admissions

Applications are due February 15. Applicants for admission to the M.S. degree in the Historic Preservation Program must first hold a degree in architecture, landscape architecture, art history, American studies, history, or other related fields. It is required that candidates holding nonarchitectural degrees take a course in architectural drafting. Drafting courses are generally available in vocational and community colleges. The course does not carry credit toward the M.S. degree. All applicants are required to take the Aptitude Test of the Graduate Record Examination (GRE). Information may be obtained from the Graduate Record Examination, Educational Testing Service, Box 955, Princeton, New Jersey 08540.

It is also strongly recommended that students who have little or no background in the history of architecture take the equivalent of two terms of the history of architecture or prepare themselves by reading books on basic architectural history. (A reading list is provided on request.)

Applicants may enter only in the autumn term.

Program Requirements

All students in the Historic Preservation Program must complete eleven core courses, required and elective courses in one sector, and other electives, for a total of 60 points. The following eleven core courses are required:

A6740	Theory and practice of historic preservation	3 pts
A6745	Documentation, I	3 pts
A6767	Preservation planning	3 pts

A6730	American architecture before 1876	3 pts
A6766	Conservation science	3 pts
A6769	History of the American city	3 pts
A4210	Basic principles of traditional construction	3 pts
A6750	Historic preservation studio, II	4 pts
A6751	Thesis, I	3 pts
A4510	Design principles for preservation (students in design sector substitute <i>Architecture A6749—Historic preservation studio, I</i>)	3 or 4 pts
A6753	Thesis, II (students in design sector substitute <i>Architecture A6775—Historic preservation studio, IV</i>)	3 or 4 pts

Design Sector

This sector provides students with the increased historical and technical knowledge needed by architects for the successful solution of design problems involving historic structures. It also enhances aesthetic sensitivity through exposure to problems of restoration, adaptive use, and infill design of differing scales. These problems are addressed in studio work, which is emphasized in this sector. Solutions to studio problems require careful consideration of such factors as the history of the structure and its use, the conservation of materials, the evaluation of existing structural and mechanical systems, as well as the integration of new systems, and the applicable legal and contractual constraints. Courses supplementing studio work are focused on these areas.

Completion of a thesis is a requirement for those students who, after satisfactorily completing the stated prerequisites, choose to pursue the design sector. Preparation of the thesis occurs in *Architecture A6751—Thesis, I*. Submission of all materials is required by the end of the autumn term for completion of *Thesis, I*. Midterm progress reviews are also required. These materials include, but are not limited to, written analysis of the project, a proposed program, and all appropriate base drawings. The thesis is executed and brought to completion in *Architecture A6775—Historic preservation studio, IV* under the direction of a studio critic or thesis adviser.

Design Sector: Requirements

Prerequisite: a professional degree in architecture or landscape architecture.

Required:

A6710	Building systems integration	3 pts
A6750	Historic preservation studio, II	4 pts
A6774	Historic preservation studio, III	7 pts
A6775	Historic preservation studio, IV	4 pts

Sample of sector electives (choose three courses):

A6762	Building pathology	3 pts
A6734	Classical language and literature of architecture	3 pts
A6738	Investigative techniques for historic structures	3 pts
A6761	Conservation seminar: masonry	3 pts
A6754	Special problems in	3 pts

A6772	Vernacular architecture	3 pts
A6780	Preservation trade techniques	3 pts
A6785	Modernism in America	3 pts

History Sector

The history sector relates academic studies to preservation practice. Basic problems in design and building construction, as well as training in the preparation of measured drawings and historic structure reports, provide a practical base for a full range of graduate courses on the history of American and European architecture, decorative arts, urbanism, and related developments. In courses offered by other programs in the School and by the Department of Art History and Archaeology, this sector is broadened by covering parallel developments outside America. The thesis allows students the opportunity to apply their knowledge to an actual situation and to demonstrate how history provides a rationale for preservation.

History Sector: Requirements

Required:

A6738	Investigative techniques for historic structures	3 pts
A6731	American architecture after 1876	3 pts

Sample of sector electives:

A6732	American decorative arts	3 pts
A6310	History of landscape architecture	3 pts
A6734	Classical language and literature of architecture	3 pts
A6772	Vernacular architecture	3 pts
A4372	Skyscrapers: art, technology, and commerce	3 pts
A6724	Arcades, markets, and malls	3 pts
A4378	History and theory of architectural preservation in Europe: 1790-1950	3 pts
A6723	Architecture of the American acropolis	3 pts
A6785	Modernism in America	3 pts

Conservation Sector

This sector provides students with the technical and theoretical knowledge required for the examination, documentation, and analysis of historic structures and materials. It also establishes a background for the diagnosis and treatment of building pathology. These issues are addressed through a synthesis of lectures, laboratory work, field studies, and the trade techniques workshop designed to combine a range of special architectural and scientific skills. These skills, which are required for maintaining the integrity and quality of the built environment, include the history of architecture and building technology, graphic and written documentation, materials science, and analytical laboratory and field techniques.

Conservation Sector: Requirements

Prerequisite: at least one undergraduate course in chemistry, physics, biology, or earth sciences.

Required:

A6763	Advanced conservation science and lab	3 pts
A6738	Investigative techniques for historic structures	3 pts

Sample of sector electives:

A6780	Preservation trade techniques	3 pts
A6762	Building pathology	3 pts
A6754	Special problems in preservation practice	3 pts
A6761	Conservation seminar: masonry	3 pts
A6739	Conservation seminar: stained glass	3 pts
A6782	Conservation seminar: wood	3 pts
A6712	Architectural finishes in America from 1650 to 1950	3 pts
A4378	History and theory of architectural preservation in Europe: 1790–1950	3 pts
A6731	American architecture after 1876	3 pts
A6732	American decorative arts	3 pts
A6734	Classical language and literature of architecture	3 pts
A6768	Conservation seminar: metals	3 pts

Planning Sector

The preservation planning sector combines two strategies. The first stresses the historical and planning analyses, contextual evaluation, and physical design of the built environment. The second focuses on regulatory, legislative, economic, and planning methods used to conserve historic neighborhoods, rural landscapes, or recycled structures. These two strategies are intended to link a historical understanding of land development patterns with the analysis of interventionary methods, and link also with economic and political contexts where these forms have been determined. Both studio and thesis emphasize preservation planning issues and allow the student an in-depth opportunity to explore, develop, and criticize preservation strategies.

Planning Sector: Requirements

Required:

Pl A4208	Analytic methods, A	3 pts
A4714	Legislating aesthetics	3 pts
Pl A6056	Planning law and administration	3 pts
A6767	Preservation planning	3 pts

Sample of sector electives:

Pl A4206	Analytic methods, B	3 pts
Pl A6001	Theory and practice of urban planning	3 pts
A6723	Architecture of the American acropolis	3 pts

A6724	Arcades, markets, and malls	3 pts
A6759	Politics of preservation	3 pts
A6770	Issues of urban preservation	3 pts
Pl A4210	Introduction to computers in planning and preservation	3 pts
Pl A4304	Introduction to housing	3 pts
Pl A4312	Real estate finance, I: capital markets	3 pts
Pl A4540	Environmental planning	3 pts

Electives

Electives are subject to approval by each student's adviser and may be chosen from other offerings in historic preservation, from other programs in the School, from the Department of Art History and Archaeology, or from graduate courses offered by other departments of the University.

Waivers from required courses can be granted when proof of comparable course work is presented. Points released by such waivers will increase allowance for electives.

Advanced Standing

Any student who has already received a master's degree in architecture may apply for up to 24 points of advanced standing toward a master's degree in historic preservation, provided the student chooses the design sector.

Joint Degree Programs

For joint degree options in the Master of Science in the Historic Preservation Program, please consult the Joint Degree Programs section of this bulletin.

Master of Science Degree in Real Estate Development

DIRECTOR: Mr. Charles Laven

The Program

The School offers an intensive one-year Master of Science degree in real estate development that prepares students to enter the real estate development industry. This industry plays a critical role in shaping the built environment through the construction of housing, offices, commercial centers, and industrial sites. It creates not only structures, but also employment, tax revenues, public spaces, cultural symbols, and social environments of lasting significance. While the private sector dominates real estate development, government agencies, public benefit corporations, and nonprofit groups are increasingly active participants.

The program of study provides an interdisciplinary, carefully coordinated exposure to all major elements of the development process: finance, marketing, politics, law, design, construction, planning, and history. Students are trained for responsible positions in the private sector or real estate development,

with particular emphasis on the skills and sensitivities necessary to develop real estate successfully in our nation's major urban areas.

Admissions

Applications for admission to the program leading to the M.S. degree in real estate development are due February 15. Applicants may hold degrees in a range of fields. While academic preparation in development-related disciplines such as economics, business, law, engineering, historic preservation, architecture, and urban planning is highly desirable, it is not essential for admission to the program. In addition to submitting the normal application material, students are required to take the Aptitude Test of the Graduate Record Examination (GRE). The test should be taken no later than two months before applications are due. Information may be obtained from the Graduate Record Examination, Educational Testing Service, Box 955, Princeton, New Jersey 08540.

Program Requirements

The Master of Science degree in real estate development is a one-year, 36-point degree. Students attend full-time during the autumn and spring terms, complete their final real estate development projects immediately following the spring term, and are awarded degrees in October. In the courses, theory, quantitative techniques, and extensive case study materials are combined. Students enrolled in the program who have a strong academic background in a required course may petition for a waiver. If a waiver is granted, students may substitute an elective course.

The final real estate development project is begun during the spring term under the supervision of a faculty adviser. Final projects are detailed development proposals, evaluations of important completed projects, or analyses of major public laws or private sector initiatives in real estate development.

Autumn Term

Pl A4312	Real estate finance, I: capital markets	3 pts
Pl A4538	The development process: concept to completion	3 pts
Pl A6352	Market analysis for development	3 pts
Pl A6354	Political environment of development	3 pts
Pl A6356	Construction technology and management	3 pts
	Elective	3 pts

Spring Term

Pl A4314	Real estate finance, II: advanced financial packaging	3 pts
Pl A6330	Site planning and support systems for development	3 pts
Pl A6332	Legal environment of development	3 pts
Pl A6350	Design and technology for development	3 pts
Pl A6335	Real estate development seminar	3 pts
	Elective	3 pts

Real Estate Development Advisory Board

Since its inception the Real Estate Development Program has been assisted by a group of distinguished individuals in the field of real estate. These individuals serve as an Advisory Board for the program, meeting periodically to discuss the program and the industry and frequently visiting the School as guest lecturers. The Advisory Board members include representatives from the financial, architectural, and development worlds, as well as academics and public sector representatives.

Kent Barwick

President, Municipal Art Society of New York

Dennis Blackett

President, Housing Innovations, Inc.

J. Max Bond, Jr.

Dean, School of Architecture, City College

John Burgee

John Burgee Architects with Philip Johnson

Stanton Eckstut

Cooper, Eckstut Associates

Scott A. Ervin

Executive Vice President

First Boston Real Estate Development Corporation

Irving R. Fischer

Chairman, HRH Construction Corporation

Charles A. Goldstein

Partner, Shea and Gould

Benjamin D. Holloway

Chairman, Equitable Real Estate Group, Inc.

George Klein

President, Park Tower Realty

Anthony Knerr

Executive Vice President for Finance and Treasurer

Columbia University

A. Eugene Kohn

President, Kohn Pedersen Fox Associates

Benjamin V. Lambert

President, Eastdil Realty Inc.

Phil LaRocco

Director, Economic Development Department

Port Authority of New York and New Jersey

Stephen Lefkowitz
Partner, Patterson, Belknap, Webb & Tyler

Edward Logue
President, Logue Development Company

Robert Maguire
Maguire Partners

J. Frank Mahoney III
Chairman and President of the Commercial Group
Coldwell Banker

Martin L. Millspaugh
Executive Vice President
The Enterprise Development Company

Edward Minskoff
Executive Vice President, Olympia and York

Jack Naiman
The Naiman Group

Frederic S. Papert
President, 42nd Street Development Corporation

Philip Pilevsky
President, Philips International Holding Corporation

Michael V. Prentiss
President, Cadillac Fairview Urban Development, Inc.

Frederick P. Rose
Chairman, Rose Associates

Sheldon Seevak
Partner, Goldman, Sachs and Company

Charles A. Shorter
Senior Vice President
Real Estate Research Corporation

Jean Solomon
President, Solomon Equities, Inc.

Jerry I. Speyer
Managing Partner, Tishman Speyer Properties

Louise M. Sunshine
President, Sunshine Group Ltd.

Lynda Simmons
President, Phipps Houses

Arthur P. Ziegler, Jr.
President, Cranston Development Company

Joint Degree Programs

To utilize more fully the facilities and resources of the University and to provide opportunities for students to pursue studies in related fields, the School, in conjunction with other departments and faculties, has established several joint degree programs. Each program leads to the award of two professional degrees. Students who wish to enter one of the programs described below must apply to each of the participating schools and be admitted to both. They should consult the respective school's admissions office for further information.

Historic Preservation and Architecture/Historic Preservation and Urban Planning

Requirements are completed in four years rather than the five required for the three-year M.Arch. and two-year M.S. in historic preservation degrees and in three years for the urban planning/preservation degrees. The full requirements for each degree are met in this shortened time by allowing certain courses to count toward both degrees and by using electives from one program to meet requirements in the other.

Admission requirements for all programs must be met. Students may apply to both programs before matriculation by checking both of the appropriate boxes on the application form, or they may apply for the Master of Architecture or Master of Urban Planning after entering the Historic Preservation Program or vice-versa. Upon entering the Historic Preservation Program, those students who indicate to their advisers an interest in applying to either joint degree program are directed to take a special program of courses that allows them to fulfill appropriate historic preservation requirements. Normally, joint degree candidates take their first year of course work in the Historic Preservation Program and begin their comprehensive studio sequence in the second year. In the autumn term of the fourth year, joint degree candidates in architecture and preservation enroll in *Architecture A6751—Thesis, I* for the preparation of the thesis; they execute the thesis in *Architecture A6775—Historic preservation studio, IV*. While third year joint degree candidates in planning and preservation enroll in *Thesis, I* for the preparation of the thesis, they execute the thesis in *Architecture A6753—Thesis, II*.

At any time during the four years, students may elect to withdraw from one program and complete requirements for one degree only. Students in the School initially enrolled in one program may apply during their first year for admission to the other, and in normal circumstances can complete joint program requirements within three or four years. Because of the complexities of point sharing and scheduling, students applying after the first year must be prepared to spend additional time to complete requirements for both degrees.

Urban Planning and Architecture

The Graduate School of Architecture, Planning, and Preservation offers a joint program leading to the degree of Master of Architecture and the degree of Master

of Science in Urban Planning. A student must enroll for 130 points of credit, which may be earned in eight terms in residence in the School.

Urban Planning and Business

The Columbia Business School and the Graduate School of Architecture, Planning, and Preservation offer a joint program leading to the degree of Master of Business Administration and the degree of Master of Science in Urban Planning. A student must enroll for 90 points of credit, which may be earned in six terms in residence—three terms in the Business School and three terms in the Graduate School of Architecture, Planning, and Preservation.

Urban Planning and International Affairs

The School of International and Public Affairs and the Graduate School of Architecture, Planning, and Preservation offer a joint program leading to the degree of Master of International Affairs and the degree of Master of Science in Urban Planning. A student must enroll for 90 points of credit, which may be earned in five terms in residence—at least two terms in the School of International and Public Affairs and three terms in the Graduate School of Architecture, Planning, and Preservation.

Urban Planning and Law

The School of Law and the Graduate School of Architecture, Planning, and Preservation offer a joint program leading to the degree of Juris Doctor and the degree of Master of Science in Urban Planning. A student must enroll for 120 points of credit, which may be earned in eight terms in residence—six terms in the School of Law and two terms in the Graduate School of Architecture, Planning, and Preservation.

Urban Planning and Public Health

The School of Public Health and the Graduate School of Architecture, Planning, and Preservation offer a joint program leading to the degree of Master of Public Health and the degree of Master of Science in Urban Planning. A student must enroll for 80 points of credit, which may be earned in five terms in residence—two terms in the School of Public Health and three terms in the Graduate School of Architecture, Planning, and Preservation.

Urban Planning and Social Work

The School of Social Work and the Graduate School of Architecture, Planning, and Preservation offer a joint program leading to the degrees of Master of Science in Social Work and Master of Science in Urban Planning. A student must enroll for 90 points of credit, which may be earned in six terms in residence—three terms in the School of Social Work and three terms in the Graduate School of Architecture, Planning, and Preservation.

Columbia-Dillard Joint Degree Program in Liberal Arts and Urban Planning

A five-year joint degree program was established in 1985 with Dillard University in New Orleans, leading to a Bachelor of Arts degree from Dillard and a Master of Science degree in Urban Planning from Columbia. It is the first joint degree program in urban planning in the nation between a historic black university and a graduate program in urban planning. Students spend three years as undergraduates at Dillard and two years as graduate students at Columbia.

The Shape of Two Cities: New York/Paris (Special Undergraduate Program)

DIRECTORS: Mr. Roy Strickland, New York
Ms. Meredith Sykes, Paris

The Shape of Two Cities: New York/Paris Program is the School's program for undergraduate students from colleges and universities around the country. The program's first term is spent at the School on the Columbia University campus. The second term is spent at a studio and classroom facility located in the historic Marais district in Paris. The program's goals, achieved through an intensive, one-year curriculum, are to introduce the fields of architecture, planning, and preservation; encourage their exploration in the contexts of history, theory, and practice; and identify and analyze their interrelationships, especially in regard to the making of cities. All classes are conducted in English. The program offers a choice of academic schedules: autumn/spring and summer/autumn. Applicants should select carefully the schedule that best meets their requirements.

Students in the program enroll in either the Architecture Option or the Urban Planning/Historic Preservation Option and share in a core of courses while embarking on their specializations. In the first term the core courses are A6769—*History of the American city*, A4028—*Building New York*, and A4027—*Architecture, planning, and preservation: New York*. In the second term, the core courses are A4030—*The development of Paris*, A4031—*History of European cities*, A4025—*Free-hand drawing*, and A4029—*Architecture, planning, and preservation: Paris*. These courses ground the program in the rigorous review of urban history and urban form, provide the academic structure for the students' comparative analysis of New York and Paris, and complement the liberal arts curricula of participating colleges.

The Architecture Option combines class and studio work to introduce design, architectural theory, and structural concepts. Through a series of increasingly complex projects that are focused on New York and Paris, design studios emphasize form and space-making and the formulation of public and private spaces as they relate to urban morphology. Representational and analytical drawings and model-making are woven into studio projects as a means of developing and criticizing design concepts.

The Urban Planning/Preservation Option emphasizes workshop and seminar work to introduce its fields, which are placed in the contexts of urban and architecture history, historic and contemporary approaches to planning and preservation, and analysis of the social and cultural development of New York and Paris. The first term prepares students to embark on a major independent research project in Paris around a theme developed through discussion with the faculty. The Option emphasizes the combination of research and field analysis as a means for developing historic preservation and urban planning strategies.

Admissions

Applications are due March 15. The program is designed for students who have completed their sophomore year at an accredited college or university. Previous study in architecture, planning, or preservation is not required. Applicants must have the written support of their home institutions.

To apply for admission, the student should submit the following materials to the Office of Admissions: application form, official transcript of academic record, letter of recommendation from the major adviser or an academic dean supporting the application to the program and attesting to the student's ability to live and study abroad, and a \$35 nonrefundable application fee in a check or money order payable to Columbia University. On their applications candidates must indicate their choice of autumn/spring or summer/autumn academic schedules.

Program Requirements

All students applying to the program must choose either the Architecture Option or the Urban Planning/Historic Preservation Option. Each option provides 32 points of course work to be completed in two terms. Courses are taught by faculty members of the Graduate School of Architecture, Planning, and Preservation, and by professional architects, planners, and preservationists in both cities.

Core Courses

TERM I (AUTUMN OR SUMMER): NEW YORK

A4027	Architecture, planning, and preservation: New York	3 pts
A4208	Building New York	3 pts
A6769	History of the American city	3 pts
	Elective	3 pts

TERM II (AUTUMN OR SPRING): PARIS

A4025	Freehand drawing	3 pts
A4029	Architecture, planning, and preservation: Paris	3 pts
A4030	The development of Paris	3 pts
A4031	History of European cities	3 pts

Architecture Option Courses

TERM I (AUTUMN OR SUMMER): NEW YORK

A4000 Design studio 4 pts

TERM II (AUTUMN OR SPRING): PARIS

A4010 Design studio 4 pts

Urban Planning/Historic Preservation Option Courses

TERM I (AUTUMN OR SUMMER): NEW YORK

C3610 Workshop in urban studies 4 pts

TERM II (AUTUMN OR SPRING): PARIS

A4044 Seminar in comparative planning and preservation 4 pts

Summer Session

The Graduate School of Architecture, Planning, and Preservation offers during the summer session undergraduate courses appropriate for students taking an architecture major in a liberal arts program or considering entering an architecture degree program. The courses listed below do not carry credit toward the graduate programs in the School.

Focus on Design

Architecture S1003Q and *S1004Q* comprise a preprofessional program for those who are interested in architecture and may be considering it as a career. Enrollment in both courses is encouraged; however, students are permitted to register for either course independently. Students should request a Summer Session application from the Office of Admissions and return it with the \$30 application fee. An official transcript of the applicant's most recent work is required. When the application is complete, the Office of Admissions will notify the applicant of the admission decision.

Architecture S1003Q Focus on design: a New York experience. 3 pts A. Kaufman and the staff.

Using New York City as a laboratory, the course develops an awareness of the relationships between the history, theory, and practice of architecture. Lectures and workshops as well as field trips to professional offices, museums, and building sites address these issues. The sequence of topics relates directly to the design problems of the afternoon studio. An evening lecture/film series supplements the Focus on Design Program.

Architecture S1004Q Focus on design: the architecture studio. 3 pts A. Kaufman and the staff.

Introduces students to the architecture studio, the basic environment in which education in architecture takes place. Students work with architects on a series of design projects and present their individual designs both informally and in formal "juries." Although the studio is structured to aid in the development of skills for those with no prior education in design, students with some background are encouraged to attend.

Prerequisites for the M.Arch. Program

Architecture S1020W Architectural representation: introduction. 3 pts The staff.

Only for students admitted to the M.Arch. Program who need this course as a prerequisite.
Intensive preprofessional introduction to architectural representation skills.

Architecture S3320W Issues in architectural theory and history. 3 pts The staff.

Only for students admitted to the M.Arch. Program who need this course as a prerequisite.
Examination of 20th-century design theories and design methods; functionalism, contextualism, typology.

Columbia/Barnard Undergraduate Architecture Majors

DEPARTMENTAL REPRESENTATIVE TO COLUMBIA COLLEGE:

Mr. Roy Strickland

DIRECTOR, BARNARD COLLEGE ARCHITECTURE MAJOR:

Ms. Donna Robertson

Columbia and Barnard Colleges of Columbia University offer undergraduate architecture majors leading to the Bachelor of Arts degree. Students generally begin the architecture majors in their sophomore year after being admitted to one of the colleges, whose admissions criteria are detailed by their respective admissions offices and bulletins.

For information, bulletin, and application materials, applicants for Columbia College should call (212) 854-4251; for Barnard College, (212) 854-2014. **APPLICANTS SHOULD NOT USE THIS BULLETIN OR APPLICATION FOR ADMISSION TO COLUMBIA AND BARNARD COLLEGES.**

The undergraduate majors maintain their own studio and academic requirements that are related to Columbia and Barnard Colleges' respective liberal arts curricula. Although the majors differ in certain of their requirements and pedagogical intentions, students in both majors are given the background to pursue architecture at the graduate level or move to other fields with a well-balanced preparation in the humanities and social sciences. While taking academic courses in architecture and related fields such as anthropology, art history, economics, history, mathematics, philosophy, political science, and sociology, students take 14 points of drawing and studio courses that are developed around the themes of two- and three-dimensional representation and analysis of architecture and of space- and form-making. Design projects investigate a combination of abstracted, yet potentially quite real, situations of human habitation, place-making, and cultural interaction. Architecture, as both a discipline and a way of understanding experience, is examined through historical and contemporary relationships between physical, intellectual, and cultural forms and environmental contexts. In their combination of academic and studio work, the undergraduate majors encourage students to consider the multiple relationships one may have with architecture: as architect, historian, theorist, and critic.

Courses of Instruction

The University reserves the right to withdraw or modify the courses of instruction or to change the instructors at any time.

Students may not drop or change courses without official approval.

Numbering of Courses

Each course number consists of a capital letter followed by four digits and the term designation:

The capital letter indicates the University division for whose students the course is primarily offered: A, Architecture; B, Business; C, Columbia College; E, Engineering and Applied Science; F, General Studies; G, Graduate School of Arts and Sciences; L, Law; P, Public Health; R, School of the Arts; S, Summer Session; T, Social Work; W, Inter-Faculty.

The first digit indicates the level of the course, as follows:

0 Course that cannot be credited toward any degree

1 Undergraduate course

3 Undergraduate course, advanced

4 Undergraduate and graduate course

6 Graduate course

8 Graduate course, advanced

9 Graduate research course or seminar

An *x* following the course number indicates that the course meets in the autumn term; a *y* indicates the spring term.

Two consecutive numbers joined by a hyphen indicate a course that runs through both terms (e.g., *Architecture A3121x-3122y*). The first half is prerequisite to the second half unless the course description says otherwise.

Points of Course Credit

The number of points of credit a course carries *per term* is given in boldface type on the right margin of the course entry. The value of a course in points of credit is calculated at the rate of one point for three hours of work each week in each term. The number of points is not determined by the number of class meetings a week, but by the number of hours of work required. For most courses it is assumed that the student will spend at least two hours in preparation for one hour of lecture, recitation, or seminar.

When and Where Classes Meet

The days, hours, and room assignments for all courses given in the Graduate School of Architecture, Planning, and Preservation are posted in Avery Hall at the time of registration. The University also publishes this information in a separate bulletin, which is distributed at registration.

Architecture

Design Studio: Master of Architecture Program

The following faculty members have recently taught in the design studios: Diana Agrest, Stan Allen, Amy Anderson, Tadao Ando, Kevin Bone, Beatriz Colomina, Neil Denari, Elizabeth Diller, Livio Dimitriu, Kenneth Frampton, James Garrison, Romaldo Giurgola, Zaha Hadid, Thomas Hanrahan, Laurie Hawkinson, Klaus Herdeg, Steven Holl, Paola Iacucci, Andrea Kahn, Kenneth Kaplan, Sulan Kolatan, Panos Koulermos, William MacDonald, Robert Marino, Robert McNulty, Robert McCarter, Mary McLeod, Eric Miralles, Richard Plunz, James Stewart Polshek, Hani Rashid, Daniel Solomon, Robert Stern, Roy Strickland, James Tice, Susana Torre, Antonio Velez-Catrain, Lauretta Vinciarelli, Rafael Vinoly, Harry Wolf, and Leonardo Zylberberg.

Architecture A4001 Core studio, I. 9 pts **The staff.**

Fundamental architectural issues are examined through a series of interconnected problems designed to develop a capacity for conceiving architectural form as a hierarchical spatial sequence and focusing on the elemental constructive forms of line, plane, and volume.

Architecture A4002 Core studio, II. 9 pts **The staff.**

The intention of this studio is to investigate increasingly complex architectural problems, developing the issues of the first term (dwelling, movement sequence, spatial definition, fundamental elements, and craftsmanship) as they respond to specific sites and activities. Two projects are investigated in the second term: a small public building in an urban context and a small public building in a suburban context. Both projects seek to intensify awareness of multiple considerations in design and to expand conceptual capabilities for confronting and integrating competing demands.

Architecture A4003 Core studio, III. 9 pts **The staff.**

The third term core studio focuses on the design of housing, the residential fabric of the city, and students develop designs from ideas of individual, social, and urban life. The housing project, as a design that both determines and is determined by a collective community, requires the student to explore the social and cultural consequences of their individual design decisions. Architecture as a presentation of cultural and social meaning will be emphasized, as well as the place of daily private life. The program of housing is investigated and redefined by each student: the cycles of daily life, the dynamics of the neighborhood, and the precedents of historical and contemporary housing projects will be investigated. A primary focus of the design effort involves the balance between unique, individual units and modular, repetitive housing groupings.

Architecture A4004, A4005, and A4006 Advanced studios. 9 pts **The staff.**

In the advanced studios, themes and programs are defined by the individual critics. These themes and programs both carry an educational objective and present an opportunity for the critic to develop with his or her students a specific area of work or research. The advanced studios are intended to build upon the ideas and skills developed in the core studios. The range of faculty and studio projects in the studio sections enables the student to select those instructors and projects that will allow a degree of specialized design study. In

contradistinction to the core studios, the advanced studios are open to M.Arch. students as well as to second professional degree students.

History/Theory

Architecture A4307 Contemporary architecture in non-Western contexts. 3 pts
Ms. Celik.

Lectures on a series of topics in contemporary non-Western architecture. Selected current themes and their realization by some leading third-world architects: modernization, change, preservation of the architectural heritage, influence of Western architecture, the dichotomy between the old and the new, and the pressing social and economic needs of rapidly changing societies.

Architecture A4330 Urban history, I. 3 pts
Ms. Wright.

Urban morphology and city life in Western cities from antiquity through the capital cities of mid-18th-century Europe, showing connecting trends in architecture and urban form; the discourse on cities; civic culture and civic ritual; public and private space; the role of the architect and urban planner; cultural and formal complexity; and adaptation to change.

Architecture A4331 Urban history, II. 3 pts
Ms. Wright.

Continuation of A4330; examination of patterns in Western cities from 1850 to 1950.

Architecture A4337 Architecture and politics: 1920 to the present. 3 pts
Ms. McLeod.

A seminar investigating the economic, social, and cultural forces affecting architecture in its production and its formal or stylistic expression. Form is investigated as propaganda, criticism, or affirmation of existing values. Marxist and utopian approaches are examined, as well as currents between the wars and after World War II, up to and including the rise of populism in postmodernism. Readings, research papers, and student presentations.

Architecture A4341 American architecture: 1876–1976. 3 pts
Mr. Stern.

A survey of American architecture from the centennial to the bicentennial. Individual lectures are structured along broad thematic lines and supplemented with readings from a wide variety of primary and secondary sources.

Architecture A4342 Modern Japanese architecture. 3 pts
Mr. Kudo.

A seminar on 20th-century Japanese architecture, examining how Japan imported Western technology and styles and how Western society responded to minimalism of traditional Japanese culture. Critical perspectives of reciprocal influence in architecture. Introductory lectures by the professor, student presentations, and a research paper.

Architecture A4344 Traditional Japanese architecture. 3 pts
Mr. Kudo.

This seminar examines the contemporary validity of Japanese classic aesthetics through the study of ancient architectural design. Japan has developed her art depending on feeling rather than reason. This obsession has reached the ontological ground. Her goal of art was the realization of what nature desires to be. The intention in the course is to reexperience the unique structure of perception and signification in Japanese architecture and related

arts. In the first part basic knowledge about Japanese architecture is provided—its history, building typologies, and construction methods. In the second part students read fundamental literature about Japanese aesthetics and ethics, and, in the last part, the formative analysis of the selected structures and spaces takes place.

Architecture A4348 History of architecture, I: 1750–1850. 3 pts
Ms. McLeod.

The two-term sequence *History of architecture* provides students with a basic critical understanding of significant developments in architecture history during the modern period. Emphasis on moments of significant change in architecture, whether they be theoretical, economic, technological, or institutional in nature. In this respect each lecture generally focuses on a theme, such as positive versus arbitrary beauty, enlightenment urban planning, historicism, structural rationalism, the housing reform movement, iron and glass technology, etc. Topics include changes generated by developments internal to architecture itself or by events understood to be external to the discipline, at least as it was conceived at that moment in time.

Architecture A4349 History of architecture, II: 1850–1930. 3 pts
Mr. Frampton.

Continuation of *Architecture A4348*; examination of transformations in Western architecture.

Architecture A4351 Formal structure in central Asian architecture. 3 pts
Mr. Herdeg.

Research seminar on the nature of formal structures of central Asian architecture, with emphasis on Islamic examples. Predominance of examples from Iran, Turkestan (USSR and China), and India. Some contrapuntal examples of traditional Chinese architecture. Individual research within a small seminar group.

Architecture A4353 Le Corbusier and the evolution of modern architecture. 3 pts
Mr. Frampton.

Lectures relating the evolution of the work and thought of Le Corbusier to the development of European architecture as a whole. Projects and built works are examined in the context of Northern European and Mediterranean traditions, technological and cultural transformations, ideology and cultural critique, antique forms and modern order, as well as through more specific aspects of Le Corbusier's education, practice, and theory. Requirements include analytical models of selected buildings, papers on theoretical topics, and weekly readings.

Architecture A4354 Building types: the transformation of institutional form. 3 pts
The staff.

A seminar exploring the historical transformation of architectural form as it relates to institutional transformations from the Renaissance to the present. Selected building types are studied within the context of Western social institutions: libraries, museums, market and exhibition halls, stores. Analyses address context, spatial order, construction technologies and materials, environmental relationships, and building form as they relate to the institution's purpose and structure and to the cultural, social, and economic contexts.

Architecture A4355 The architecture of Frank Lloyd Wright: critical analysis. 3 pts
Mr. McCarter.

A seminar undertaking critical analyses of selected works by Frank Lloyd Wright from throughout his career. The analytical process emphasizes the underlying principles of design set into the work of architecture by the manner in which it is ordered and constructed. To that end the following aspects are examined: historical and physical context, external and internal hierarchy

and sequence, spatial and structural order, light, material, finish. Introductory lectures by the professor and seminar presentations by students prepared in individual tutorial sessions.

Architecture A4357 Renaissance seminar. 3 pts
Mr. Giurgola.

An introduction to the architecture of the Renaissance through the study of intentions, results, methodologies, and form. Man-made environment and building complexes studied from the point of view of process and in relation to the present. The Italian experience from the 13th to the early 15th century.

Architecture A4358 Renaissance architecture and urbanism. 3 pts
Mr. Adams.

A study of the major developments in Italian architecture and urban history from Brunelleschi to Palladio. Topics include civic and ecclesiastical architecture, as well as popular housing, fortifications, technology, and engineering. Architecture is also examined in its relation to the developing consciousness of urban forms as seen in selected examples (Florence, Pienza, Ferrara, Urbino, and Rome), with attempts to draw some concrete historical lessons.

Architecture A4366 Historical evolution of housing in New York City. 3 pts
Mr. Plunz.

A historical survey of the design of housing in New York City including some reference to the interrelationship with other cities in the United States and Western Europe. Major emphasis is on the period after 1850. The architecture of housing is contrasted with a broad range of income groups and modes of development, with discussion of the underlying cultural, social, and political context. Examples trace the evolution of types, to include the early high-rise apartment, the tenement, the garden apartment, the urban and suburban single-family house, and the "tower-in-the-park."

Architecture A4370 Italian rationalism. 3 pts
Ms. Latour.

A seminar on rationalist architectural work, thought, and philosophy, from the 1920s to the present, set against the Italian cultural background, in order to clarify the most characteristic tendencies up to the recent development of neo-rationalism. The production of chosen architects is examined by selecting examples of their work, and discussing the theoretical framework underlining their formulation; in this way, the intention is to demonstrate the always existing relationship between theoretical positions and specific artistic production.

Architecture A4372 Skyscrapers: art, technology, and commerce. 3 pts
Mr. Bluestone.

Survey of a century of skyscraper architecture. Review of the aspirations, ideals, and criticisms influencing skyscraper form, the debates surrounding skyscraper technology, and the changing images of the white-collar workplace in the skyscraper. Analysis of the skyscraper's eclipse of the traditional forms of civic and religious monumentality and planning and zoning theories concerning the skyscraper's place in modern urbanism.

Architecture A4374 Contemporary theory and criticism of architecture. 3 pts
Ms. McLeod.

Seminar on issues in architecture theory and criticism that have emerged in the past two decades. Topics discussed include semiology, post-modernism, rationalism, typology, and Marxist cultural theory.

Architecture A4380 Architectural field study. 3 pts
The staff.

Particular projects are developed by students under the tutorship of assigned faculty members, in conjunction with topics that are prepared during travel-study.

Architecture A4386 Modernity, thought, and culture: 3 pts
parallel readings in architecture, philosophy, and music.
Mr. Holl.

A seminar examining a series of texts on music and phenomenology, with implicit analogy to architectural composition. Writings by Adorno, Griffin, Stravinsky, Husserl, Merleau-Ponty, and Heidegger are the subject of student presentations and class discussions, with a research paper and analogical model also required.

Architecture A4395 Modern architecture and critical form: 3 pts
1935–1985.
Mr. Frampton.

An introduction to the late modern tradition of critical theory and practice. Concentration on European works and movements that can be seen as resisting the current tendency to reduce architecture to little more than scenography. The post-avant-gardist line in the modern movement from Aalto's organic architecture approach of the mid-thirties to the more critical aspects of current architectural practice. At midterm and at the end of the term, students submit a course notebook comprised of typed notes and commentary on the required reading. An essay is optional.

Architecture A4410 Design attitudes in European and American 3 pts
urbanism: 1750–1930.
Mr. Plunz.

A topical history of architectural approaches to urban form-making. Emphasis is placed on developments in the United States in relation to Europe and on the formation of design vocabulary in relation to political and cultural issues.

Architecture A4420 Comparative critical analysis of built form. 3 pts
Mr. Frampton.

Comparative critical team analysis used as a device for revealing both explicit and implicit intent in the design of built form, the analytical process predicated on typological categories in which buildings of the same type are compared as embodiments and expressions of differing conceptions of nature, use, production, and value. Apart from their typological arrangement, buildings are usually ordered so as to reveal also a particular historical development. The aim is three-fold: (1) to reveal through analysis the capacity of built form to carry meaning, (2) to sensitize the student designer to subtle significances in spatial sequence, adjacency, detailing, etc., and (3) to see design as cultural discourse. Analytical materials are drawn from either the 19th or the 20th century.

Architecture A4421 Avant-garde and tradition in 3 pts
20th-century architecture.
Mr. Frampton.

Lecture analyzing 20th-century architecture as being composed of two opposed yet interrelated tendencies—the avant-garde, exemplified by the Russian Constructivists, the Italian Futurists, etc., and a more traditional continuation of certain aspects of Western humanist architecture, exemplified by Mies van der Rohe, Le Corbusier, Louis Kahn, etc. Both tendencies are conventionally read as being “modernist,” while in fact the differences prove as significant as the similarities. Modern architecture seen as a continually self-critical and non-monolithic development. Research papers or models of selected projects.

Architecture A4445 The palazzo: between type and place. 3 pts
Mr. Tice.

A seminar examining the palazzo as a building type of unparalleled influence on subsequent architectural thought. The inherent conflict between idealized utopian form and specific urban context/local values is central to the course, and the history of the Italian palazzo from the 15th to the 18th centuries is studied as a dialogue between type and place.

Architecture A4450 Scandinavian modern movement: 3 pts
Utzon and Aalto.
Mr. Frampton.

Seminar comparing the works of Alvar Aalto and Jorn Utzon, in order to penetrate into the Scandinavian modern tradition. Students work in teams of two making analytical presentations that compare each project to certain precedents, that compare two projects (one by each architect), and that culminate in the production of final models.

Architecture A4480 Elements of landscape architecture. 3 pts
Mr. Quennell.

Introduction to the various factors that contribute to the man-made landscape, whether it be the surroundings of a single building or the character of a region. Lectures cover three general areas of interest: the natural environment, development of landscape architecture, and techniques of landscape architecture.

Architecture A4547 Case studies in urban design. 3 pts
Ms. Celik.

A seminar examining the process of "inventing traditions" in response to rapid social and technological transformations of existing traditions between 1850 and 1920. The theoretical foundations of these "new" traditions in urban design are explored through an examination of writings and projects of major figures, among them E. Haussman, C. Sitte, T. Garnier, E. Howard, D. Burnham, and B. Taut.

Architecture A4573 The Islamic city. 3 pts
Ms. Celik.

A seminar analyzing the evolution of urban form in major Islamic cities in the Middle East, North Africa, and Spain, with reference to social, economic, political, and cultural conditions. Individual case studies of each city are combined with discussion of more general issues. Student presentations and final collected paper.

Architecture A4383 German modern movement: 1918-1933. 3 pts
Mr. MacDonald.

A seminar examining specific projects and buildings from the period of the Weimar Republic. Background material includes major theoretical texts. Students discuss the relationship between the buildings and the theoretical debate of the period. Lectures by the professor, student analytical presentations, and collected final paper.

Architecture A4755 The architecture of Louis I. Kahn: 3 pts
critical analysis.
Mr. Malo.

A seminar on the works of Louis I. Kahn, studied from theoretical, philosophical, and architectural points of view, taking into consideration the historical and circumstantial context in which he worked as it relates to his continuous search for the fundamentals of architecture. Writings, drawings, and buildings from throughout his career are examined, as well as more general topics related to design process and cultural setting.

**Planning A6769 History of the American city.
Ms. Wright.****3 pts**

The process of continuity and change in American cities from the colonial period through the 20th century, covering industrialization, political conflict, reform movements, geographical and ethnic diversity, bureaucratic rationalism, and urban culture—with focus on how physical form responded to or influenced social and political forces over time.

Technology/Structures**Architecture A4111 Structures, I.
Mr. Webster.****3 pts**

Topics include: utilitarian requirements of structures, loads, strength and serviceability design criteria, principles of structural mechanics, structural behavior of modern materials, beams and one-way slabs in skeleton frame, and bearing wall structures. Examples for contemporary architecture. Labs and field trip.

**Architecture A4123 Structures, II.
Mr. Webster.****3 pts**

An introduction to structural systems stressing qualitative understanding and basic quantitative skills. Basic design concepts and code requirements for wood, steel, and concrete systems are examined. The study of each structural system includes: historical and contemporary architectural examples, principles of structural mechanics, choice of materials, and connections and construction methods. Labs and field trip.

**Architecture A4125 Structures, III.
Mr. Webster.****3 pts**

An introduction to structural systems not covered in *Structures, II*. Recent developments in structural design are examined. A structural design problem is proposed: teams of three students each prepare preliminary design documents for a simple structure. Design criteria, materials, loads, code issues, structural calculations, model, and structural drawings are presented to the class and an informal jury of architects and engineers.

**Architecture A4136 Structures with computers.
Mr. McCormick.****3 pts**

Prerequisite: *Architecture A4111* or the equivalent.

An introduction to the use of computers by architects to do structural analysis and design. Plane trusses, beams, multi-story structures, cable net systems, space trusses. Design of structural members in concrete, steel, and timber.

**Architecture A4220 Architecture and technology, I.
Mr. Silman.****3 pts**

Lectures utilizing specific examples from the history of architecture illustrating a structurally rational point of view and emphasizing material selection as design determinant, building physics; fundamental structural systems; mechanical systems; high-rise construction; mass-production elements; specialized structures. Intended as a corollary to *Architecture A4001—Core studio, I*.

**Architecture A4221 Architecture and technology, II.
Mr. Marino.****3 pts**

A studio format course with supplementary lectures, readings, and field trips. Design problems, narrowly defined in order to focus on material and structural fundamentals, examine masonry and wood construction simultaneously from architectural and technological viewpoints. Upon completion, each project is subjected to formal critical design review. Intended as a corollary to *Architecture A4003—Core studio, III*.

Architecture A4610 Architecture and technology, III.
Mr. Marino.

3 pts

Continuation of *Architecture A4221*. A studio format examination of steel construction, followed by a case study wherein exemplary built works are deconstructed using analytical drawing techniques in order to examine material, structure, and mechanical aspects of the design. All projects are subject to formal critical reviews upon completion. Working drawing sets are used as information sources.

Architecture A4619 Introduction to mechanical systems in buildings.

3 pts

Messrs. Gainfort and Evans.

An introduction to fundamentals of heating, ventilating, and air-conditioning systems as they are applied to buildings. Basic principles of energy flow, conservation, and control are coupled with information on basic HVAC systems. The emphasis on integration of these systems into, and their effects on, building design and construction. Lectures, case studies, and design project.

Architecture A4626 Architectural detailing.
Mr. Holl and staff.

3 pts

Prerequisite: *Architecture A4220, A4221, A4610, and A4611.*

Lectures and studio detailing problems. Introduction to tectonic composition and the concept of constructive poetics. Students also detail a building that they have designed themselves. Discussion includes a broad range of considerations in architectural detailing from organizing documents for an entire project to resolution of selected individual problems. Emphasis placed on the practicality of details to achieve objectives of weatherability, durability, physical comfort, and economy of construction; and on whether the details maintain the spirit of the overall design conception.

Architecture A4628 Architectural acoustics.
Mr. Harris.

3 pts

Physical properties of sound. Reflection, absorption, and diffraction of sound waves. Sound absorptive materials and constructions. Principles of room acoustics, room resonance, diffusion of sound, the decay of sound in a room. Designing for optimum reverberation time. Acoustical defects in rooms and auditoriums and how to avoid them. The acoustical design of rooms, lecture halls, auditoriums, studios, and open-air theatres. Noise transmission in buildings. Noise control methods in HVAC systems, in electrical systems, and in piping systems. Control of airborne noise in buildings (walls, slabs, double-wall construction, doors and windows, enclosures, use of sound absorptive materials). Control of solid-borne noise in buildings.

Architecture A4637 Lighting and buildings.
Mr. Prouse.

3 pts

Lighting as an element in the overall design and construction process. Light and materials. Light and color. Specifying sources and luminaires. Daylighting, exterior lighting, and documentation of the design.

Architecture A6134 Architectural consequences of structural decisions.

3 pts

Messrs. Salvadori and Nordenson.

Prerequisite: a knowledge of elementary steel, concrete, and wood structures. Basic concepts of structural behavior applied to the solution of practical problems with the specific purpose of determining the influence of structural decisions on architecture. Optimization of structure considered as a component of the architectural system. Considerations of economy, functionality, and practicality of construction in the search for proper architectural solutions. Large-span and high-rise structures as well as structures for modular buildings. Additional knowledge of advanced structures introduced when required for the solution of the problem at hand.

Visual Studies

Architecture A4503 Architectural drawing, II: advanced. 3 pts **Mr. Blood and Ms. Iacucci.**

Lectures with studio assignments each week. Analytical and representational freehand drawing techniques taught and utilized: shade and shadow, texture, perspective, etc., with the intention of using drawing as an analytical method of investigating structure and form, construction, the joint, material.

Architecture A4509 Architectural drawing, I: basic. 3 pts **Mr. Blood and Ms. Iacucci.**

Lectures with studio assignments each week.

Exercise of cognitive, technical, and aesthetic judgment in the development of skills of visual representation of three-dimensional space by selective use and drawing practice of lines, planes, and solids. Topics: geometric generation of lines, orthographic projection on planes, stereometric representation and rotation of volumes, light on surfaces (shade and shadow), and perspective (one- and two-point).

Methods/Practice

Architecture A4535 Computer-aided design in architecture and preservation. 3 pts **Messrs. Tountas and Muir.**

A previous knowledge of computers is not required. An introduction to concepts, issues, and methods in computer-aided design. Topics include interactive and procedural approaches, parametric design, and integration of spatial modelling with other information-processing activities. Emphasis is placed on the creation of three-dimensional models using the University's computer center, as well as the program's computer-aided design facility that includes several work stations, plotters, digitizers, etc.

Architecture A4534 Advanced computer-aided design in architecture and preservation. 3 pts **Messrs. Tountas and Muir.**

Prerequisite: *Architecture A4535* or equivalent.

Continuation of *A4535* in a smaller seminar format.

Architecture A4536 Development and finance. 3 pts **Mr. Bell.**

An introduction to economic decision making with regard to income-producing properties, through case study examinations of the effects of feasibility studies, political restraints, pioneering, financing, methods of leverage, taxation, and investment return. Successful and unsuccessful suburban and urban multifamily housing, shopping center, rehabilitation and renovation, and office building projects.

Architecture A4539 Advanced development and finance. 3 pts **Mr. Bell.**

Prerequisite: *Architecture A4536*.

A continuation of the analysis of sophisticated "deal making." An examination of the economics and feasibility of condominium conversions, office and loft building conversions, hotel and motel operations, medical and specialized buildings, land acquisition, and restoration and rehabilitation. The general contractor; estimating and bidding. Pitfalls in leasing and management. Selected on-the-scene, in-depth economic evaluations of multifamily housing, shopping center, and office building complexes in the metropolitan area.

Architecture A4560 Professional practice.**3 pts****Mr. Segal.**

Turning designs into buildings. A general introduction to the business of architecture, covering architects' services to owners, contractors' services to owners, financial management of office and projects, and public constraints such as zoning and building codes.

Architecture A6900–A6901 Research, I and II.**2 or 3 pts****The staff.**

Either term may be taken separately.

Prerequisite: a project outline and the written permission of a faculty project supervisor.

An introduction to the independent study of technical, scientific, and social aspects of architecture. Each student selects an area for investigation, plans an approach to his or her chosen subject matter, and develops an adequate presentation of findings. The project may involve experimentation, accumulation of physical data, consultation with recognized authorities, or surveys of opinion, and is expected to add significantly to the existing knowledge of the chosen subject.

Building Design**Architecture A6853, A4005, and A4006 Design studios.****9 pts****The staff.**

Provides an opportunity for qualified and experienced architects to bring design projects to a high degree of resolution and refinement. The procedure is one of continual design and redesign, while generally increasing the operative scale at which the study is progressively presented. Other short exercises are given during the three-term period.

Architecture A4028 Building New York.**3 pts****Mr. Dolkart.**

The evolution of building form and urbanism in New York City as demonstrated by a survey of the city's building types, 19th century to the present, and including residential, commercial, and institutional architecture. Lectures and tours.

Architecture A4303 Critical positions: courses and discourses in contemporary architecture.**3 pts****The staff.**

An examination of some exemplary works of recent theory and practice in an effort to define and contrast a set of critical positions in architecture today.

Architecture A4421 Theories of 20th-century avant-garde architecture.**3 pts****The staff.**

Examines the theories of 20th-century architecture and relates them to political and cultural contexts with roots in 18th- and 19th-century concepts such as rationalism and zeitgeist. Focuses on the development of the language of abstraction in the Soviet Union, France, Germany, the Netherlands, and Japan and contributing factors such as the machine and industrialization.

Planning A6769 History of the American city.**3 pts****Ms. Wright.**

The process of continuity and change in American cities from the colonial period through the 20th century, covering industrialization, political conflict, reform movements, geographical and ethnic diversity, bureaucratic rationalism, and urban culture—with focus on how physical form responded to or influenced social and political forces over time.

Urban Design

Architecture A6850, A4005, and A4006 Design studios. 9 pts The staff.

The studio emphasizes the development of urban design concepts, exploring their implications into fully realized designs. The studio is particularly concerned with the mediation between the scale of the city as a whole and the architectural scale: projects assigned address a range of scales, from the city to the district, and down to the scale of the street and the individual square. Projects assigned in New York City.

Architecture A4028 Building New York. 3 pts Mr. Dolkart.

The evolution of building form and urbanism in New York City as demonstrated by a survey of the city's building types, 19th century to the present, and including residential, commercial, and institutional architecture. Lectures and tours.

Architecture A4536 Development and finance. 3 pts Mr. Bell.

An introduction to economic decision making with regard to income-producing properties, through case study examinations of the effects of feasibility studies, political restraints, pioneering, financing, methods of leverage, taxation, and investment return. Successful and unsuccessful suburban and urban multifamily housing, shopping center, rehabilitation and renovation, and office building projects.

Architecture A4539 Advanced development and finance. 3 pts Mr. Bell.

Prerequisite: *Architecture A4536*.

A continuation of the analysis of sophisticated "deal making." An examination of the economics and feasibility of condominium conversions, office and loft building conversions, hotel and motel operations, medical and specialized buildings, land acquisition, and restoration and rehabilitation. The general contractor; estimating and bidding. Pitfalls in leasing and management. Selected on-the-scene, in-depth economic evaluations of multifamily housing, shopping center, and office building complexes in the metropolitan area.

Planning A4714 Legislating aesthetics. 3 pts Mr. Kwartler.

Focus is on the issues concerning the constitutional, social, and philosophical bases for legislation that achieves aesthetic purposes in its regulation of real property. The legislative and administrative structures of historic preservation, zoning and subdivision regulations, housing codes, environmental protection, and private covenants are examined through case studies and case law.

Planning A6001 History and theory of urban planning. 3 pts Mr. Sclar.

Lectures and discussions on the history and role of planning as a profession, history and planning theory, urban theory, and professional ethics.

Planning A6052 Planning law and administration. 3 pts Mr. Marcuse.

An analysis of the various legal controls available to carry out official planning policy: zoning, official map and building control, subdivision regulations, building and housing codes, aesthetic and sign regulations, urban renewal and public development. Limitations on public powers; due process and discrimination. Emphasis is on basic principles of constitutional law and on the interrelationships of legislation, administration, and litigation.

Architecture A6420 Issues in contemporary practice. 3 pts**The staff.**

Discussion of contemporary economic, social, political, and planning issues in urban design with analysis of professional and theoretical responses to these issues.

Planning A6769 History of the American city. 3 pts**Ms. Wright.**

The process of continuity and change in American cities from the colonial period through the 20th century, covering industrialization, political conflict, reform movements, geographical and ethnic diversity, bureaucratic rationalism, and urban culture—with focus on how physical form responded to or influenced social and political forces over time.

Architecture A6868 Elements of urban design. 3 pts**Ms. Celik.**

A seminar examining the process of “inventing traditions” in response to rapid social and technological transformations of existing conditions. The theoretical foundations of these “new” traditions in urban design are explored through the examination of writings and projects of major figures, among them E. Haussman, C. Sitte, T. Garnier, E. Howard, D. Burnham, and B. Taut.

Urban Planning**Core Courses****Planning A4208 Analytic methods, A. 3 pts****Mr. Bach.**

An introduction to quantitative and qualitative techniques used by urban planners, policy analysts, public administrators, and social scientists. Topics include survey methodology, sampling, descriptive and inferential statistics, hypothesis testing, bivariate correlation and regression analysis, and techniques of population projection.

Planning A4206 Analytic methods, B. 3 pts**Mr. Bach.**

Prerequisite: successful completion of *Planning A4208*.

A second course in analytic techniques for urban planners. Topics include introduction to computer usage, techniques of multiple regression and correlation analysis, factor analysis, introduction of econometrics, and mathematical approaches to planning.

Planning A6001 History and theory of urban planning. 3 pts**Mr. Sclar.**

Lectures and discussions on the history and role of planning as a profession, history and planning theory, urban theory, and professional ethics.

Planning A6290 Workshop in planning skills. 3 pts**Mr. Ferris.**

With New York City as the setting, and through a weekly series of lectures, readings, discussions, and individual and group assignments, the workshop (1) learns the tools and techniques of the planning practitioner: land use surveying and analysis, mapping and graphic representation, gathering and analysis of published data, zoning analysis, report writing and public presentation; and (2) studies the public review process—the procedures, the issues, the players—whose all-pervasive presence provides both limitation and opportunity to the hands-on urban planner.

Planning A6911 Planning studio.
The staff.

6 pts

Work on actual planning projects in collaboration with and under the supervision of faculty members. Emphasis on project and program planning for community and other public service organizations with limited technical-assistance resources, and on policy analysis and policy planning for government agencies at the city and state levels. Field work, team consultation, and seminars.

Planning A6225 The planning process.
Messrs. Grava and Burlage.

3 pts

This course provides a focused summary of the planning curriculum, explores selected urban issues in some depth, and offers a bridge to practice for graduating students. A seminar format, with invited guests as appropriate, is employed to probe important questions in contemporary urbanization, where professional planners have a role to play. Topics change each year and are determined jointly prior to each term.

Planning A6557 Race and ethnicity in the city.
The staff.

3 pts

Designed to investigate explicitly how race and ethnicity have been situated, in a methodological sense, within those disciplines that focus on the socio-economic, physical, spatial, and/or political aspects of urban environments. Among the principal topics discussed are: the origins of the social and scientific definitions of race and ethnicity; how those definitions influence public policy formation and debate; and divergent interpretations of the effects of planning, public policy, and urban design on different racial and ethnic groups.

Planning A4112 Physical structure of cities.
Mr. Grava.

3 pts

A discussion devoted to an understanding of the urban physical system, what it is, how it came about, and some of the general theories that purport to explain its form and function. Historical comparative analysis—from Paleolithic villages to the new town movement—of the form of cities as a product of political, economic, and social forces. Discussion of some major theorists on urban form and design. An exploration of the basic concepts of urban morphology and their relationships to the contemporary urban/metropolitan situation. A review of planning tasks for selected types of city districts. The planning approaches in some countries not following the American model.

Planning A4151 Foundations of urban economic analysis.
Ms. Sassen and Mr. Nickerson.

3 pts

Formal background in economics is not required. A review of the basic concepts and methods of urban economics, with a major emphasis on location and land-use economics. Examination of both equilibrium-based models and the new critical models derived from analyses of the production process and spatial organization.

Planning A6850 Research design.
Mr. Burlage.

3 pts

Objective is to guide students through the preliminary stages of thesis preparation. A series of lectures and discussions assist in selecting a thesis topic, forming a researchable hypothesis, and devising a suitable research design. Assignments are carefully tailored to meet individual needs.

Planning A6918 Thesis workshop.
Mr. Burlage.

3 pts

Objective is to guide students through the final stages of thesis preparation and defense, through reviews by peers, faculty members, and practicing professionals, to assist in presenting and synthesizing research findings.

Planning A6052 Planning law and administration. 3 pts
Mr. Marcuse.

An analysis of the various legal controls available to carry out official planning policy: zoning, official map and building control, subdivision regulations, building and housing codes, aesthetic and sign regulations, urban renewal and public development. Limitations on public powers; due process and discrimination. Emphasis is on basic principles of constitutional law and on the interrelationships of legislation, administration, and litigation.

Planning A6217 Techniques of project evaluation. 3 pts
Mr. Grava.

A selective review of the major evaluation techniques in the fields of urban planning and urban policy analysis; cost-benefit and cost-effectiveness analysis; PPBS; optimization, goal achievement, scenarios, and delphi procedures; metropolitan plan evaluation methods; simulation; sensitivity analysis; social experiments. Examination of theoretical issues and of the context and problems that define and constrain urban planning and program evaluation. Review of evaluation studies of various public works projects, development efforts, and services delivery.

Sectors

INTERNATIONAL

Planning A4510 Planning in socialist nations. 3 pts
Mr. Marcuse.

Investigation of the impact of socialism on the planning process. Place of planning in socialism and preconditions to planning as set up by the socialist ideology. Focus on case studies illustrating various types of socialism, as applied political systems, and their influence on the definition of goals, the setting of priorities, the means of control, and the record in implementation.

Planning A4546 Theories of urban economic and spatial development. 3 pts
Ms. Sassen.

An examination of the major theories and the relevant evidence. A major focus is on the new spatial division of labor and on the place of different types of cities in global and regional economic systems. Issues discussed include changes in the economic bases of cities in the U.S. and in Third World countries, changes in the linkages within urban systems, regional growth models, the migration of capital and labor, and uneven development.

Planning A4616 Housing in developing countries. 3 pts
Mr. Sierra.

The impact of urban population growth and rapid urbanization on housing and urban development; the demand for shelter and services for the urban poor; the phenomenon of squatting and squatter-built housing; comparison of government policies and programs addressing urbanization and housing conditions.

Planning A4750 Infrastructure of cities in the Third World. 3 pts
Mr. Grava.

Objective is to explore advanced and traditional technical systems that are useful in making cities—particularly large ones—in developing countries more healthful, tolerable, livable, and perhaps pleasurable. Discussion encompasses settlement patterns, energy and communications, streets, paratransit and regular transportation services, water supply, sewerage, solid waste disposal, and other services. The operations of several cities and metropolitan areas are analyzed. The orientation is to match service capabilities of systems with local resources and perceived needs.

Planning A6227 Comparative planning. 3 pts
The staff.

The seminars will evolve around and develop the idea of the interdependence of economies and resulting space integration. They will advocate that socio-economic relationships of today transcend the traditional geographical boundaries—on national and international levels—and create a spatial integration of a new order which is not based on geographical proximity. This process involves both more and less advanced economies, rural and urban, and puts into question the conventional concepts of dichotomies described in predefined geographical terms.

Planning A6345 Comparative housing policies. 3 pts
Mr. Marcuse.

An exploration of alternative theories of how and why housing policy is formed against the experiences of a number of different countries. We will begin by laying out a number of alternative explanations: pluralist political, welfare economics, benevolent state, marxist structuralist, marxist functionalist, Weberian. Each suggests a different set of reasons for which social policies are adopted, and each can be applied to housing policy formation. The main part of the course will then be devoted to a careful review of the actual housing policies in a number of countries, looking in particular at the process of their adoption and implementation and their results, using the alternative explanations as a structure for the examination.

HOUSING

Planning A4304 Introduction to housing. 3 pts
Mr. Marcuse.

This course or the equivalent is prerequisite to other courses in housing and community development.

A fundamental understanding of housing in its social and economic aspects. Emphasis on the nature of the housing problem, the dynamics of the housing market, the history and current status of government attempts at intervention in the market, and housing's place in resolving the major public issues of poverty, segregation, and urban growth and decay. Theory and analytic method are stressed.

Planning A4308 The determinants of housing policy. 3 pts
Mr. Marcuse.

Prerequisite: *Planning A4304* or the instructor's permission.

How governmental housing policy is formed: political, social, economic, physical, technological, ideological components. Alternative explanations of policy formation: philanthropic, fiscal, interest group, structural, and other theories. Emphasis on history of housing policy in the United States and comparisons with other countries' policy evolution.

Planning A4312 Real estate finance, I: capital markets. 3 pts
Messrs. Imperato and Laven.

For a complete description, see listing under Real Estate Development.

Planning A4345 European housing problems and policies. 3 pts
Mr. Marcuse.

Analysis of current housing problems and policies in Western Europe. The historical evolution and political, social, and economic context of these housing policies are examined and contrasted with policies in the United States.

Planning A4537 Urban housing policies: design and evaluation. 3 pts
Mr. Marcuse.

A range of existing and proposed policies are examined to analyze the ways in which their components were developed, how they do (or would) function in the actual context of the urban housing market, and what evaluation might be made of their results. The focus is on innovative

and/or controversial policies currently in debate, including, but not limited to, housing trust funds, 80/20 moderate/low income construction, rent control reforms, tax abatements, zoning incentives, condominium conversion regulations, housing court procedures, tax foreclosures, and secondary mortgage arrangements.

Planning A4512 Health services planning and housing. 3 pts
Mr. Burlage.

Familiarization with concepts related to conditions of physical and mental health, methodologies for analysis of the need for and supply of health services, available techniques for relating policies to plans, and programs for the planning of health services in operational terms that are susceptible to evaluation. Uses of urban planning and analysis for housing and health services. Field work for the perspectives of the provider and the client at the neighborhood, municipal, and regional levels.

Planning A4530 Intergovernmental social planning and community development. 3 pts
Mr. Burlage.

Changing intergovernmental fiscal and infrastructure planning network. Housing and social planning. Public services development and delivery planning, and comprehensive housing and land-use-oriented planning; health and social-environmental considerations; innovations in employment and management policies. Alternatives for decentralized public service planning.

Planning A6513 Housing and human services research seminar. 3 pts
Mr. Burlage.

Exploration of changing social planning concepts, housing and services sector problems, and institutional forces. Detailed examination of an evolving health system planning context, emphasizing emerging and alternative frameworks and roles at the community, municipal, regional, and federal levels.

Planning A6344 Seminar in housing policy. 3 pts
Mr. Marcuse.

Prerequisite: *Planning A4304* or the instructor's permission. Exploration of the major social, economic, and political issues confronting contemporary American housing policy. Examination in a small working-group setting of alternative policy approaches to racial and economic segregation, abandonment and residential decay, urban growth, forms of public subsidy, balancing rights of ownership with those of occupancy, etc. A significant research effort is required.

Planning A4616 Housing in developing nations. 3 pts
Mr. Sierra.

For a complete description, see listing under *Planning—International*.

Planning A4538 The development process, I. 3 pts
Mr. Bell.

For a complete description, see listing under Real Estate Development.

Planning A6358 National housing policy. 3 pts
Mr. Weiss.

Analysis of the main issues in national housing policy. Topics include: current legislation, policy studies, administrative reform, public-private partnerships, homeownership, financial markets and regulation, taxation, housing affordability, nonprofit development, rental housing, and homelessness.

PHYSICAL PLANNING AND INFRASTRUCTURE DEVELOPMENT

Planning A4404 Urban transportation planning. 3 pts
Mr. Grava.

Review of contemporary urban transportation issues and suggested solutions. Examination of the characteristics of various modes of movement and the interdependencies among them. Appropriate analytical techniques for each mode are discussed. The transportation planning process, with its component analyses of the supply and demand functions of movement systems, is the core of the course. Selected transportation facilities are reviewed.

Planning A4540 Environmental planning. 3 pts
Ms. Allee.

Objective is to provide means for understanding the environmental, regulatory, and planning process, and its relationship to development planning and design. Through actual preparation of an EIS under New York City regulations, students learn how environmental concerns compete with developer objectives and public policy—and what tradeoffs or compromises must be made before the project is completed.

Planning A4706 Infrastructure and the physical environment. 3 pts
Mr. Grava.

A review of the studies and surveys leading to the development and construction of various physical service/infrastructure systems, as well as a discussion of their components and service capabilities. This includes planimetric and photogrammetric surveys, land description, soils analyses, street engineering, water supply, sewerage, drainage, and solid waste management. Short exercises under each. In all cases the planning dimensions at the municipal and regional levels are emphasized. The overall aim is to give practical skills to the urban planner allowing constructive participation in the building of a livable environment.

Planning A4714 Legislating aesthetics. 3 pts
Mr. Kwartler.

Focus on the issues concerning the constitutional, social, and philosophical bases for legislation that achieves aesthetic purposes in its regulation of real property. The legislative and administrative structures of historic preservation, zoning and subdivision regulations, housing codes, environmental protection, and private covenants are examined through case studies and case law.

Planning A4730 Land use in urban areas. 3 pts
Mr. Buckhurst.

An introduction to site planning, layout, design standards, and general guidelines for the major land use elements found in urban areas. Examination of public and institutional land uses—housing, industrial, commercial, transportation, recreation, and open space—in a variety of cities.

Planning A6108 Land use planning. 3 pts
Mr. Turner.

Examination of the physical planning elements of the comprehensive planning process, including the evolution of contemporary land use and environmental and development issues. Covers the comprehensive plan as well as neighborhood, project, and site planning procedures and techniques. While theoretical foundations of planning are addressed, the course emphasizes practical approaches to physical planning issues. Case studies and practical exercises are utilized.

Planning A6434 Transportation issues seminar. 3 pts
Mr. Grava.

Prerequisite: *Planning A4404* or the instructor's permission.

Discussion of major issues in transportation at several levels, from national to local, and covering the economic, political, and social implications of decision making in transportation. Current topics and case studies are investigated.

Planning A4533 Waste and efficiency in the design of urban systems.**3 pts****Mr. Howard.**

Examines the contemporary American lifestyle and habits, the recent (1950 to the present) history of land use, and transportation and environmental problems of cities. Focuses on the tremendous growth of consumption and waste in America, documents the type and amount of waste, the costs (actual, environmental, and sociological), the effects of government policies, and the failure of traditional approaches to solving these problems. Attempts to define new solutions for growth and adjustment in American cities.

URBAN ECONOMIC DEVELOPMENT**Planning A4312 Real estate finance, I: capital markets.****3 pts****Mr. Laven.**

For a complete description, see listing under Real Estate Development.

Planning A4507 Urban economic development.**3 pts****Ms. Sassen.**

Prerequisite: *Planning A4151* or the instructor's permission.

Examination of the political economy of urban economic development in large, mature American cities, including the history of urban economic development, alternative theories and analytic techniques, the role of federal and local public policies, and prospects for the economic future of older cities in an increasingly interdependent world economy.

Planning A4509 Community-based economic development.**3 pts****The staff.**

Examination of the sources of divergence between national economic performance and economic conditions at the community level. The private and social costs of uneven development are explored, along with proposals for improving local economic performance. Detailed case studies evaluate community development corporations, enterprise zones, tax policy, public-private partnerships, and other development mechanisms.

Planning A4546 Theories of urban economic and spatial development.**3 pts****Ms. Sassen.**

Examination of the major theories and the relevant evidence. A major focus is on the new spatial division of labor and on the place of different types of cities in the global and in regional economic systems. Issues discussed include changes in the economic bases of cities in the U.S. and in Third World countries, changes in the linkages within urban systems, regional growth models, the migration of capital and labor, and uneven development.

Planning A4560 The economics of urban land use.**3 pts****Mr. Sclar.**

Prerequisite: *Planning A4151* or the instructor's permission.

A detailed review of the economics of land use in urban areas with particular emphasis on the relationship between land use controls and real estate development. Topics include the economics of land value, zoning, development rights transfers, historic designation, real property taxation, and the economic impacts of alternative transportation policies.

Planning A6108 Land use planning.**3 pts****Mr. Turner.**

Examination of the physical planning elements of the comprehensive planning process, including the evolution of contemporary land use, and environmental and development issues. Cov-

ers the comprehensive plan as well as neighborhood, project, and site planning procedures and techniques. While theoretical foundations of planning are addressed, the course emphasizes practical approaches to physical planning issues. Case studies and practical exercises are utilized.

Planning A6550 Urban labor markets.
Ms. Sassen.

3 pts

Examination of theories of the labor market, their policy implications, and the evidence. A major focus is on current developments in large cities, including the growth of immigrant labor markets, informalization, and new forms of regulating labor market attachment. Examination of evidence both for the U.S. and Third World cities.

Electives

Architecture A4530 Computer concepts for the built environment.

3 pts

Ms. Wade, Messrs. McCormick and Tountas.

An introduction to basic computer terminology, equipment, use, and programming languages and packages. A survey of computer applications in urban planning, preservation, and architecture, including data-handling, file structure and design, and methods of computer graphics and mapping. The Center for Computing Activities' DEC-20 and microcomputers are used.

Planning A4230 Thematic mapping and statistical graphics for the built environment.

3 pts

Ms. Wade.

Computer programming with Statistical Analysis Systems (SAS), a statistical analysis package, with an emphasis on applications to the built environment. Focus on data preparation, manipulation, and creating informational images with charts and maps. The Center for Computing Activities' IBM system and microcomputers are used.

Planning A4335 Planning New York City.

3 pts

Mr. Wagner.

Focus on the major institutional entities in the public sector that plan the built environment of New York City, including the City Planning Commission and other municipal agencies, neighborhood bodies such as community boards, and regional public authorities such as the Port Authority of New York and New Jersey. The historical origins, current operations, and future roles of each institutional entity are examined. Emphasis is on the public-private interactions that determine the shape of New York City.

Planning A4340 Comparative European urban social policy.

3 pts

Mr. Marcuse.

Social policies in advanced industrialized private-market countries have shown striking parallels and significant divergences. This course is an examination of the reasons for each, with an attempt to understand the causes for the adoption of specific policies. Topics include issues of unemployment, welfare, housing, urban development, and social security.

Planning A6220 Systems concepts in urban planning.

3 pts

Mr. Grava.

Specific mathematical or computer-use knowledge is not required.

Theory of decision making, drawing from general systems theory and advanced simulation and evaluation techniques and applying this knowledge primarily to the urban situation. "Systemic planning" as a procedural approach combining scientific methodology with urban concerns and as one of the theoretical paths available to decision makers generally and urban professionals

specifically. Contrasts and similarities with other theories. Major cases, particularly those related to urban management and organization issues.

Planning A6354 Political environment of development. 3 pts
For course description, see listing under Real Estate Development.

Planning A6769 History of the American city. 3 pts
Ms. Wright.

The process of continuity and change in American cities from the colonial period through the 20th century, covering industrialization, political conflict, reform movements, geographical and ethnic diversity, bureaucratic rationalism, and urban culture—with focus on how physical form responded to or influenced social and political forces over time.

Planning A6925-A6926 Advanced research, I and II. 3 pts
The staff.

Either term may be taken separately.

Prerequisite: a project outline and the written permission of a faculty project supervisor. Individual or small-group research in consultation with a faculty member, in areas of the student's choice. Students are responsible for planning and conducting research activities and enlisting the cooperation of a faculty adviser.

Architecture A4330-A4331 Urban history, I and II. 3 pts
For a complete description, see listing under *Architecture—History/Theory*.

Historic Preservation

Architecture A4210 Basic principles of traditional construction. 3 pts
Mr. Pokorny.

Designed to give the nonarchitecture student an introduction to the structural principles and building materials employed in traditional American structures of wood and masonry. Seminars supplemented by required reading and graphic exercises.

Architecture A4510 Design principles for preservation. 4 pts
Ms. Franke and Mr. Kendall.

Basic design for preservationists including examination of existing architectural examples in terms of their physical, historical, and cultural context; their anatomy, both perceptual and conceptual; and their meanings. Development of skills in the observation of architecture ("seeing" what is there); the recording (graphic representation) of the perceptual phenomena; the analysis of these phenomena to discover the underlying concepts; and the architectural design principles and means employed to express these concepts.

Architecture A6310 History of landscape architecture. 3 pts
The staff.

A survey of American landscape architecture from the 17th century to the present, with reference to European precedents and parallels.

Architecture A6710 Building systems integration. 3 pts
Mr. Pokorny.

The introduction of new systems into old fabric, including structural, mechanical, electrical, intrusion detection, and fire detection and suppression systems. Problems of management and coordination, and analysis of existing systems as a basis for new work.

Architecture A6712 Architectural finishes in America from 1650 to 1950. 3 pts

Mr. Matero.

Limited enrollment.

Prerequisite: *Architecture A6764* or the instructor's permission.

A study of historic architectural paints and related finishes employed in America. Emphasis on materials and application techniques as well as on practical analytical methods for the identification and restoration of historic architectural finishes. Field trips and individual research projects required.

Architecture A6723 Architecture of the American acropolis. 3 pts
Mr. Bluestone.

Investigation of the architecture and planning of the American civic landscape from the 17th to the 20th century. Consideration of the relationship between social and political attitudes toward government and the forms of public architecture. Subjects include the architecture of colonial public authority, federal architecture and planning in the early Republic, designs for national and state capitols and for city halls, City Beautiful efforts to reorder the civic and cultural landscape, and the 20th-century tensions between established canons of civic architecture and the forms of modernism.

Architecture A6724 Arcades, markets, and malls: history of retail architecture. 3 pts

Mr. Bluestone.

Investigation of the changing forms of retail architecture in the context of the changing patterns of market exchange and retail consumption. With a survey of some European and non-American antecedents and forms, the focus is primarily upon American designs. The retail forms studied include 17th- and 18th-century markets and market fairs; 19th-century arcades, expositions, department stores, and skyscraper shops; and 20th-century suburban shopping centers, main street malls, and commercial and retail development of major rehabilitated structures. Investigation also of efforts by architects and builders to mediate between the street and the shop—the attempts to internalize the dynamics of the traditional public street within privately controlled structures.

Architecture A6730 American architecture before 1876. 3 pts
Mr. Bluestone.

Survey of American architecture from the 17th century to the centennial, with scrutiny of the relationship between social and cultural ideals and architectural style and form. Consideration of the influence of European high style on American building and the connection between high style and vernacular forms. Survey includes examples of domestic, religious, civic, commercial, and industrial architecture.

Architecture A6731 American architecture after 1876. 3 pts
Mr. Stern.

A continuation of *Architecture A6730*. Guiding ideals in American architecture from the centennial to around 1960. The evolution of modernism in America is contrasted with European developments and related to local variants.

Architecture A6732 American decorative arts. 3 pts
Mr. Stayton.

Exploration of the stylistic and social changes in the decorative arts in America from the 17th to the 19th century. Although concentration is on furniture, other media such as silver, pewter, ceramics, and glass are also considered. Lectures cover the colonial and early federal periods; student projects are concentrated on 19th-century material.

Architecture A6734 The classical language and literature of architecture. 3 pts
Mr. Stubbs.

A detailed review of the elements of the classical language of architecture and of the literature that propagated that language from the early 15th century through the mid-19th century. The classical orders as interpreted by architectural publications in Italy, Germany, France, England, and the United States, and architects and buildings influenced by these books.

Architecture A6738 Investigative techniques for historic structures. 3 pts
Mr. Matero.

Prerequisite: *Architecture A6764* or the instructor's permission.

An introduction to field and laboratory techniques as preservation tools for the investigation and analysis of historic structures. Specific study topics include *in situ* paint investigation, nail chronology, dendrochronology, and X-ray investigation. Individual research contributing to a class field project is required.

Architecture A6739 Conservation seminar: stained glass. 3 pts
Ms. Sloan.

Introduction to the problems posed in the conservation of American stained glass. Lectures cover the history of the craft and specific issues facing the conservator.

Architecture A6740 Theory and practice of historic preservation. 3 pts
Mr. Bluestone.

Enrollment restricted to preservation students.

An introduction to theoretical issues governing preservation practice. Students are expected to develop an individual point of view through group discussions. These relate to readings and lectures that are often controversial in nature. Such basic concepts as style and history are questioned, and selected examples of conservation, preservation design, and preservation planning are critically evaluated.

Architecture A6745 Documentation. 3 pts
Mr. Bluestone.

The process and methods used to document historic structures. Familiarizes the student with the nongraphic methods of architecture research and analysis.

Architecture A6749 Historic preservation studio, I. 4 pts
Mr. Byard.

Design problems of restoration, adaptive use, and infill that introduce the student with previous design training to the special problems inherent in working with historic buildings and neighborhoods.

Architecture A6750 Historic preservation studio, II. 4 pts
The staff.

Students in design, history, conservation, and planning options work in groups to analyze and solve preservation problems in selected areas. Work with communities and neighborhoods in and around New York City is stressed.

Architecture A6751-A6753 Thesis, I and II. 3 pts
The staff.

Directed by an assigned faculty advisor, students prepare and defend a thesis in their area of major emphasis; history, conservation, or planning. Thesis guidelines issued during the spring term of the first year explain procedures in detail.

Architecture A6754 Special problems in preservation practice. 3 pts
The staff.

Advanced problems in written and graphic skills related to preservation practice, such as those necessary for proposals, contracts, specifications, and public relations.

Architecture A6759 Politics of preservation. 3 pts
Ms. Longworth.

An overview of federal, state, and local government participation in historic preservation. Includes the history of preservation legislation, the current status of programs and policies, and possible future government actions.

Architecture A6761 Mr. Weiss.	Conservation seminar: masonry.	3 pts
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Current research in the identification, deterioration, and treatment of brick, stone, and cement/lime composites. Chemistry of cleaners and consolidants. Development of patching and repair methods, with an emphasis on field techniques. Field work in the New York area coordinated with masonry suppliers, contractors, and craftsmen.

Architecture A6762	Building pathology.	3 pts
Mr. Prudon.		

The deterioration of building materials and systems. Survey of methodologies for the investigation of physical conditions and structural configurations of historic buildings. Analysis and discussion of available implementation techniques for repair and restoration.

Architecture A6763 Advanced conservation science. 3 pts
Mr. Matero.

Application of chemical instrumentation and advanced microscopy to the analysis of historic building fabric. Use of modern materials such as coatings, adhesives, biocides, and consolidants. Experimental approach to conservation treatments and to the fabrication of replica materials. Discussion of simulation and modeling of weathering processes.

Architecture A6764 Conservation science. 3 pts
Mr. Weiss.

Scientific approach to the physical and chemical properties of traditional architectural materials. Interrelationship of long-term behavior with these characteristics. Physical analytical methods for the investigation of samples from historic structures. Introductory laboratory study of metals, masonry, paints, and wood.

Architecture A6766	American architecture colloquium.	3 pts
The staff.		

Prerequisite: the instructor's permission.
The investigation of a particular problem in American architecture through introductory lectures and detailed student reports. Typical problems include the influence of the picturesque point of view in American architecture and American architecture between the two world wars.

Architecture A6767 Preservation planning. 3 pts
Mr. Kwartler.

Practical and conceptual issues in preservation planning and the methods used to respond to them are examined. The legal and administrative structures and mandates of landmark commissions, historic district and landmark designation, zoning, environmental regulations, land use and urban design analyses, building quality analyses, tax incentives, methods and sources of financing, economics and marketing for adaptive re-use, and real estate and community involvement are reviewed in the context of case studies. Emphasis is placed on examining the conflicting aesthetic, historic, developmental, social, and preservation values implicit in different policy approaches.

Planning A6769 History of the American city. 3 pts
Ms. Wright.

For a complete description, see course listings under *Architecture—History/Theory*.

Architecture A6770 Issues of urban preservation. 3 pts
The staff.

Introduction to key issues of urban preservation, focusing on the work of municipal preservation commissions. Investigation into both theoretical and practical problems of survey, administration, and design. Involves class and field work.

Architecture A6772 Vernacular architecture. 3 pts
Ms. Wright.

Special problems in the history and preservation of vernacular architecture, such as the architectural evolution of the typical American "Main Street" from 1800 to 1950. Emphasis on the material history of a particular type, such as commercial buildings, and relation of this type to contemporary preservation practice.

Architecture A6774 Historic preservation studio, III. 4 pts
Mr. Vinoly.

Advanced planning and design problems in preservation.

Architecture A6775 Historic preservation studio, IV. 4 pts
Mr. Byard.

Advanced planning and design problems in preservation.

Architecture A6780 Preservation trade techniques. 3 pts
Ms. Anderson.

A practical introduction to the methods used by tradesmen who work in the field of historic preservation. Course instructors demonstrate the proper use of the tools and techniques of the preservation tradesman. Students, through workshop projects, are introduced to the basic hand skills of two or more trades.

Architecture A6782 Conservation seminar: wood. 3 pts
Mr. Weaver.

Current research in the identification, deterioration, and treatment of wood. Lectures on conservation case studies and student seminar presentations on conservation techniques.

Architecture A8790 Research problems. 2 or 3 pts
The staff.

Independent research in history, conservation, or planning.

Real Estate Development

Planning A4312 Real estate finance, I: capital markets. 3 pts
Messrs. Imperato and Laven.

Introduction to capital markets and methods of financial analysis of real estate investments. Topics include measures of value, capitalization rates, capital budgeting, debt and equity markets, taxation, and cash flow and appraisal techniques.

Planning A4314 Real estate finance, II: advanced financial packaging. 3 pts
Messrs. Halperin and Laven.

Advanced financial analysis and appraisal techniques for real estate development. Topics include complex deal structuring, innovations in debt financing, syndications, tax shelters, tax-exempt financing, and microcomputer applications.

Planning A4538 The development process, I: concept to completion. 3 pts
Mr. Bell.

Detailed analysis of the components of the real estate development process and the functions of the key participants. Topics include techniques for selecting, organizing, and managing the development team; scheduling and risk management; negotiating strategies; utilizing government financing and subsidy programs; and marketing and managing completed projects.

Planning A4545 The development process, II: public-private nexus. 3 pts
Mr. Bell.

Topics include tax assessment procedures and appeals, utilizing government financing and subsidy programs, negotiating public-private partnership, working with public benefit corporations and nonprofit sponsors, and large-scale developments.

Planning A6320 Analyzing and forecasting real estate trends. 3 pts
Mr. Weiss.

A detailed look at the process of real estate forecasting and decision making. Topics include macroeconomic and demographic trends; analysis by product type and geographic area; large-scale structural changes in the development industry; global markets; institutional investment; and the role of professional consultants.

Planning A6330 Site planning and support systems for development. 3 pts
Mr. Grava.

Basic techniques of site planning and review of infrastructure systems such as access, utilities, telecommunications, and pedestrian amenities. Topics include the physical contexts of development sites, feasibility studies, and infrastructure requirements.

Planning A6332 Legal environment of development. 3 pts
Mr. Gold.

Fundamentals of land use law and zoning that define the legal context of the development process. Topics include contracting law, mortgage instruments, secured interests, forms of property ownership, labor laws, and zoning regulations.

Planning A6334 History of real estate development. 3 pts
Mr. Weiss.

An overview of the evolution of real estate development and the real estate industry. Primary focus is on the past century in the United States. Topics include: urbanization and suburbanization; technological, economic, and social changes; finance; construction; management; marketing; politics, planning, and regulation.

Planning A6350 Design for development. 3 pts
Messrs. Ferris and Laven.

Basic principles of architectural and urban design and the relationship between the developer and the architect. Topics include building subsystems, relationship between form and function, special zoning techniques, and large-scale project design.

Planning A6352 Market analysis for development. 3 pts
Mr. Shorter.

Critical factors in national, regional, and urban real estate markets that determine development opportunities. Topics include business and construction cycles, regional and urban growth

trends, restructuring of urban space, commercial and industrial location theories, and demographic analysis and projection techniques.

Planning A6354 Political environment of development. 3 pts
Messrs. Alshuler, Frucher, and Weiss.

Analysis of the political issues and conflicts influencing development. Topics include public laws influencing development, interest group politics, public approval processes, impacts of development on population groups and communities, and the competing equity claims of different members of society.

Planning A6356 Construction technology and management. 3 pts
Messrs. Fischer and Silvermand.

An overview of alternative technologies, the construction process, and construction management. Topics include cost estimating; scheduling and management techniques; contract documents; bidding; changes, extras, and claims; and community, public agency, and labor relations.

Planning A6358 National housing policy. 3 pts
Mr. Weiss.

Analysis of the main issues in national housing policy. Topics include: current legislation; policy studies; administrative reform; public-private partnerships; homeownership; financial markets and regulation; taxation; housing affordability; nonprofit development; rental housing; homelessness.

Shape of Two Cities: New York/Paris

TERM I: NEW YORK

Urban Studies C3610 Workshop in urban studies. 4 pts
Mr. Sclar.

Reading and discussions focused on issues and theories of urban planning. Data and site analyses of the New York City district toward planning intervention.

Architecture A4000 Design studio. 4 pts
Messrs. Barton, Hadighi, and Schaefer, and Ms. Perl de Pal.

Introductory studio on the analysis, representation, and design of architectural projects for New York City. The studio combines long-term projects with sketch problems. Tutorials and lectures on graphics skills.

Architecture A4027 Architecture, planning, and preservation: New York. 3 pts
Ms. Bittenwieser and Mr. Strickland.

A survey of past and present work in the three disciplines which emphasizes their interdisciplinary nature. Guest lecturers representing public and private efforts in New York's planning, design, and historic preservation. Special attention is paid to the theories of design, planning, and historic preservation which have shaped the 20th-century city. Class projects by teams that include members from both options of the program.

Architecture A4028 Building New York. 3 pts
Mr. Dolkart.

The evolution of building form and urbanism in New York City as demonstrated by a survey of the city's building types, 19th century to the present, and including residential, commercial, and institutional architecture. Lectures and tours.

Planning A6769 History of the American city. 3 pts
Ms. Wright.

The process of continuity and change in American cities from the colonial period through the 20th century, covering industrialization, political conflict, reform movements, geographical and ethnic diversity, bureaucratic rationalism, and urban culture, with focus on how physical form responded to or influenced social and political forces over time.

TERM II: PARIS

Architecture A4010 Design studio. 4 pts
Messrs. Biecher, Nordemann, and Salomon.

Architectural and urban design projects for sites in Paris; portfolio workshop.

Architecture A4025 Freehand drawing. 3 pts
Mr. Leonard.

Drawings from nature and the architecture of Paris; exercises in light and shade, line and perspective drawing, and color.

Architecture A4029 Architecture, planning, and preservation: 3 pts
Paris.
Ms. Sykes.

Continuation of the New York course with focus on Paris.

Architecture A4030 The development of Paris. 3 pts
Ms. Sykes.

A discussion of the 2,000-year development of Paris through a combination of lectures and site visits. Emphasis on the interrelationship between urban and architecture history.

Planning A4031 History of European cities. 3 pts
Ms. Ghorra-Gobin.

Focus is on the historical development of European cities and their physical form, architecture, and infrastructure. Cultural, social, and political contexts of the development of European cities are reviewed, as are the interventionary procedures used to reorganize the cities' forms over time.

Planning A4044 Seminar in comparative planning and 4 pts
preservation.
Ms. Sykes.

Comparison of the theory and practice of urban planning and historic preservation in New York and Paris. Presentation of final research projects by students.

Faculty of Architecture, Planning, and Preservation

Michael I. Sovern, LL.B., LL.D. *President of the University*

Jonathan R. Cole, Ph.D. *Provost of the University*

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B.A., California (Los Angeles), 1938; M.A., 1940; Ph.D., Massachusetts Institute of Technology, 1945; Sc.D. (hon.), New Jersey Institute of Technology, 1981; Sc.D. (hon.), Northwestern, 1989. Franklin Medal, 1977; Wallace Clement Sabine Medal, 1979; A.I.A. Medal, 1980; gold medal, Audio Engineering Society, 1984. Gold medal, Acous-

tical Society of America, 1987. Member, National Academy of Engineering; National Academy of Sciences.

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Diploma Architecture, Universidad de Cuenca, Ecuador, 1967; Design Diploma, Bouwcentrum, Holland, 1969; M.Arch., Pennsylvania, 1970. Fulbright Scholarship, 1969–1971. University of Pennsylvania Fellowship, 1969–1971. Registered architect. N.C.A.R.B. Certificate.

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M.Arch., Yale, 1955; B.S., Case Western Reserve, 1973. Fulbright Fellow, 1956. Fellow, American Institute of Architects. Registered architect.

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D.C.E., Rome, 1930; D.Math., 1933; Libero Docente in Theory of Structures, 1937.

Fellow, American Society of Civil Engineers; American Society of Mechanical Engineers; New York Academy of Sciences. Member, American Concrete Institute; International Association of Shell Structures; International Association of Bridge and Structural Engineering. Registered professional engineer.

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Maitrise, Poitiers, 1974; Ph.D., Notre Dame, 1974. Postdoctoral Fellow, Harvard University, 1974–1975; Ford Foundation Fellowship, 1972–1973; James P. Warburg Fellow, 1974–1975; Social Science Research Council Fellowship, 1977–1978; Tinker Foundation Fellowship, 1980–1981; New York Institute for the Humanities Fellow, 1983–1985; Chicago Institute for Architecture and Urbanism Fellowship, 1988–1989.

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B.A., Stanford, 1972; M.C.P., California (Berkeley), 1978; Ph.D., 1985. Lincoln Institute of Land Policy Fellowship, 1987–1988. Member, Urban Land Institute (Residential Development Council); American Planning Association; American Real Estate and Urban Economics Association. Trustee, Society for Planning History. Associate Editor, *Planning History*.

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B.A., New York University, 1969; M. Arch., California (Berkeley), 1974; Ph.D., 1978. Woodrow Wilson Fellowship, 1977; Ford Foundation Fellowship, 1979–1980; National Endowment for the Humanities Fellowship, 1980–1982; Stanford Humanities Center Fellow, 1982–1983; New York Institute for the Humanities Fellow, 1983–1985.

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B.Arch., Cornell, 1969. Chair, AIA Historic Buildings Committee, New York City, 1983–1986. Board Member, Victorian Society of America, Metropolitan New York Chapter, 1985 to the present. Director, Fine Arts Federation of New York, 1987. ICOMOS. A.P.T. N.C.A.R.B. registered architect NY, NJ, PA, DE, MD.

B.Arch., B.A., Maryland, 1983; M.Arch., Cornell, 1987.

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B.A., California (Berkeley), 1974; M.F.A., 1975; Whitney Independent Study Program, 1976; B.Arch., Cooper Union, 1983.

B.B.A., Pace, 1951; J.D., New York University School of Law, 1957; L.L.M. Taxation, New York University School of Law, 1961.

B.Arch., Cooper Union, 1980. Registered architect.

Doctorate, Architecture and Planning, University of Rome, School of Architecture, 1967. Registered architect, 1967; Architect Association, 1971, Rome; 1976, Milan.

B.B.A., Iona College, 1980; M.B.A., Iona College, 1982. Vice President Financial Services, World-Wide Holdings, New York City.

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Dipl.Arch., Architectural Association (London), 1957; M.L.A., Harvard, 1969. Member, American Society of Landscape Architects; Royal Institute of British Architects; Architectural Association (London). Registered architect, New York, New Jersey, Pennsyl-

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B.Arch., Carleton College, 1983; M.Arch., Cranbrook Academy of Art, 1985.

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B.A., New York University, 1980; M.S., Columbia, 1982. Member, American Technical Committee, Corpus Vitrearum.

Kevin L. Stayton *Adjunct Assistant Professor of Historic Preservation*

B.A., Ohio State, 1974; M.A., Yale, 1976; M.Phil., 1979. Curator of Decorative Arts, The Brooklyn Museum.

John H. Stubbs *Adjunct Assistant Professor of Historic Preservation*

B.S., Louisiana State, 1972; M.S.H.P., Columbia, 1984. ICCROM (Rome); Attingham (London).

Meredith H. Sykes *Adjunct Associate Professor of Historic Preservation; Co-Director, New York/Paris Program*

B.A., New York University, 1962; M.A., Columbia, 1964. Director, Urban Cultural Resources Survey, New York City Landmarks Preservation Commission.

Christos Tountas *Adjunct Associate Professor of Architecture*

B.A., Harvard, 1968; M.S., Columbia, 1971; M.Phil., 1976.

Karen Van Lengen *Adjunct Assistant Professor of Architecture*

B.A., Vassar, 1973; B.Arch., Columbia, 1976. Associate, I.M. Pei & Partners, 1981. Fulbright Fellow, Rome, Italy, 1982-1983. Partner, Heisel/Van Lengen Architects, 1986. Registered architect, New York, Florida. N.C.A.R.B. Member, American Institute of Architects.

Lauretta Vinciarelli *Adjunct Associate Professor of Architecture*
Arch., Urban Planning doctorate, Rome, 1970. Member, Italian Institute of Architects. Registered architect.

Rafael Vinoly *Adjunct Professor of Architecture*
Architect, U.B.A., 1969. Registered architect, CPA. A.I.A.

Christine Wade *Adjunct Assistant Professor of Urban Planning*
B.A., Bard, 1974. Computer applications consultant.

Robert F. Wagner, Jr. *Adjunct Professor of Urban Planning*
B.A., Harvard, 1965; D.Phil., Sussex, 1967; M.P.A., Princeton, 1969. Chairman, City Planning Commission, City of New York; Deputy Mayor for Policy, City of New York; Chairman of the Board of Directors, Health and Hospitals Corporation; Board of Directors, Metropolitan Transportation Authority; Chairman, Mayor's Commission on the Year 2000.

Martin Weaver *Adjunct Associate Professor of Historic Preservation*
Dipl., Architectural Association (London), 1969. Member, Royal Institute of British Architects. Director, Education and Technical Services, Heritage Canada.

Michael Webb *Adjunct Assistant Professor of Architecture*
Poly Diploma, Polytechnic of Central London, 1972.

Anthony C. Webster *Adjunct Assistant Professor of Architecture*
B.S. Eng., Summa Cum Laude, Rutgers, 1980; M.S. Structural Eng., Columbia, 1984; C.E. Structural Eng., Columbia, 1987.

Norman R. Weiss *Adjunct Associate Professor of Historic Preservation*
B.A., New York University, 1968. President, Center for Building Conservation. Senior lecturer, RESTORE. Fellow, American Institute for Conservation. Life member, Association for Preservation Technology.

Carol Willis *Adjunct Assistant Professor of Architecture*
B.A., Boston University, 1971; M.A., 1976; M.Phil., Columbia, 1979. Smithsonian Fellow, 1983-1984; Design Arts Grant, National Endowment for the Arts; Vice-President, New York Chapter, Society of Architectural Historians.

Leonardo Zylberberg *Adjunct Assistant Professor of Architecture*
Arquitecto, Buenos Aires, 1973; M.S., Arch. and Urban Design, Columbia, 1979. Registered architect, New York.

Emeriti and Retired Officers

James Marston Fitch *Professor Emeritus of Architecture*

Cyril Harris *Professor Emeritus of Architecture and Electrical Engineering*

Alexander Kouzmanoff *Professor Emeritus of Architecture*

Jan Hird Pokorny *Professor Emeritus of Architecture*

Charles J. Rieger *Professor of Architecture, Retired*

Theodor K. Rohdenburg *Professor Emeritus of Architecture*

Mario G. Salvadori *James Renwick Professor Emeritus of Civil Engineering and Architecture*

Kenneth A. Smith *Professor Emeritus of Architecture; Dean Emeritus of the Faculty of Architecture*

Administrative Officers and Staff

Office of the Dean

Dean of the Graduate School of Architecture, Planning, and Preservation
 Bernard Tschumi
 402 Avery; 854-3473

The dean is the principal representative of the School to the University, the public, and other institutions. The dean serves as the School's chief executive officer and is immediately responsible for its academic programs, including maintaining a faculty of academic excellence, overseeing its curriculum, its rules and regulations, and insuring a smooth administrative operation. He is also responsible for financial budgeting and development of the School and its centers. He oversees alumni relations.

Executive Assistant to the Dean, Director of Alumni Relations
 David Hinkle
 401 Avery; 854-3473

The executive assistant to the dean coordinates the activities of the Office of the Dean. Appointments with the dean should be scheduled with him. He maintains all records of the dean's office, as well as those of the faculty of the GSAP and handles affirmative action. He is responsible for scheduling all schoolwide meetings and events and handles the assignment of teaching assistantships and readerships. He coordinates all school special events.

Administrative Aide, Dean's Office
 Patrick Bohan
 402 Avery; 854-3473

The administrative aide provides assistance to the dean and the executive assistant to the dean. Facilities and maintenance problems should be reported to this office. He coordinates the mailing of School publications.

Associate Dean for Admissions, Financial Aid, and Student Affairs
 Loes Schiller
 400 Avery; 854-3510

The associate dean for admissions, financial aid, and student affairs is responsible for all matters pertaining to admissions, registration, student records, class schedules, financial aid, and administration of Kinne Awards. Her office handles all questions pertaining to student affairs: loan and work-study applications, course and program requirements, graduation, etc. The associate dean also participates in certain schoolwide committees. She is responsible for the management of all office personnel, and liaison with the University Personnel Office

regarding grading, salary, and negotiating for work-study personnel. She advises students throughout the year about their academic course requirements. She reviews and authorizes transcripts for graduation.

Student Affairs Officer

Regine Temple

400 Avery; 854-3510

The student affairs officer assists the associate dean for admissions in all matters pertaining to admissions, financial aid, and student affairs. She is responsible for all student records and course information. Students should go to her with all problems about academic affairs: change of grades, registration problems, housing, course information, etc. The administrative assistant also handles all admissions information.

Business Officer

Barbara Jones

406 Avery; 854-3511

The business officer handles budget and finance for the School. Students should go to her about payroll and fees (blueprint, darkroom, and class handouts such as readers).

Special Assistant to the Dean, Director of Lectures and Exhibitions

Robert McCarter

404 Avery; 854-8877

The special assistant to the dean is responsible for the day-to-day operations of the architecture programs, and reports to the dean on all these matters. He assists the dean and faculty in the development of curriculum, policy, and procedures. He is charged with the scheduling of studio reviews, lectures, and exhibitions, together with the allocation of the available spaces in the School. He oversees the procedures of studio critic selection (lottery system), the procedure for seminar enrollment, and the assembly/updating of course syllabi. He is responsible for monitoring and authorizing certain expenditures incurred by the architecture programs (archival charges, miscellaneous purchases, etc.). He is also responsible for overseeing the archives of student and faculty work.

The special assistant is also charged with the general advising of students within the programs. As director of lectures and exhibitions, he also organizes public lectures and exhibitions. He participates in the meetings of the following committees: the Architecture Program Council, the GSAP and Architecture Fellowships and Awards Committee, and the Committee on Precip.

Assistant Dean for Program Development

Roy Strickland

410G Avery; 854-1816

The assistant dean for program development is responsible for administrative matters concerning the development of new programs and/or the expansion of

existing ones. He assists the dean in a variety of tasks including the feasibility of new developments.

Director of Publications

Joan Ockman

403 Avery; 854-4821

The director of publications coordinates all publication activities within the School and is responsible for the development of new publications giving the School increased visibility.

Development Officer

JoAnn Dolan

405 Avery; 854-1821

The development officer is responsible for fundraising in the School, is the liaison between the School and the University Office of Development, and coordinates the writing of grant proposals, publicly funded research, and scholastic fund drives.

Receptionist

Bentley Storm

400 Avery; 854-3510

The receptionist has information on how best to get in touch with faculty and staff (telephone numbers and addresses of offices and residences, office hours, etc.). The receptionist is also in charge of audio-visual equipment and miscellaneous items such as first-aid materials. Audio-visual equipment must be reserved in advance with the receptionist, who also handles room reservations for reviews, special lectures, etc., and is in charge of locks and keys.

Directors

Aside from general administrative and teaching duties, directors advise the dean on overall policies, program planning, admissions, and pedagogical matters. They are responsible for coordinating and supervising the curriculum for studio or courses, and monitoring pass/fail procedures in consultation with the faculty. Directors also coordinate with other programs in the School, meet and advise faculty and students, and make recommendations to the dean for the employment of instructional staff. Each director belongs to the Director's Committee.

M.Arch. (Core): Thomas Hanrahan; 404 Avery, 854-8648

M.Arch. (Advanced): Bernard Tschumi; 402 Avery, 854-3473

M.Sci. Building Design: Robert A. M. Stern; 408 Avery, 854-3414

M.Sci. Urban Design: Roy Strickland (acting); 410G Avery, 854-1816

M.Sci./Ph.D. Urban Planning: Saskia Sassen; 410D Avery, 854-3513

M.Sci. Historic Preservation: Michael Kwartler; 410E Avery, 854-3518

M.Sci. Real Estate Development: Charles Laven; 410F Avery, 854-3046

Sequence Directors (M.Arch. Program)

In addition to teaching, sequence directors are responsible for the organization and coordination of the courses given in their field.

History/Theory Sequence Director: Mary McLeod; 408 Avery, 854-3596

Technology/Structures Sequence Directors: Robert Marino; 400 Avery, 854-2727 and Tony Webster; 400 Avery, 854-3414

Computer Studies Sequence Director: Christos Tountas; 400 Avery, 854-3414

Associate and Assistant Directors

The associate or assistant director is responsible for student counseling, job placement, alumni relations, and coordinating lectures and other extracurricular events in the program.

Associate Director M.Sc. Urban Planning: Rob Burlage; 410B Avery,
854-4243

Administrative Assistants for Programs

Administrative assistants for programs are responsible to their program director(s) and for the daily operations of their program. They oversee the preparation of all course material, official notices, and memoranda, and assist faculty with regard to their classes and course handouts. The administrative assistants also deal with student and faculty inquiries, requests, complaints, etc., and monitor all appointments made by their director(s).

Administrative Assistant, Architecture Programs: Karla Britton; 404A Avery,
854-2444

Administrative Assistant, Urban Planning: Brian Sahd; 410C Avery, 854-3513

Administrative Assistant, Historic Preservation and Real Estate Development:
Shirley Driks; 410F Avery, 854-3518

Shape of Two Cities: New York/Paris

Directors

New York: Roy Strickland; 410G Avery, 854-1816

Paris: Meredith Sykes; Atelier Columbia, 4 Rue de Jarente, 75004 Paris, France

The directors develop the program's curriculum and admissions policies in consultation with the dean of GSAP and the program's faculty, serve as academic

advisors to the students, and, in consultation with the dean, arrange the program's faculty appointments. In New York, Roy Strickland is also the recruiting director for the program and liaison for participating colleges.

Avery Architectural and Fine Arts Library

Name	Title	Office	Phone
Anthony Arboleda	Evening and Weekend Supervisor	220B Avery	854-2425
Joanne Baker	Sec'y Art Properties	W. Gallery Low (4th Floor)	854-2877
Melissa Butts	Sec'y to the Avery Librarian	228 Avery	854-6746
Anca Cazimir	Support Supervisor	231 Avery	854-3501
Katherine Chibnik	Head of Access and Support Services	229 Avery	854-3506
Kathe Chipman	Indexer/Ref. Librarian	237 Avery	854-8408
Tony Clark	Editorial Asst./Avery Index	237 Avery	854-8405
Tasneem Durrani	Circulation Asst.	220B Avery	854-2425
Duncan Elliot	Editorial Asst./Avery	237 Avery	854-8405
Gertis Fenuku	Access Supervisor	220B Avery	854-6199
Paula Gabbard	Acting Fine Arts Bibliographer	232 Avery	854-6745
Angela Giral	Avery Librarian	230 Avery	854-3068
Ted Goodman	General Editor, Avery Index	237B Avery	854-8407
Lisa Horberg	Rare Book Asst.	234 Avery	854-8409
Katie Keller	Indexer/Ref. Librarian	237 Avery	854-8406
Deborah Kempe	Indexer/Ref. Librarian	237 Avery	854-8404
Irina Kuharets	Asst. to the Curator	121 Avery	854-4110
Max Marmor	Indexer/Ref. Librarian	237 Avery	854-6757
Herbert Mitchell	Avery Bibliographer	233 Avery	854-3502
William O'Malley	Arch. Bibliographer	232 Avery	854-3982
Janet Parks	Curator of Drawings and Archives	121 Avery	854-6738

Dale Perreault	Bibliographic Asst.	231 Avery	854-8419
Charles Schultz	Serials Asst.	231 Avery	854-3501
Larry Soucy	Tech. Asst. Art Properties	W. Gallery Low Central Storage	854-2877
Barbara Sykes-Austin	Indexer/Ref. Librarian	237 Avery	854-8907
Lisa Tranberg	Reserves Asst.	220B Avery	854-6199
Sarah Weiner	Curator Art Properties	W. Gallery Low (4th Floor)	854-6800

Recent Work at the School

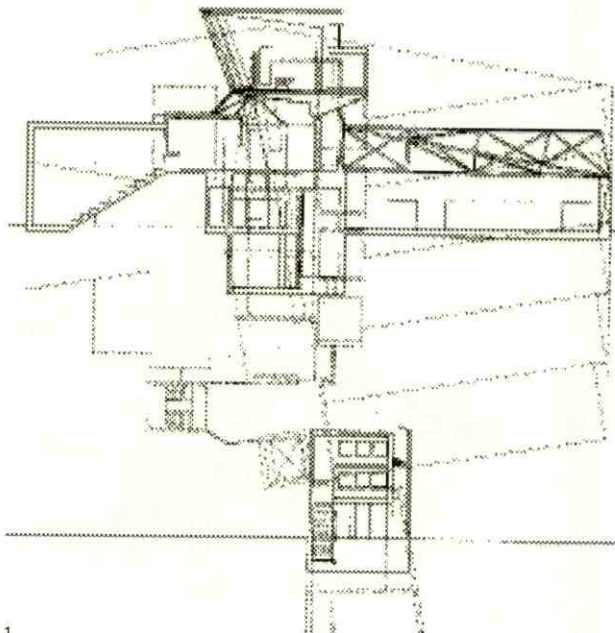
First-Year M.Arch.
Design Studio

Spring

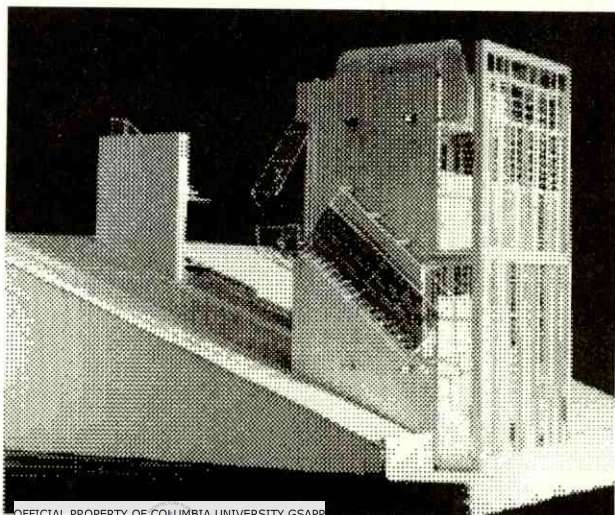
- 1 Pilot Plant, Stevens
Institute of Technology,
Hoboken, New Jersey

Autumn

- 2 Tower/House/
Observatory (Volume)



1



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2

DeSalle

Second-Year

M.Arch.

Design Studio

Autumn

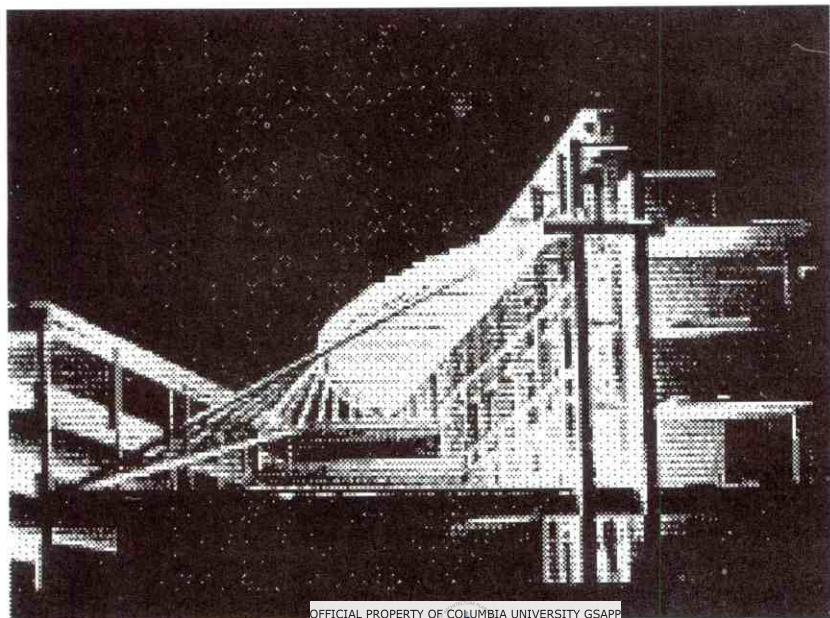
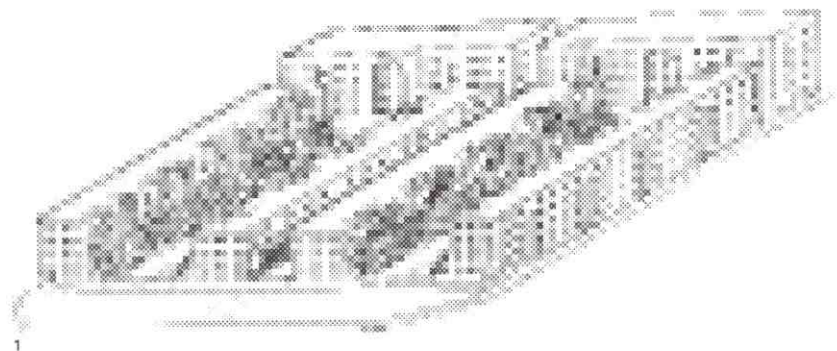
- 1 The Poble Nou Diagonal,
Barcelona, Spain

Third-Year M.Arch.

Design Studio

Spring

- 2 An Ambulatory Clinic,
New York, New York
-



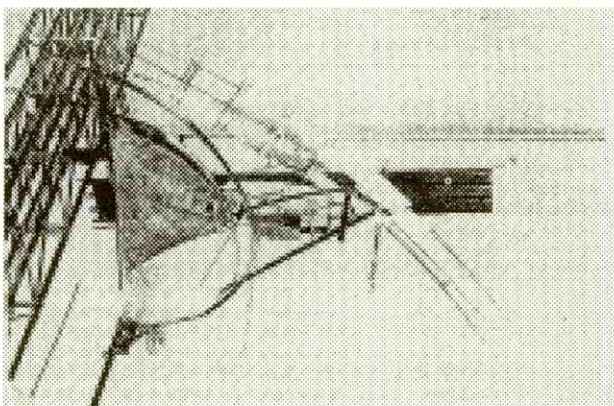
Third-Year M.Arch.
Design Studio

Spring

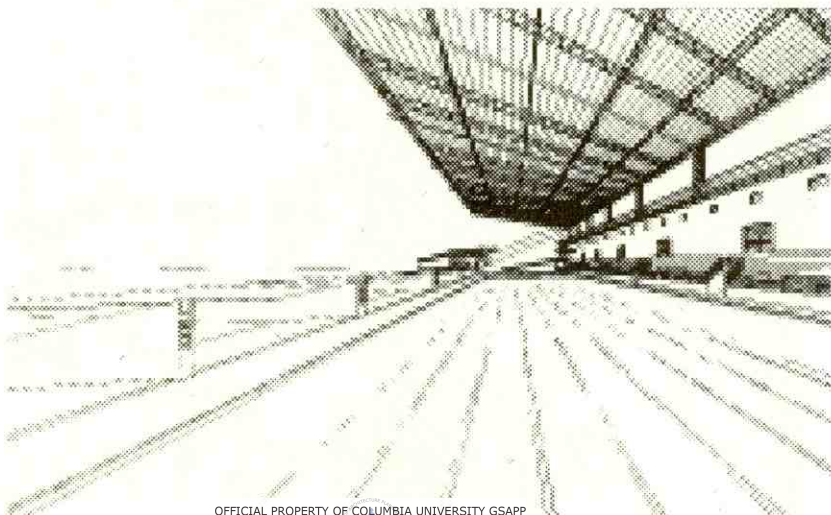
- 1 Monastic Algebra in the
City of Variables,
New York, New York

Autumn

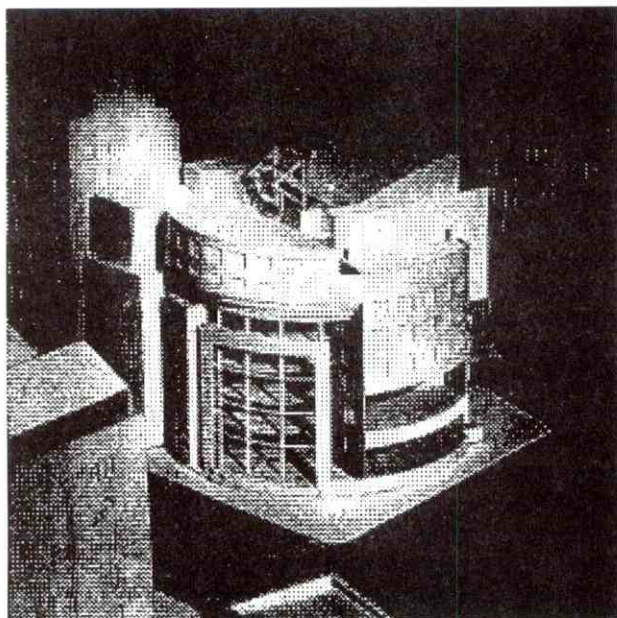
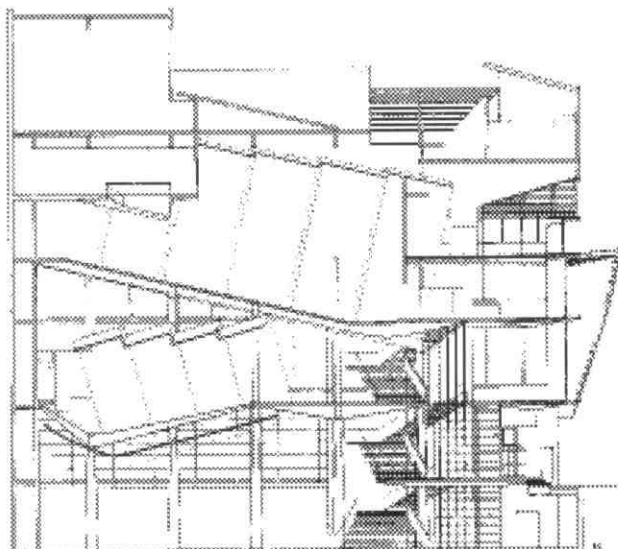
- 2 Swimming Pool Complex,
New York, New York

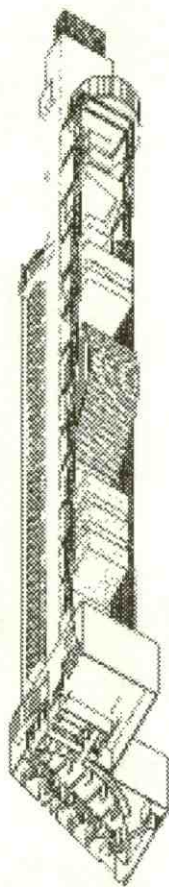
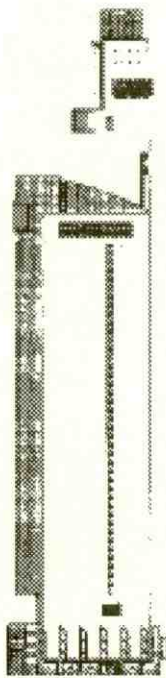
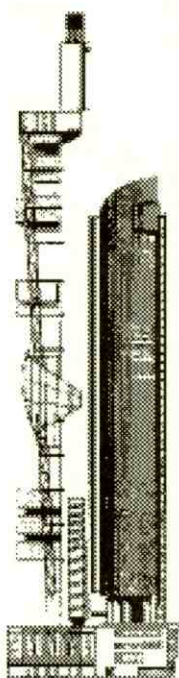


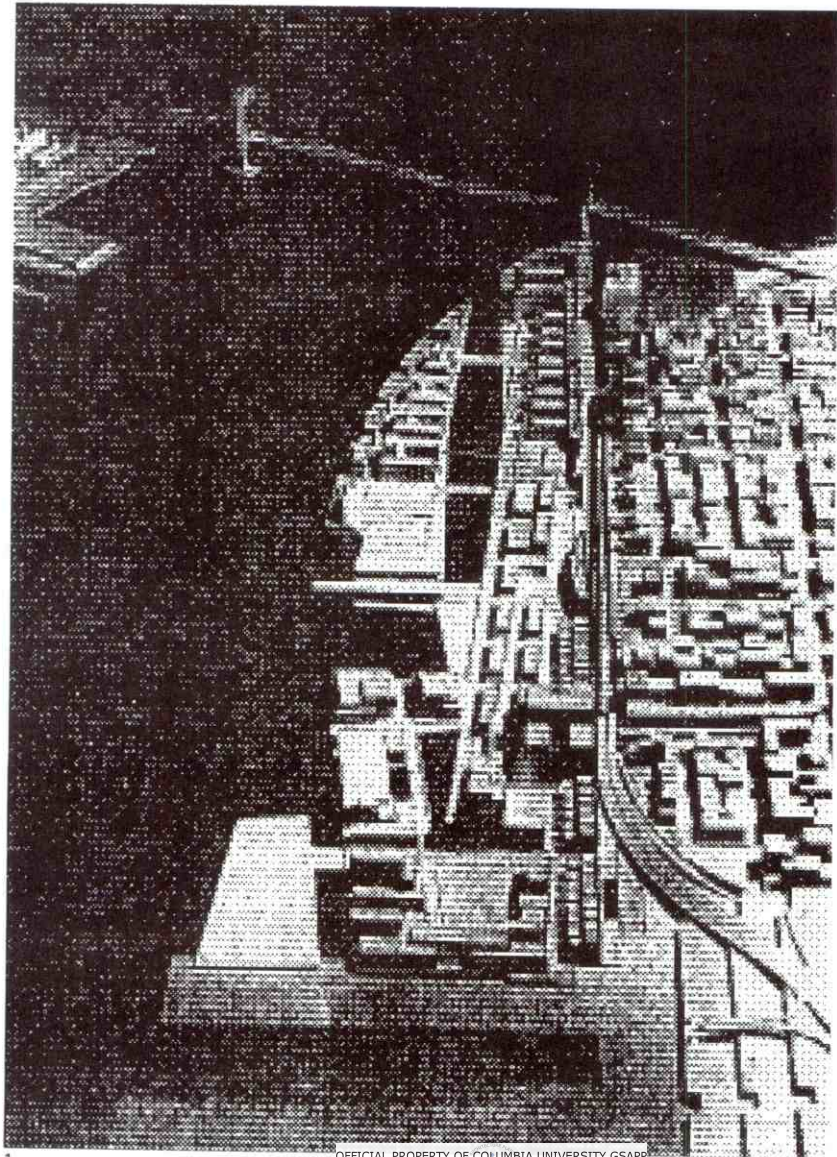
1



2





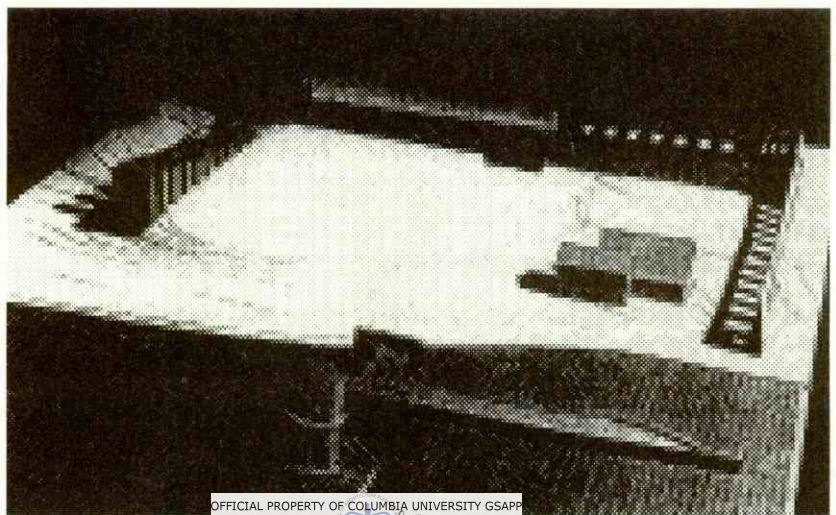
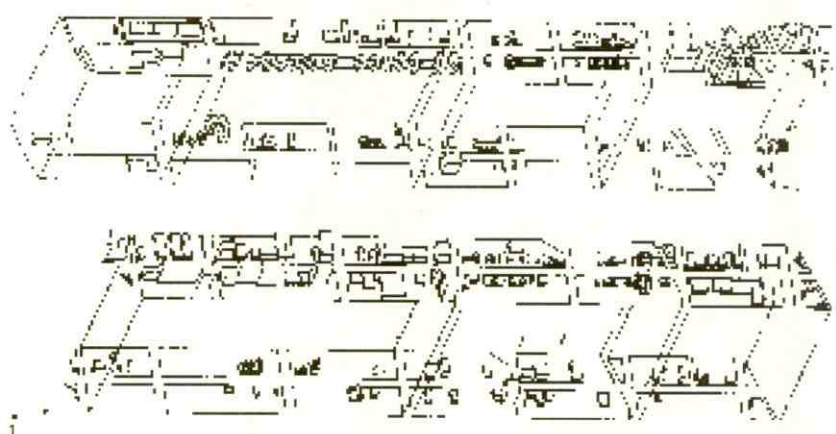


**Urban Planning
Studio**

Autumn
1 Fourteenth Street,
Manhattan

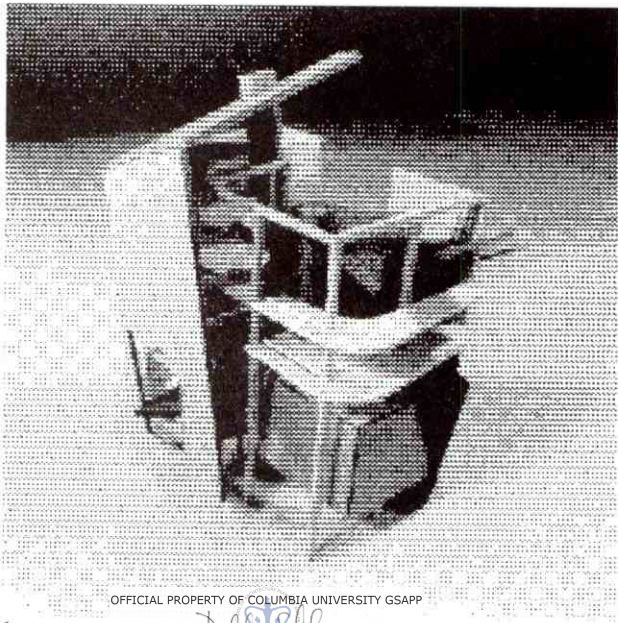
**Historic
Preservation
Studio, I**

Autumn
2 Chapel and Cemetery
on Roosevelt Island,
New York



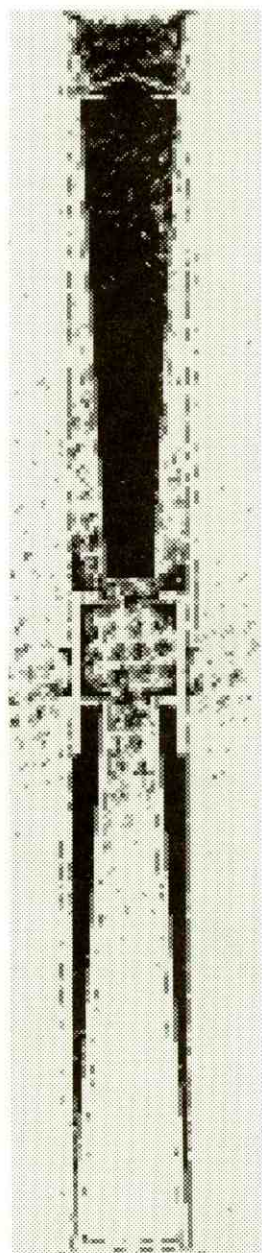
**The Shape of
Two Cities:
New York/Paris
Program**

Spring
1 Community Library,
Paris



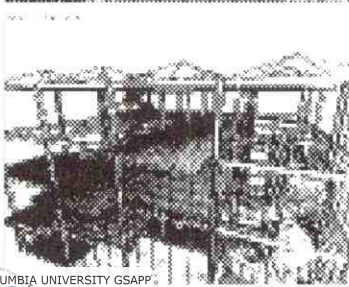
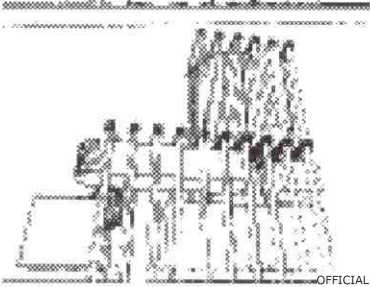
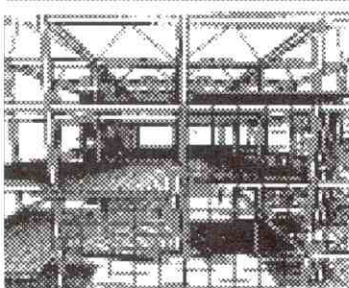
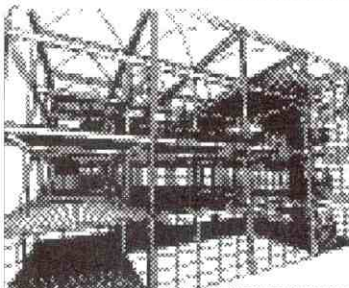
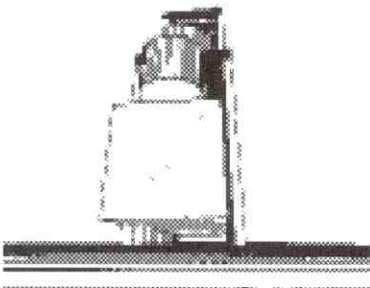
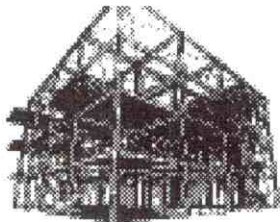
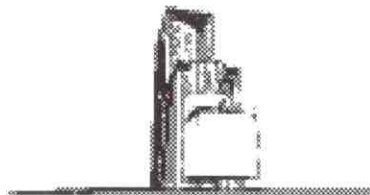
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DeStelle



**Computer-Aided
Design**
Course Sequence

- 1 Design Project: massing
model animation
- 2 Research/Instructional
Project: demonstration of
GSDL library of building
components – frames,
stairs, slabs, skylights



Admission

OFFICE OF ARCHITECTURE ADMISSIONS: 400 Avery

Telephone (212) 854-3510

Admission Procedure

Applicants should consult the admissions requirements detailed separately for each program in this bulletin. Application packets will be sent by the Office of Admissions upon receipt of the application form, part I, in the back of this bulletin. They should be completed in accordance with the instructions accompanying them. It is the applicant's responsibility to collect all the supporting materials (transcripts and letters of recommendation) and to submit them sealed in the envelopes provided. A personal statement is required of all applicants. Information on additional required supporting materials is listed below under the name of the degree offered.

Application Deadlines

For Degree Candidates

Autumn term: Applications and all supporting material for the Master of Architecture Program must be received by January 15. Scholarship applications must be received by the same date. No late applications will be accepted for the M.Arch. Program.

For applications to all other programs except the Ph.D. in Urban Planning, the deadline is February 15. The deadline for the Ph.D. in Urban Planning Program is January 1. (See the Ph.D. Program section of this bulletin for further information.)

There are no spring term admissions.

For Special Students

Autumn term: Applications must be received by July 31.

Spring term: Applications must be received by December 15.

For the Shape of Two Cities: New York/Paris (for undergraduates):

Application deadline: March 15

No application is forwarded to the Committee on Admissions until all supporting documents and materials have been received. It is the applicant's responsibility to make sure that all of the materials he or she has requested and submitted have been received prior to the deadline for receipt of applications.

Deposit

Admissions decisions are made by the Committee on Admissions. An applicant who has been accepted for admission as a degree candidate must pay a \$500 deposit to the University of Columbia.  OFFICIAL PROPERTY OF COLUMBIA UNIVERSITY GSAPP

versity within fifteen days after the notice of acceptance. This deposit is applied toward tuition when the applicant registers; if the applicant does not register, the deposit is not refunded. Credit for the deposit may be extended for twelve months when an applicant fails to register because of illness or other causes beyond the applicant's control. Proof of any extenuating circumstances may be required.

If the fee is not paid within fifteen days after receiving the notice of acceptance, the applicant forfeits the place in the School that has been reserved for him or her.

An applicant who does not accept his or her place in the School for the year admitted can reactivate the application for the following year by writing to the Office of Admissions before the admissions deadline. Readmission is not automatic.

Special Students

Professionals in fields related to architecture may be eligible to take courses in the Graduate School of Architecture, Planning, and Preservation. These students must be admitted by the Office of the Associate Dean for Admissions as *special students* (nondegree candidates). Many courses, including the design studios and seminars, are not open to special students.

If at a later date a special student wishes to apply for matriculation in any of the graduate degree programs, the student must file a formal application before the stipulated deadline. The Admissions Committee does not treat the applicant preferentially.

Students who take courses as special students and are later admitted to a degree program may be awarded advanced standing for up to 15 points of work taken as a special student. Those who wish to apply for degree candidacy are therefore urged to do so at the earliest possible time.

Summer Session

Certain introductory courses are available to students during the Summer Session of the School and the Summer Session of Columbia University.

International Students

In addition to the general admissions requirements, international students (1) who can understand rapid idiomatic English and can speak, write, and read English with a high degree of facility and (2) who can prove their ability to support themselves financially while in the United States are eligible for admission to Columbia. For a single student, a minimum of \$24,000 for living and tuition expenses for each academic year (early September to mid-May), plus travel money, is considered essential. Since an international student holding a student visa (F) or exchange visa (J) is required by the United States Immigration and Naturalization Service to carry a full program of study, students should not plan to depend on income from outside employment.

Students whose native language is not English or who did not receive their education in an English-speaking country should make arrangements to take the Test of English as a Foreign Language (TOEFL). Inquiries about this test, which is administered four times annually throughout the world, should be addressed to TOEFL, Educational Testing Service, Box 899, Princeton, New Jersey 08540, U.S.A. Applicants are urged to make arrangements to take either the November or the February examination.

All applicants who are admitted to Columbia and whose first language is not English, or who received their secondary or university education in countries where English is not the native language are, unless specifically exempted by GSAP, required to take Columbia University's English Language Placement Test—even if they have taken the TOEFL. Students who do not meet the standards of the University may be required to take English language courses before beginning or in conjunction with their programs of study. No point credit is given for these courses, and students should bear in mind the possibility that their periods of study in the United States may be lengthened by their need to gain the required proficiency in English. Provision should therefore be made for the additional living and tuition expenses that may have to be met.

Students Applying from within the United States

Students applying from within the United States, whether nonimmigrants or immigrants (permanent residents), should follow the standard application procedures.

If applying from outside the New York City area, students whose native language is not English or who did not receive their education in an English-speaking country should make arrangements to take the Test of English as a Foreign Language (TOEFL). Inquiries about this test, which is administered four times annually throughout the world, should be addressed to TOEFL, Educational Testing Service, Box 899, Princeton, New Jersey 08540. Applicants are urged to make arrangements to take either the November or the February examination.

If applying from within or near the New York City area, students must take the English Language Placement Test (in lieu of the TOEFL), unless exempted by GSAP.

Financial Aid for International Students

The Graduate School of Architecture, Planning, and Preservation does not provide financial aid for international students.

Students needing financial aid who reside in countries that have a United States Educational (Fulbright) Commission should apply through the Commission. Information about the Commission and about Fulbright grants (both travel and full-support grants) may be obtained from the nearest United States Embassy,

Consulate, or Information Service. Students in Great Britain who wish to request financial aid should apply through the English-Speaking Union, 37 Charles Street, London, W1X8AB, England.

Orientation Program for New International Students

The International Student Office orientation program for new international students takes place during orientation week. For further information, consult the International Student Office, 208 Lewisohn; telephone (212) 854-3591.

Students who are required to take the English Language Placement Test should do so as early as possible. The test can be taken during the last week of August. Test schedules are available in 505 Lewisohn.

The staff of the International Student Office, 208 Lewisohn, provides advice and counseling to international students on such matters as application for admission, housing, personal and financial problems, and regulations of the United States Immigration and Naturalization Service (visas, extensions of stay, work permission, temporary departure from the United States, transfer from Columbia to another school, termination of study). Information about the various international student clubs at Columbia and about opportunities to attend conferences, travel in the United States, and participate in community and cultural activities may be obtained from this office. Maps of New York City and discount tickets to concerts and plays are available.

Core Studio Evaluation Procedure

In addition to the above, a Comprehensive Design Review of each student with members of the design faculty will be held at the end of *Architecture A4002—Core studio, II*. This discussion will attempt to convey briefly to each student the general feeling of the faculty about his or her design work and suggestions may be made on how to prepare for the following design studio. In those cases where the student is deemed to be having difficulty with the work, the review committee may recommend and/or require:

1. Additional design work before the student proceeds to the next term;
2. A year off from school before the student proceeds to the next term;
3. A failing grade be given for the studio.

A final projects' overview by the faculty may take place at the end of the core studios.

Advanced Studio Evaluation Procedure

In addition to the above, a Comprehensive Design Review of each student with members of the design faculty will be held at the end of *Architecture A4005 (4)—Advanced studio, V (IV)*. This discussion will attempt to convey briefly to each student the general feeling of the faculty about his or her design work and suggestions may be made on how to prepare for their following and final term. In those cases where the student is deemed to be having difficulty with the work, the review committee may recommend and/or require:

1. Additional design work before the student proceeds to the next term;
2. A year off from school before the student proceeds to the next term;
3. A failing grade be given for the studio.

A final projects' overview by the faculty may take place at the end of the advanced studios.

Independent Design Option

Students entering fifth-term architecture programs who are interested in pursuing an Independent Design Option may submit proposals to the dean or the director of the advanced studios. This proposal should at a minimum comprise two typed pages and should be broken down into the following sections:

1. An identification of the problem and/or study area specifying the type, the area of study, or the state of the art;
2. A conceptual critique of this material formulating the nature of the problem or brief, and the envisaged scope of the work to be performed;
3. A short bibliography, annotated where necessary.

The proposal must identify a critical problem in the current practice of architecture which is capable of precise research and development, and of being brought to a specific resolution in terms of a hypothetical building project. While the research and design stages are seen as being relatively independent in

terms of procedure, the student must give indications as to how the research program may affect the built outcome.

If approved, the Independent Design Option may be developed first as independent research for credit (3 pts) in consultation with a faculty member who will serve as research tutor, and a member of the advanced studios faculty who will be teaching in the spring term. This research is to be carried out while still fulfilling the standard studio requirements of the fifth term.

The design aspect of the Independent Design Option is to serve as the studio subject matter for the student who will develop the design under the supervision of the same member of the advanced studio faculty in the spring term.

Academic Standing

Students receiving a grade of F in any design course, or in nondesign courses more than one F (or the equivalent), will be asked to withdraw. Although consideration is given to particular cases where a student's work has suffered because of illness, the student may be required to take additional work to demonstrate that he or she has overcome the problems that have resulted in a poor record. A student with more than two non-passing grades is not considered to be in good academic standing.

Leave of Absence

A leave of absence may be granted upon the student's written request after satisfactory completion of one year in the Graduate School of Architecture, Planning, and Preservation. Written requests must be made by December 15 for leaves beginning in January, and by August 1 for leaves beginning in September. A leave of absence assures readmission to the School provided the student complies with the terms of the leave. Leaves of absence are granted only to students in good academic standing or as required by studio faculty in the M.Arch. Program and are for a minimum of one year.

Readmission after an authorized leave of absence requires notification (by letter) to the Office of Admissions by July 1 for the autumn term and by November 15 for the spring term. Failure to give written notice on or before these dates will result in forfeiture of a place in the studio sequence; other classes may still be taken.

Readmission after an Unauthorized Absence

Students who absent themselves without obtaining a leave of absence must apply for readmission to the School. This formal application must be made to the Office of Admissions by the specified deadlines for admission. Readmission is not guaranteed.

Registration and Expenses

Registration

The registration procedure for all students is as follows (see Academic Calendar for dates):

1. The student reports to the Student Affairs Office, 400 Avery, where he or she obtains registration forms and instructions.
2. The student's program must be approved by his or her academic adviser. The student then proceeds to the Student Affairs Office in order to have the course forms signed.
3. The signed forms are then presented at registration. The location of the appropriate offices is given in the registration instructions.

All students are asked to give Social Security numbers when registering in the University. However, Social Security numbers are required of international students *only* when those students will be receiving payment from the University. International students should consult the International Student Office, 208 Lewisohn, for further information. Other students who do not have Social Security numbers should obtain them from their local Social Security offices *well in advance of registration*.

Students who are not citizens of the United States and who need authorization for a special billing of tuition and/or fees to foreign institutions, agencies, or sponsors should go to the International Student Adviser with two copies of the sponsorship letter. Special billing authorization is required of students whose bills are to be sent to a third party for payment.

Seminar Registration Procedure

Courses noted as being seminars are subject to limitations on enrollment (generally between ten and twenty students) and students are required to follow the procedure outlined below in order to apply for admission:

1. Students will be asked to submit to the professor a short curriculum vitae and a one-page description giving the reasons for their interest in the course, etc. These submissions should be turned in to the Architecture Office, 404 Avery, during the three-day registration period.
2. At the end of the registration period, the professor will select the students for the course on the basis of their submissions.
3. Those selected will be processed during the "change of programs week" following the registration period based on the lists prepared by the professors for each course.

Course syllabi will be available for students to examine at registration, listing the class schedule, readings, projects, and giving a description of the course.

M.Arch. Studio Critic Selection Procedure (Lottery)

The students will select their studio critics in a computerized lottery organized and run by the student representatives on the Program Council, following presentations made by the representative faculty members as to the nature of the projects to be given within each studio, together with the teaching intention, etc. Students will be asked to select their first, second, third, fourth, etc., choices and places will be assigned according to computer random selection, assigning students to the highest possible choices on their list. Reciprocal selection by critic may also be organized.

This does not apply to *Architecture A4001—Core studio, I* (autumn term): students in this studio will receive their faculty assignments on the first day of studio.

Auditing Courses

Degree candidates who are registered full time may audit one or two courses in any division of the University without charge. Application is made at the Office of Student Information Services, 208 Philosophy, during the change-of-program period in each term. Applications may not be filed before or after the change-of-program period.

Applications require (a) the certification of the registrar that the student is eligible to audit, and (b) the approval of the dean of the school in which the courses are offered. For approval to audit graduate courses, consult the Graduate School of Arts and Sciences Division in the Office of Student Information Services. For obvious reasons, elementary language courses, laboratory courses, studio courses, applied music courses, and seminars are not open to auditors. Other courses may be closed because of space limitations. In no case will an audited course appear on the student's record, nor is it possible to turn an audited course into a credit course by paying the fee after the fact. Courses previously taken for credit may not be audited.

Changes in Programs of Study

Students who wish to drop courses or to make other changes in their programs of study must obtain written approval from the Student Affairs Office on a special form. The deadline for making program changes in each term is shown in the Academic Calendar. In no case is permission to add courses granted after the last day of the change-of-program period in each term. *Failure to attend classes or unofficial notification to the instructor does not constitute dropping a course and results in a failing grade in the course.*

Tuition for courses dropped during the change-of-program period is refunded in full, but the comprehensive fee is not reduced. For courses dropped after the last day for change

Grades

All students registered in the Graduate School of Architecture, Planning, and Preservation are graded on the pass-fail system described below:

P = Pass (This grade indicates an acceptable level of work.)

F = Fail (The grade of F is a final grade and is not subject to reexamination.)

The mark of INC is not used except in the two cases described below:

1. At the request of a student who has satisfactorily met all the requirements for a course except for the completion of certain assigned papers, graphic presentations, or reports which the student had to postpone because of proven illness;

2. At the request of the instructor, but only in exceptional circumstances and only upon the receipt of a written petition to the office of Dean Schiller, before December 15 (autumn term) and May 5 (spring term). This petition must include two signed approvals: by the *instructor*, and by the *director* (or, alternatively, by the *dean*). This policy as stated in the rules of the School and in the bulletin will be enforced.

Authorized Incompletes must be changed to Pass by the *first* day of registration for the spring term in the case of all autumn papers and projects, and by June 10 for all spring work. Any INC that has not been removed by the instructor by the relevant deadline will automatically turn into the grade of F. This grade *cannot* be changed to Pass; if the course is a required course, it will have to be repeated.

The mark of R (registration credit; no qualitative grade earned): accepted for degree credit only in the doctoral programs. The mark of R is given only to those students who indicate, upon registration, that they intend to take the course for R credit, or who file notice of change of intention with the Office of Student Information Services no later than the last day for change of program. Students wishing to change to R credit after this date are required to submit the dean's written approval to the registrar. (The mark of R is entered on the student's record by the registrar, and thus is not a grade given by the instructor.) It should be noted further that a course that has been taken for R credit may not be repeated later for examination credit.

The mark of AB (absent from the final examination): granted by the instructor no later than the day of the examination to a student whose attendance and progress have been satisfactory and who cannot be present because of sickness or some other extreme emergency. The student must make arrangements with his or her department to take a special examination. If the AB is not removed within the arranged time period, it is automatically changed to an F.

The mark of YC (year course): given at the end of the first term of a course in which the full year of work must be completed before a qualitative grade is assigned. The grade given at the end of the second term is the grade for the entire course.

The mark of CP (credit pending): given only in graduate research courses in which student research projects regularly extend beyond the end of the term. Upon completion, a final qualitative grade is assigned and credit allowed. The mark of CP implies satisfactory progress.

Estimated Expenses

The approximate cost of attending the University for the eight months of the academic year is as follows. Tuition is for the 1990-1991 academic year.

Tuition for a 30-point program	\$14,280
Living expenses (room, board, books, clothing, laundry, travel, sundries)	10,000
	<hr/> 24,280
Tuition for the Real Estate Development Program	15,960
Tuition for the Shape of Two Cities Program	14,940

Materials

Architectural supplies for students are available at the Charrette Store in Fayerweather Hall. The School furnishes drafting tables and stools, but students must supply their own paper, instruments, and materials.

Fees

The following fees, prescribed by statute, will be in effect for 1990-1991.

University charges such as tuition and fees and residence halls and board plans are due and payable in full by the date announced before the beginning of each term. The full amount of any charge may be paid when due without penalty, or payment may be made in installments. If partial payments are made, a **FINANCE CHARGE** is assessed on amounts not paid by the due date on the initial bill received prior to registration and thereafter as indicated on subsequent monthly bills. In either event, however, the student is required to sign a Retail Installment Credit Agreement at the time of registration which sets forth the terms and conditions of payment. All charges must be paid by the end of the term.

It is the policy of the University to withhold diplomas, certificates, and transcripts until all financial obligations have been met. Candidates for graduation are urged to pay their bills in full at least one month prior to graduation.

In the event a diploma, certificate, or transcript is withheld because of an unpaid bill, a student will be required to use a certified check, money order, or cash to release any of the aforementioned documents.

Tuition

For all courses, per point, except where a special fee is fixed	\$476
With the provision that for degree candidates the tuition for a program of 15 to 19 points shall be, per term	7,140
Real Estate Program, per point	532
Shape of Two Cities Program	498

Health Service Fee and Health Insurance Premium

Payment of the health service fee, which is merely contributory to the total cost of health service, and of the health insurance premium is compulsory for some students and optional for others. Students for whom payment of the health service fee is compulsory may waive participation in one or both of the health insurance plans by showing proof of comparable coverage. For benefits attainable under these plans, for regulations governing waiver of participation, and for other information, see Medical Care and Insurance, below.

HEALTH SERVICE FEE (for 1989-1990)

For the autumn or spring term (per term)	\$100
For the summer term	60

STUDENT HEALTH INSURANCE PREMIUM (for 1989-1990)

For the autumn term (September 1-February 1)

Student only	\$150
Catastrophic coverage (available only to students)	27
Additional cost for spouse (optional)*	315
Additional cost for child/children (optional)*	160
Family coverage (optional)*	475

For the spring term and summer session (February 1-September 1)

Student only	\$200
Catastrophic coverage (available only to students)	37
Additional cost for spouse (optional)*	440
Additional cost for child/children (optional)*	220
Family coverage (optional)*	660

Application Fees

Application for admission as a degree candidate	\$35
Application for admission as a special student	15

Late Registration Fees

During late registration	\$50
After late registration	100

*Unmarried children must be under the age of nineteen. Dependent coverage is available upon application to FIDUCIARY ADMINISTRATIVE SERVICES COMPANY, 201 East 42nd Street, New York, N. Y. 10017. The premium for this coverage is paid directly to the company by the student. The application is in the Health Service brochure.

Withdrawal and Adjustment of Fees

A student in good academic standing who is not subject to discipline will always be given an honorable discharge if he or she wishes to withdraw from the University. If the student is under twenty-one years of age, a parent or guardian must first give consent in writing to the proper dean or director.

Any student withdrawing must notify the dean and the Office of Student Information Services in writing at once; any adjustment of the tuition that the student has paid is reckoned from the date on which the Office of Student Information Services receives this written notification. (For partial withdrawal, see *Changes in Programs of Study*, above.)

The application fees and late fees are not refundable. If notice of withdrawal is received by the Office of Student Information Services by September 30 (autumn term) or February 15 (spring term), health service and health insurance fees are refundable. Special fees are refundable if notice of withdrawal is received by the office by the last day of the program-change period.

In addition, at a minimum, the following amount of tuition will be retained:

Students registered for 12 or more points	\$75
Students registered for less than 12 points	40

After the last day to change programs in each term (see *Academic Calendar*), the above amount is retained *plus* an additional percentage of the remaining tuition (as indicated in the adjustment schedule below) for each week, or part of a week, that the student remains registered after these dates. The student is considered registered until the date on which the student's written notice of withdrawal is received by the Office of Student Information Services.

Adjustment Schedule

	<i>Minimum Tuition Retained</i>	<i>Percentage of Remaining Tuition Retained</i>
Up to and including dates specified above	\$40 or \$75	0
Following week	40 or 75	10
Second following week	40 or 75	20
Third following week	40 or 75	30
Fourth following week	40 or 75	45
Fifth following week	40 or 75	60
Sixth following week	40 or 75	75
Seventh following week	40 or 75	90
Eighth following week	40 or 75	100 (no adjustment)

Application or Renewal of Application for a Degree

Degrees are conferred three times a year—in October, February, and May. A candidate for any Columbia degree (except the doctoral degree) or for a certificate must file an application with the Office of Student Information Services, in 208 Philosophy, in accordance with the dates shown in the *Academic Calendar*.

Applications received *after* the filing period will automatically be applied to the next conferral date.

If the student fails to earn the degree by the conferral date for which he or she has made application, the student may renew the application.

Diplomas

There is no charge for diploma preparation except in the following instances. Students requesting a name change after submitting their degree applications are charged a \$50 fee to cover the cost of reordering their diplomas. A \$50 fee is also imposed for processing duplicate or replacement diplomas after a student has graduated. Applications for replacement or duplicate diplomas may be requested by calling the Records Division of the Office of Student Information Services, (212) 854-3937.

Name Changes

Students may change their name of record while currently enrolled in the University. There is no charge for this service. After graduation and/or attaining non-current status, students' names become a permanent part of their historic academic record and can no longer be changed. Questions about name changes should be directed to the School's division of the Office of Student Information Services, 208 Philosophy.

Transcripts and Certification

The Family Educational Rights and Privacy Act of 1974 as amended prohibits the release of educational records by institutions without the specific written consent of the student. Copies of official University transcripts can be obtained by writing to: Columbia University, OSIS Records Division, 201 Philosophy, Columbia University, New York, N.Y. 10027. Please include name, ID number, schools, and dates of attendance in the letter. Students may also come to 201 Philosophy and order records in person.

There is a charge of \$5 for official transcripts (\$1 for each additional copy ordered at the same time); checks should be payable to Columbia University. There is no charge for intra-University copies. Processing time during nonpeak periods is three to five business days, but students should allow ten days for mail delivery.

Student certification forms may be submitted in person or by mail to the above address. There is no charge for verification of attendance and degree status.

Medical Care and Insurance

The University has developed a three-part program of medical care to protect and promote the health of its students. The *University Health Service*, on the second and third floors of John Jay Hall, provides students with complete outpatient

care with its own staff of nurses, physicians, and specialists. The Health Service plan includes medical, surgical, and psychiatric consultation in the Health Service as needed; health education and outreach groups organized around topics of interest to students; an extensive program of women's health care, including gynecological care and birth control and pregnancy options, as well as routine care; coverage for necessary tests and X-rays, and medications and injections for allergy or foreign travel. The full range of services is described in the Health Service brochure issued yearly and available at registration or from the Student Affairs Office. Through its public health services, the Health Service also protects the University population from communicable diseases and occupational and environmental hazards; acts as health care provider to the faculty and staff; and supports the campus ambulance service.

The second part of the program is the *Student Health Insurance (SHI)*, which supplements the Health Service by providing emergency room, hospital, and sickness coverage throughout the year, both at Columbia and away from the University. This policy may be extended to a student's spouse and children by filing an application with the carrier and paying an additional premium.

The third level of care is provided by a catastrophic coverage plan for medical expenses up to one million dollars. This policy is available only to students.

The extensive benefits available under this policy are also described in the Health Service brochure. Further details of coverage and other insurance information can be obtained at the Health Service or by calling the company's representative, Fiduciary Administrative Services, at (212) 233-0150.

The full Health Service fee is charged to all students registered for 12 or more points. Any student living in a University residence hall will also be charged the full Health Service fee. All full-time and residential students are also enrolled in the Student Health Insurance Program unless they can prove comparable coverage (see below). Accident insurance is provided by the University to all those who pay the full Health Service fee.

Part-time students registered for less than 12 points may, if they choose, participate in the Health Service and health insurance plans by filing an application no later than the date specified in the Health Service brochure or by indicating at registration that they wish to be included.

Comparable coverage may exempt a full-time or residential student who already has a health insurance policy from paying the SHI premium if he or she completes the insurance-waiver questionnaire provided during registration and if the policy described is accepted by the University as being comparable to the Student Health Insurance Program. Students who do not know the provisions of their policy or the extent of their coverage will have the SHI premium billed as a charge until they can provide information sufficient for a waiver to be granted. *In order to receive an insurance waiver at registration, the name, number, and provisions of the policy must be known.* In the case of a waiver from the *catastrophic plan*, a copy of the actual policy should be presented.

The costs of the Health Service and the insurance program are listed on the schedule of fees under Fees, above.

Service and coverage offered, and fees for the Health Service and the insurance,

change from year to year. Students are advised to consult the latest Health Service brochure (available as noted above) for a full and current description of health benefits.

Housing

University Residence Halls

The University provides limited housing for undergraduate and graduate men and women who are registered for an approved program of full-time academic work as determined by the school in which the student is enrolled. The following rates are in effect for the academic year 1989-1990. Students can expect a rate increase for subsequent academic years.

University residence halls for single students include traditional dormitory-style facilities with single/double rooms, suites with shared common areas, and apartments. Apartments are available for married students with no children. Assignments are made for the academic year (250 days) except at Hogan, Watt, Woodbridge, and Harmony, where the assignment period is 350 days. The average room rate for single students for 250 days is \$3,100, and for 350 days, \$4,900. Apartments for married students average \$5,710 for 350 days. All residence halls spaces are furnished, and utilities (excluding telephone service) are included in the room charge. Married applicants with children are eligible only for Real Estate Management properties.

Real Estate Management Properties

These apartments are owned and managed by the University, generally within a few blocks of the campus. Accommodations vary from studio to two-bedroom apartments, with rents based on the size and location of each and whether furnishings and/or utilities are included. These are the only University accommodations for which married applicants with children are eligible. Leases for these apartments are generally written for one year, and dates do not necessarily correspond to the Academic Calendar.

Off Campus

The University also maintains a student-run off-campus registry office that endeavors to help students find rooms or apartments in rental properties not owned or operated by the University. Listings are varied, change quickly, and are not inspected or approved by the University. It is therefore necessary to visit the office, in 115 Hartley, to read the listings and arrange to evaluate personally any that may be of interest. It is advisable to telephone (212) 854-2773 in advance to determine the best time for a visit to the registry.

International House, a privately owned student residence and program center near the campus, has accommodations for about five hundred graduate stu-

dents, both foreign and American. A cafeteria, recreational facilities, and a varied cultural and professional program are available to members. One hundred twenty spaces at International House are reserved for Columbia students and are contracted through University Residence Halls. Rates for a single room in 1989-1990 range from \$2,820 to \$3,625, including meal discounts.

To be eligible for admission, a student must be at least twenty-one years old and must be registered for at least 12 points. Interested students may apply through the University Residence Halls and/or direct with International House, 500 Riverside Drive, New York, N. Y. 10027. Most of the assignments made in International House are made to direct applicants. Filing an application with both International House and University Residence Halls affords the maximum opportunity.

Disability-Related Services

Students with permanent or temporary disabilities who wish to request special arrangements are urged to notify the liaison officer for disability-related services in this School as early as possible: Loes Schiller, 400 Avery; (212) 854-3510. To allow adequate time for making such arrangements, please give at least eight weeks' notice before the start of the term involved. For taped texts or special housing arrangements, 3½ months' notice is needed. General questions about services, resources, wheelchair access, or student networking may be directed to Ms. Ruth Curtis, Coordinator, Services for Students with Disabilities, 305 Low Memorial Library, (212) 854-6794; wheelchair access is through the northeast door of Low.

Financial Aid, Awards, and Honors

General Policies

The goal of the School's program of financial assistance is to provide financial aid to U.S. citizens and permanent residents who have demonstrated need consistent with University guidelines and the analysis of the Graduate and Professional School Financial Aid Service (GAPSFAS). Financial need is met through a combination of grants and/or loans. Students should apply under the separate state-guaranteed loan programs. An entering student who receives a scholarship grant should be able to meet, through a combination of the grant, loan funds, parental contributions, summer earnings, and other resources, all expenses through the academic year. The need of a student is determined by assessing all possible resources including the student's own resources, those of his or her spouse, if any, and a parental contribution based on a uniform method of computation through GAPSFAS. From these resources, a student's estimated expenses are deducted; the difference becomes the student's "need."

In subsequent years a student who continues to have financial need and continues to achieve a satisfactory record will qualify for a continuation of financial aid. A new application must be made each year.

A scholarship grant is applied as a credit toward tuition: one half at registration for the autumn term, the other half at registration for the spring term.

Application Procedure

The Graduate School of Architecture and Planning is a participant in the Graduate and Professional School Financial Aid Service (GAPSFAS). Accordingly, all applicants, their parents, and spouses or spouses-to-be must complete a GAPSFAS application form. Such forms are obtained from GAPSFAS, Box 2614, Princeton, New Jersey 08540. A financial aid application can be considered only if it has been analyzed by the GAPSFAS. Each parent must complete the appropriate section of the GAPSFAS application. In view of limited financial aid resources, an applicant's assertion of self-support or emancipation is not recognized in awarding scholarship grants. Applications for financial aid should be filed with the GAPSFAS as soon as possible after the application deadline so that if a favorable admission determination is made, the financial aid application from GAPSFAS can be reviewed promptly.

University Fellowships and Scholarships

Fellowships and scholarships for graduate study are awarded annually from funds provided by the University and endowments. In order to be considered, applicants merely submit the financial aid request of the Graduate School of Architecture, Planning, and Preservation application to the Admissions Office at the time they apply to the School. The deadline for financial aid applications for *continuing students* is April 1. Forms can be obtained from the Admissions Office during the spring term.

Federal Financial Aid

Guaranteed Student/Stafford Loan (GSL)

Commonly referred to as the "state loan" program, the Guaranteed Student/Stafford Loan (GSL) is a federally insured, federally subsidized loan obtained through a bank, savings and loan associations, credit union or other participating lender, and is usually administered by a state guarantee agency. The maximum amount a student may borrow is \$7,500 for two terms. Repayment of interest and principal is deferred until six months after the student ceases at least half-time registration. Applications are available from participating lenders. Eligibility for a Stafford/GSL is limited to U.S. citizens and permanent residents and is based on an analysis of financial need, for which purpose submission of a financial statement to the Graduate and Professional School Financial Aid Service (GAPSEAS) is required. The GAPSEAS form may be obtained by writing to GAPSEAS, Box 2614, Princeton, New Jersey 08540. Federal regulations require that certain information concerning the student's financial status be verified by the financial aid office. Therefore, each applicant is also required to submit a copy of his or her most recent federal income tax return. Complete current information concerning eligibility requirements, borrowing limits, and conditions of repayment may be obtained from the Office of Student Affairs, 400 Avery Hall.

Supplemental Loan to Students (SLS)

The SLS program offers additional federal loan funds to students at a higher interest rate. A student enrolled at least half time may apply for up to \$4,000 an academic year to the aggregate limit of \$20,000. Unlike the Stafford/GSL, SLS has no need-eligibility requirement and therefore is usually the only source of federal loan funds for a student who is ineligible for Stafford/GSL.

The interest rate for the SLS is a variable rate. Interest payments may be deferred and capitalized. There is a thirty-day grace period once the student is no longer enrolled. Not all banks participate in the SLS program, and most participating banks require that the Stafford/GSL be borrowed through the same bank.

If a student intends to borrow through both sources, he or she should inquire about the SLS program at the time when the Stafford/GSL application is obtained. The student may find it convenient to apply for both loans at the same time. SLS applications are available from a participating bank. The student submits the completed application to the Financial Aid Office at the GSAP.

Perkins Loan (NDSL)

Loan applications are obtained from the Financial Aid Office. The completed form is submitted to the Financial Aid Office *by June 1* for the academic year in order for funds to be available for autumn registration. A student's GAPSEAS form must be on file in the Financial Aid Office before the Perkins Loan application can be considered.

A student may be eligible for the Perkins Loan as a supplement to the \$7,500 Stafford/GSL. The amount available depends on the School's allocation and the number of eligible students.

In order to be eligible a student must have financial need, based on federal guidelines, and be registered for a minimum of 12 points a term.

Student Employment

College Work-Study Program

The College Work-Study Program was established by Congress to aid U.S. citizens and permanent residents who need to work in order to meet school expenses. Eligibility for this program depends on financial need as determined by a federally mandated need analysis for which the GAPSEAS and recent income tax forms (see Stafford/GSL above) are required. Each year Columbia students fill many on-campus positions, as well as jobs in off-campus public and nonprofit organizations, through funds allocated to this program. Graduate school policy restricts employment in this program to 20 hours a week during the academic year. Students may work full time during the summer and vacation periods. Students who will begin graduate work during the regular academic year may hold work-study positions during the summer prior to their first registration.

New York State Tuition Assistance Program (T.A.P.)

Any student who can prove legal residency in New York State for the preceding year should apply for a T.A.P. award for each term in which he or she is registered as a full-time degree candidate. The amount of this award is based on the net

taxable balance of the student's income and the income of those responsible for his or her support, as reported on the New York State income tax return for the previous calendar year. Under current regulations, the maximum that may be awarded is \$1,200 for the academic year, which is divided between two terms.

Applications and further information can be obtained from the New York State Higher Education Service Corporation, 99 Washington Avenue, Albany, N.Y. 12255, or from the Financial Aid Office at the GSAP.

Financial Aid Transcripts

Applicants for financial aid must secure a financial aid transcript (not an academic transcript) from any institution previously attended, even if the student never applied for support from that institution. Forms to request this information are available from the Financial Aid Office. *Once these forms are on file, they need not be requested again for future loan applications.*

Statement of Registration Compliance and Educational Purpose

Applicants must complete a statement of compliance with the requirements of the Selective Service Act and a statement of educational purpose promising to use the aid provided for educational expenses. Forms for this purpose are available through the Financial Aid Office.

National, Regional, and Foundation Fellowships

AMERICAN INSTITUTE OF ARCHITECTS—AMERICAN INSTITUTE OF ARCHITECTS FOUNDATION SCHOLARSHIPS PROGRAM

Applications and information may be obtained from the American Institute of Architects, Scholarship Program, 1735 New York Avenue, N.W., Washington, D.C. 20006. The deadline for filing applications is usually December 31.

THE AMERICAN ASSOCIATION OF UNIVERSITY WOMEN gives fellowships to women for their last year of enrollment in professional schools. The deadline date is December 15 before the final year of graduate studies. Applications can be obtained from: AAUW, 2401 Virginia Avenue, N.W., Washington, D.C. 20037.

NEW YORK STATE REGENTS COLLEGE TEACHING FELLOWSHIPS

Annual predoctoral fellowships are open to legal residents of New York State for doctoral study in preparation for college teaching. Recipients must indicate their intent to teach in an institute of higher learning within the state upon graduation. Applications may be obtained from the New York State Higher Education Service Corporation, 99 Washington Avenue, Albany, N.Y. 12255, and are due December 1.

PUBLIC HEALTH SERVICE FELLOWSHIPS

Predoctoral fellowships are available to students in the basic sciences or the social sciences for work relating to problems of health and disease. Applications are obtained by writing to the Chief, Career Development Review Branch, Division of Research Grants, National Institute of Health, Bethesda, Md. 20014, and are due by December 1.

International Fellows Program

The International Fellows Program was created for outstanding American graduate students who wish to use their professional training on an international level. The program is open to men and women who have been admitted to graduate degree programs in Columbia University. Admission is based on the applicant's character, motivation, collegiate record, and professional promise; on the recommendations of the applicant's instructors; and particularly on the applicant's demonstrated ability and estimated potential for leadership in a chosen field and in the field of international affairs.

Each International Fellow follows the program of study prescribed by the graduate school or department of the University in which the fellow is enrolled. In addition fellows are required to take a full-year course, *IFP W6045-W6046—The role of the United States in world affairs*, open only to International Fellows. In both terms, each fellow is required to give an oral summary of a proposed position paper on an international topic, and to submit such a paper. Fellows of the Graduate School of Architecture, Planning, and Preservation receive elective credit for this course.

In addition to formal classes, the International Fellows have an extensive program of extracurricular activities. The fellows make two three-day trips to Washington to meet with Congressional leaders and executives of the Pentagon, the State Department, the White House, USIA, AID, and other agencies.

For information about the program and for application forms, write direct to the International Fellows Program, 1417 International Affairs Building, Columbia University, New York, N.Y. 10027. Applications must be submitted by April 15.

Program Scholarships and Awards

William Kinne Fellows Traveling Fellowships

The School is the beneficiary of a considerable bequest from the late William Kinne that has as its purpose the enrichment of students' education through travel. Traditional procedures of disbursement include individual, non-competitive grants for summer travel for second year architecture and planning students, and a limited number of competitive fellowships for two to three months of travel open to all graduating students in the School.

The GSAP Committee on Fellowships and Awards decides each year how to disburse the annual interest of the William Kinne Fellows Trust, according to the following procedure: available funds are divided among the programs in the School, proportionate to the length of each program and the number of students enrolled.

Graduate Kinne Fellowships

Graduate Kinnes are selected by the GSAP Committee on Fellowships and Awards.

A number of competitive fellowships for travel abroad incorporating the study of architecture, including planning and other specialized aspects of architecture, are awarded annually. Any student who receives a degree from the GSAP in October, February, or May is eligible to apply. Applications are available from the Office of the Dean of Admissions and must be returned by the date specified.

Graduate Kinnes are awarded on the merit of proposals submitted. However, a student's academic record may be taken into consideration by the committee to assure that the candidate is generally responsible and can be expected to carry out the proposal he or she submitted. Applicants are encouraged to consider their proposals seriously and write them carefully. When organizing proposals, applicants should be realistic in planning their time, the distance they will travel, and the scope of research they can accomplish within these limits. A budget should be included in the proposals. Faculty members are available for consultation and advice on constructing and writing proposals.

Recipients are required to submit evidence of substantial scholarly activity after their funds have been expended. These awards are announced by the dean at graduation.

Architecture Program Awards

Second Year or "Summer Kinne"

All M. Arch. students in good standing are eligible for individual, non-competitive grants for architecture-related travel during the summer between their sec-

ond and third years, or during the winter intersession of their third year. To qualify, students must have no Incompletes or F's on their transcripts by June 15 of the year of eligibility. Applications are available in the dean of admissions' office and must be returned in the spring term by the date indicated on the application. Students are required to donate copies of slides of their travels to the Avery Slide Library, and encouraged to make presentations of slides and sketches. Each year some William Kinne Fellows monies are allocated to help support organized summer group study in Europe. The faculty strongly urges participation, and in effect, through subsidy of these programs, allocates money above the "Summer Kinne" funds to those students who do participate. Announcements concerning summer group study are usually made at the beginning of the spring term.

Skidmore Owings Merrill Foundation Annual Fellowships

Second year M.Arch., building design, and urban design students are eligible to be selected by the Architecture Committee on Fellowships and Awards for nomination to the SOM Foundation. The SOM Fellowship awards money for nine, six, and three months of travel and research. Those students selected must submit portfolios of schoolwork to the SOM Foundation Jury, and the Architecture Program makes available limited monies to help in the production of these portfolios. Notices will be posted when submissions to the committee are needed.

Vincent G. Kling Scholarship

This scholarship, approximately two thousand dollars, is awarded each year to a student in the Master of Architecture Program. Selection is based on financial need and academic excellence.

Michael L. Bobrow Scholarship

This two-thousand-dollar scholarship is awarded each year to one or two of the very best students entering the second or third year of the Master of Architecture Program.

Alan J. Gerber Memorial Scholarship

This five-thousand-dollar scholarship is awarded each year to a student entering the second or third year of the Master of Architecture Program. The recipient is selected on the basis of financial need and design ability. The scholarship was established by Mr. and Mrs. Sheldon Gerber in memory of their son, Alan (M.Arch. '83).

Urban Planning Program

Charles Abrams Scholarship

The Charles Abrams Scholarship is a large cash award administered by the American Planning Association. It is granted to one graduate student each year from among the five universities where Charles Abrams taught: Columbia, Harvard, M.I.T., the University of Pennsylvania, and the New School for Social Research. Applications and supporting material should be submitted to the director of the Urban Planning Program by the date determined by the APA. The faculty then selects one candidate and forwards that application to the APA's Washington office.

Historic Preservation Program

The Cleo and James Marston Fitch Student Prize

The Cleo and James Marston Fitch Student Prize celebrates twenty years of preservation education at Columbia and honors its founder, James Marston Fitch. This is a cash prize awarded annually to the most promising student in historic preservation at Columbia at the completion of his or her first year. Candidates must be enrolled as full-time, first-year students in the Preservation Program and must intend to graduate from Columbia.

The candidate must submit a project done for any preservation course taken at Columbia during the autumn or spring (a design or planning project, an architectural history essay, a conservation study, etc.). Only one submission is permitted and it must have received at least a passing grade.

The Selection Committee bases its decision on the submission and is looking for quality preservation work that shows the promise of professional excellence. A deadline for the award will be announced. Applications for the award are available in the Preservation Office. Submissions are to be made to the Historic Preservation Program's administrative assistant.

The committee will meet during the summer and will announce the winner at a reception during the autumn. The Selection Committee consists of members of the preservation faculty and representatives of Preservation Alumni, Inc.

Real Estate Development Program

Battery Park City Scholarships

A limited number of fellowships are available and include full tuition and living expenses and a chance at a one-year paid internship after graduation. Created by the Battery Park City Minority Developers Assistance Corporation, the fellow-

ships provide the opportunities for minorities, historically under-represented in real estate development, to enter the field. Applicants for the fellowships must be minorities, have related work experience, demonstrate financial need, and meet all the requirements for admission to the Real Estate Development Program.

American Society of Real Estate Counselors Educational Trust Fund

Up to two \$1,000 scholarships are awarded to real estate students who may ultimately engage professionally in real estate counseling. Awards are made based on past experience, future plans, scholastic merit, and financial need.

Henry S. Miller, Sr. & Jr. Land Use and Development Fellowship

The Urban Land Institute provides one \$5,000 fellowship to a real estate student at the School. The purpose of the fellowship is to make possible a good professional education for outstanding students in land use and development. Fellowships are awarded based on students' academic standing, related work experience, goals and career plans, and financial need.

The Association of Real Estate Women Award

The Association of Real Estate Women gives a scholarship award every year to a student in the Real Estate Program.

The Starrett/HRH Scholarship Fund

The HRH Construction Corporation awards a scholarship every year to a student in the Real Estate Development Program.

Medals and Prizes

Medals and prizes are awarded at Commencement.

ALPHA RHO CHI MEDAL

Awarded annually to the student who has shown ability in leadership and who gives promise of professional merit through his or her attitude and personality.

AMERICAN INSTITUTE OF ARCHITECTS MEDAL AND CERTIFICATE

A medal and a copy of Henry Adams' *Mont Saint-Michel and Chartres* awarded annually to the student who has maintained the best general standard in all

departments during the entire professional course. A copy of the book is also given to the alternate for the prize.

AMERICAN INSTITUTE OF PLANNERS CERTIFICATE

Given to an outstanding graduate student in planning.

LUCILLE SMYER LOWENFISH MEMORIAL PRIZES

Two cash prizes awarded annually for the purchase of professional books to the students in the graduating class who submit the best theses.

NEW YORK SOCIETY OF ARCHITECTS MATTHEW DEL GAUDIO AWARD

Awarded annually to the student who has maintained the highest standard during the entire professional course.

CHARLES ABRAMS URBAN PLANNING THESIS AWARD

APA STUDENT AWARD CERTIFICATE

The certificate is awarded to one student in the Urban Planning Program for outstanding individual achievement. Nomination by the faculty is forwarded to the APA in Washington each year.

THE ROBERT GERMAIN MEMORIAL PRIZE

This prize is presented to a student of urban planning who has displayed a talent for and an interest in computer work.

THE ROBERT C. WEINBERG AWARD

This award is sponsored by the American Institute of Certified Planners of New York City for academic excellence in urban planning.

DESIGN AWARDS IN HISTORIC PRESERVATION

The Stephen Starensier design prize of \$100 is annually awarded to a second-year student in the Design Concentration of the Historic Preservation Program.

HISTORIC PRESERVATION AWARDS FOR EXCELLENCE OF THESIS

ARCHITECTURE AWARDS FOR EXCELLENCE IN DESIGN

Archives, Exhibitions, and Publication of Student Design Work

At the conclusion of each project in the studios, each studio critic selects at least two student projects for recording in the archives and for possible display in revolving exhibitions within the School. The studio critic notifies each selected student and then gives their names (along with the name of the project) to the teaching assistant who oversees the following:

1. The works are recorded (models photographed by the archive photographer; drawings to be sent out for reduction/reproduction by the teaching assistant). In all cases the student is expected to finish the models and the drawings in such a way that they are suitable for documentation.

2. The works are then considered for display in Avery Hall, for two to three weeks, and as soon as possible after they are completed. Each year in May a cumulative exhibition is shown in the main exhibition gallery.

ABSTRACT, the yearly publication of student work in the studios of the School, is drawn from the holdings of the Archives.

Several drawings from the year-end exhibition of student work are selected by the dean, the program director, and by the Avery librarian for inclusion in the permanent Avery Architectural Drawings Collection.

The School reserves the right to make a copy (photograph or print) of any work submitted for credit. Every effort will be made to produce these copies in a timely manner, but the student's work will be considered the property of the School until this process can be accomplished. The material in the Archives is not available to students for reproduction. Students are responsible for documenting their own work and for maintaining a portfolio, updated after each term.

Assistantships and Readerships

Teaching assistantships and readerships are available to qualified students. Assistants help faculty members in instruction and in administration. Compensation consists of a combination of tuition exemption and a stipend. Applications should be addressed to the assistant to the dean during the spring term of each year.

Other Sources of Student Employment

Many part-time jobs are available for students who do not qualify for the College Work-Study Program. A comprehensive list of off-campus employment opportunities is maintained by the Center for Career Services, East Campus.

Wives or husbands of students may consult the center for information. Those who are interested in full-time jobs on the campus should contact the University Personnel Office, 209 Dodge. Most of these jobs are clerical or secretarial in nature, usually requiring some typing and in some instances stenography

as well. Regular full-time University employees are eligible for a limited number of points of tuition exemption providing they meet the stated requirements of the Supporting Staff Plan (a copy of which can be obtained from the University Personnel Office, 313 Dodge), as well as the admission requirements of the school or division in which they wish to enroll. Tuition-exempt courses are taken primarily in evening classes in the School of General Studies.

A list of opportunities in architectural offices for summer employment and full-time employment for graduates is maintained in the dean's office.

Official Regulations

Reservation of University Rights

This bulletin is intended for the guidance of persons applying for or considering application for admission to Columbia University and for the guidance of Columbia students and faculty. The bulletin sets forth in general the manner in which the University intends to proceed with respect to the matters set forth herein, but the University reserves the right to depart without notice from the terms of this bulletin. The bulletin is not intended to be and should not be regarded as a contract between the University and any student or other person.

University Regulations

According to University regulations, each person whose registration has been completed is considered a student of the University during the term for which he or she is registered unless the student's connection with the University is officially severed by withdrawal or otherwise. No student registered in any school or college of the University shall at the same time be registered in any other school or college, either of Columbia University or of any other institution, without the specific authorization of the dean or director of the school or college of the University in which the student is first registered.

The privileges of the University are not available to any student until he or she has completed registration. Since, under the University statutes, payment of fees is part of registration, no student's registration is complete until the fees have been paid. A student who is not officially registered for a University course may not attend the course unless granted auditing privileges (see Auditing Courses, above). No student may register after the stated period without obtaining the written consent of the appropriate dean or director.

The University reserves the right to withhold the privilege of registration or any other University privilege from any person with unpaid indebtedness to the University.

Attendance and Length of Residence

The minimum residence requirement for each Columbia degree is 30 points of course work completed at Columbia University. Therefore, a student who wishes to receive both a master's degree and a doctorate from Columbia should be aware that any advanced standing awarded for graduate work completed elsewhere does not reduce the 60 points of residence credit required for obtaining both degrees.

Students are held accountable for absences incurred owing to late enrollment.

Religious Holidays

It is the policy of the University to respect its members' observance of their major religious holidays. Officers of administration and of instruction responsible for the scheduling of required academic activities or essential services are expected to avoid conflict with such holidays as much as possible. Such activities include examinations, registration, and various deadlines that are a part of the Academic Calendar. (See *Academic Calendar* for dates of religious holidays.)

Where scheduling conflicts prove unavoidable, no student will be penalized for absence due to religious reasons, and alternative means will be sought for satisfying the academic requirements involved. If a suitable arrangement cannot be worked out between the student and the instructor involved, students and instructors should consult the appropriate dean or director. If an additional appeal is needed, it may be taken to the provost.

Academic Discipline

The continuance of each student upon the rolls of the University, the receipt of academic credits, graduation, and the conferring of any degree or the granting of any certificate are strictly subject to the disciplinary powers of the University.

Rules of University Conduct

The Rules of University Conduct (Chapter XLI of the Statutes of the University) provide special disciplinary rules applicable to demonstrations, rallies, picketing, and the circulation of petitions. These rules are designed to protect the rights of free expression through peaceful demonstration while at the same time ensuring the proper functioning of the University and the protection of the rights of those who may be affected by such demonstrations.

The Rules of University Conduct are University-wide and supersede all other rules of any school or division. Minor violations of the Rules of Conduct are referred to the normal disciplinary procedures of each school or division ("Dean's discipline"). A student who is charged with a serious violation of the Rules has the option of choosing dean's discipline or a more formal hearing procedure provided in the Rules.

All University faculty, students, and staff are responsible for compliance with the Rules of University Conduct. Copies of the full text are available at the Office of the University Senate, 406 Low Memorial Library, at the Office of Student Information Services, 208 Philosophy, and at the Office of Student Activities, 206 Ferris Booth.

Statement of Nondiscriminatory Policies

The University is required by certain Federal statutes and administrative regulations to publish the following statements:

Consistent with the requirements of Title IX of the Education Amendments of

1972, as amended, and Part 86 of 45 C.F.R., the University does not discriminate on the basis of sex in the conduct or operation of its education programs or activities (including employment therein and admission thereto). Inquiries concerning the application of Title IX and Part 86 of 45 C.F.R. may be referred to Ms. Rosalind S. Fink, the Director of the University's Office of Equal Opportunity and Affirmative Action (305 Low Memorial Library, New York, N.Y. 10027, telephone 212-854-5511), or to the Director, Office for Civil Rights (Region II), 26 Federal Plaza, New York, N.Y. 10007.

Columbia University admits students of any race, color, national and ethnic origin to all the rights, privileges, programs, and activities generally accorded or made available to students at the University. It does not discriminate on the basis of race, color, national and ethnic origin in administration of its educational policies, admissions policies, scholarship and loan programs, and athletic and other University-administered programs.

Consistent with the requirements of Section 504 of the Rehabilitation Act of 1973, as amended, and Part 84 of 45 C.F.R., the University does not discriminate on the basis of handicap in admission or access to, or employment in, its programs and activities. Section 503 of the Rehabilitation Act of 1973 requires affirmative action to employ and advance in employment qualified handicapped workers.

The University in addition desires to call attention to other laws and regulations that protect employees, students, and applicants.

Title VI of the Civil Rights Act of 1964, as amended, prohibits discrimination on the basis of race, color, or national origin in programs or activities receiving Federal financial assistance. Title VII of the Civil Rights Act of 1964, as amended, prohibits employment discrimination because of race, color, religion, sex or national origin. Executive Order 11246, as amended, prohibits discrimination in employment because of race, color, religion, sex or national origin and requires affirmative action to ensure equality of opportunity in all aspects of employment. In addition, New York Human Rights Law, Article 15, Executive Law Section 296 prohibits discrimination in employment because of marital status.

The Equal Pay Act of 1963 prohibits discrimination on the basis of sex in rates of pay. The Age Discrimination in Employment Act of 1967, as amended, prohibits discrimination in employment on the basis of age.

The Columbia University Senate on December 1, 1978, passed a resolution announcing its general educational policy on discrimination which reaffirms the University's commitment to nondiscriminatory policies in the above-mentioned categories, as well as its policy not to discriminate on the basis of sexual orientation.

Section 402 of the Vietnam Era Veterans' Readjustment Assistance Act of 1974, as amended, prohibits job discrimination and requires affirmative action to employ and advance in employment qualified special disabled veterans and veterans of the Vietnam era.

All employees, students, and applicants are protected from coercion, intimidation, interference or discrimination for filing a complaint or assisting in an investigation under any of the foregoing policies and laws.

The University's Office of Equal Opportunity and Affirmative Action has also been designated to coordinate the University's compliance activities under each of the programs referred to above. Any employee who believes that he or she has been denied equal opportunity should contact this office, which will investigate complaints and counsel employees on questions relating to equal opportunity and affirmative action.

Discrimination Grievance Procedure

The University's Discrimination Grievance Procedure is available to enrolled students who feel that they have been the victims of sexual harassment or discrimination on the basis of race, religion, national or ethnic origin, sex, sexual orientation, marital status, age, handicap, or Vietnam Era or qualified special disabled veteran status. A copy of the Procedure is available in the Office of Equal Opportunity and Affirmative Action, 305 Low Memorial Library (854-5511).

A complaint under this procedure is initiated through completion of a Discrimination Complaint Form, also available in the Equal Opportunity Office. Staff in that office will assist in completing the form and are also available for confidential counseling and informal investigation of discrimination claims.

Right to Work Done in School

The School reserves the right to retain a copy of any work submitted for credit—drawings, designs, plates, essays, or models, as well as any fellowship competition models—whether submitted by graduates or by students in residence. The material in the Archives is not available to students for reproduction. Students are responsible for documenting their own work and for maintaining a portfolio, updated after each term.

Protection Against Sexual Harassment

Policy Statement on Sexual Harassment

Federal Law [Title VII of the Civil Rights Act of 1964] provides that it shall be an unlawful discriminatory practice for any employer, because of the sex of any person, to discharge without just cause, to refuse to hire, or otherwise to discriminate against that person with respect to any matter directly or indirectly related to employment. Harassment of any employee on the basis of sex violates this federal law.

To help clarify what is unlawful sexual harassment the Federal Equal Employment Opportunity Commission has issued Guidelines on the subject. While the EEOC Guidelines apply only to faculty and other employees, the University prohibits sexual harassment of any member of the Columbia community, whether such harassment is aimed at students, faculty, or other employees, and violators will be subject to disciplinary action. Unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature will 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 academic or employment decisions affecting that individual; or,
3. such conduct has the purpose or effect of unreasonably interfering with an individual's academic or work performance or creating an intimidating, hostile, or offensive academic or working environment.

Any person who believes that he or she is being sexually harassed should seek a resolution of the problem through discussion with the person directly concerned. If this does not resolve the matter, or if there is a reluctance to deal directly with the person involved, the problem should then be brought to the attention of a member of the University Panel on Sexual Harassment. A list of current panelists is attached. Advice may also be sought from the Office of Equal Opportunity and Affirmative Action (305 Low Library; 854-5511). If these steps have not resolved the problem, the applicable University grievance procedure should be used, including the University Discrimination Grievance Procedure that is available if no other University grievance procedure is specifically applicable. No one at the University may retaliate in any way against a person who makes a claim of sexual harassment.

Charge of the University Panel on Sexual Harassment

The Columbia Panel on Sexual Harassment is composed of trusted, accessible, and sympathetic members of the University community who act as mediators. Their goal is the protection and counseling of any member of the University who

is made to feel personally pressured or uncomfortable because of the behavior of another University member who is in a position of power. Members of the Panel provide a safe, impartial, nonadversarial setting in which the problem can be considered or solved, through confidential counseling and, when requested, mediation between the complainant and the alleged harasser. The Panel thus provides guidance and protection for the accused as well, identifying false or mistaken accusations, misunderstandings, or unconscious behavior. Panel members finally become a link through which the University can take account of, and take appropriate action against, those on campus who are behaving illegally. The Panel on Sexual Harassment is thus a timely, protective, and compassionate arm of the University, one which not only sensitizes and educates the University community, but also demonstrates the University's commitment to fair treatment of all its members.

Sexual Harassment Complaint Procedures

A. Going to a Panelist

1. A complainant comes to a Panel member with a complaint, to report an incident, or to seek advice.
2. The Panel member obtains data through discussion with the complainant, but keeps no records.
3. The Panel member selects one of the counseling or mediation options suggested by his or her training.
4. If the case seems serious enough, the Panel member refers it to the Equal Opportunity/Affirmative Action Office.

B. Initiating a Formal Investigation

1. A formal investigation may be initiated in either of the following ways:
 - a. A complainant files a formal grievance under the applicable University grievance procedure. This step may be taken at any time, either with or without consulting a Panel member.
 - b. A Panel member, believing that further action in a particular case might be appropriate, with the permission of the complainant, consults with the director of the EOAA office and the General Counsel or their designees. Consultations among the Panel member, General Counsel, and EOAA office may also occur in a case of multiple complaints.
2. All investigatory or formal actions taken will be conducted by the University and not the Panel.

Panel Membership List*

Morningside

PROFESSIONAL SCHOOLS

Mary McLeod
Graduate School of
Architecture, Planning,
and Preservation
Associate Professor
408 Avery
854-3596

Ann Bartel
Graduate School of
Business
Professor
710 Uris
854-4419

Steven H. Unger
School of Engineering and
Applied Science
Professor of Computer Science
505 Computer Science
854-8187, 2736

Kenneth Goldstein
Graduate School of
Journalism
Professor
608B Journalism
854-4718, 4150

William Young
School of Law
Professor
8W8 Law
854-2645

Phyllis Dain
School of Library
Service
Professor
611 Butler Library
854-4032

Samuel Miller
School of Social Work
Associate Professor
711 McVickar
854-2735

ARTS AND SCIENCES

(Columbia College, Gradu-
ate School of Arts and

Sciences, School of General
Studies, School of Interna-
tional and Public Affairs,
and School of the Arts)

Padma Desai
Department of Economics
Professor
1015 International Affairs
854-2266, 3681

Eric Foner
Department of History
*DeWitt Clinton Professor of
History*
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854-5253

Inge Halpert
Department of Germanic
Languages
Professor
312 Hamilton
854-5411

David Helfand
Department of Physics
Professor
1020 Pupin, Box 29
854-2150

Howard Stein
School of the Arts
Professor
605 Dodge
854-3408

CENTRAL ADMINISTRATION

Patricia Long
Assistant Controller
Box 9, Central Mail Room
854-1052

Sandra Resnikoff
Manager, Computer Systems
CUCCA
311 Watson
612 West 115th Street
854-4793

University Libraries

Angela Giral
Librarian
230 Avery Library
854-3068

Lamont-Doherty Geological Observatory

Constance Sancetta
Senior Research Scientist
Core Lab, Room 204
Palisades, N.Y. 10964
914-359-2900, Ext. 412

Nevis Laboratories

Michael Shaevitz
Professor of Physics
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(914) 591-8100, Ext. 247

Health Sciences

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Harlem Hospital Center
*Administrator for Professional
Services*
Obstetrics and Gynecology
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491-1573

Rae Janet Jacobs-Cohen
School of Nursing
Assistant Professor
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305-2809, 5654

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Center for Population and
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*Associate Professor of Clinical
Dentistry*
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305-3573

Daniel W. Morrissey
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Assistant Professor of Clinical
Behavioral Science
 Bard Hall, Box 227
 305-3989

Marion Murphy
Health Sciences
Administration
Departmental Administrator
 Pediatrics
 Babies Hospital South
 1-104
 630 West 168th Street
 305-7175

Katherine G. Nickerson
College of Physicians and
Surgeons
Instructor in Clinical Medicine
 8-507 Physicians and
 Surgeons
 305-1469

Ethel Siris
College of Physicians and
Surgeons
Associate Professor of Clinical
Medicine
 Presbyterian Hospital 4-124
 305-2529

Debra Wolgemuth
College of Physicians and
Surgeons
Associate Professor of Genetics
 1613 Black Building
 305-7900

*While Panelists are identified by location, school, or administrative area on this list, each of them is in fact available to any member of the Columbia community. Persons who feel uncomfortable speaking with "their" Panelist(s) are encouraged to seek out a Panelist from elsewhere at the University.

Governance: Schoolwide and Program Committees

Schoolwide Committees

Faculty

Full faculty meetings normally take place once a year under the chairmanship of the president of the University or the provost. The faculty is responsible for approving the requirements of admissions, the programs of study, and the conditions of graduation. The faculty consists of full-time and invited part-time faculty.

Committee on Instruction

The Committee on Instruction acts in an advisory capacity to the dean on education policy and curriculum. It is responsible under the dean and subject to approval by the full faculty for authorizing changes in course offerings. The Committee on Instruction consists of the dean, who serves as chairman, the associate dean (ex-officio), and assistant dean or its equivalent (ex-officio) as designated by the dean, six full-time faculty members, and four elected students.

Committee on Admissions and Financial Aid

This committee determines which applicants shall be admitted in the various programs within the School. It may delegate part of its function to sub-committees. It consists of the dean, the associate dean, and the assistant dean (ex-officio) as designated by the dean, and all program directors. Subcommittees may include full-time as well as part-time faculty members and graduating students.

Committee on Student Performance

This committee is an appeals committee acting on matters involving (a) advanced standing and (b) students with unsatisfactory academic records.

This committee consists of the dean, the associate dean, the assistant dean (ex-officio) or its equivalent, and three members of the faculty as designated by the dean.

Committee on Fellowships and Awards

This committee acts on all matters related to student awards, scholarships, fellowships, prizes, and grants.

It may delegate part of its function to sub-committees. It consists of the dean, the associate dean (ex-officio), the assistant dean or its equivalent (ex-officio), and all program directors.

Directors' Committee

This committee develops pedagogical policy in accordance with the overall goals of the School and the requirements set by the faculty and the various School committees. It consists of the dean, who serves as chairman, all program directors, as appointed by the dean and confirmed by the faculty of their respective programs, and the assistant dean or its equivalent.

Executive Committee

This committee acts in an advisory capacity to the dean on tenure and promotional procedures within the School. The committee consists of the tenured members of the faculty.

Program Committees

Architecture Committee on Fellowships and Awards

This committee acts on matters related to student awards, scholarships, fellowships, prizes, and grants in the M.Arch., M.S. Building Design, and Urban Design programs. It also acts on the dispersal of William Kinne Fellow funds allocated to the M.Arch. Program. It decides on the method of allocation, supervises the program of M.Arch. non-competitive grants, and judges applications for the competitive graduate scholarships. It also chooses the student nominees for the SOM Foundation Fellowship Awards, and any other architectural awards.

The committee consists of the dean, the assistant dean or its equivalent, architecture program directors, and three invited full-time or part-time faculty members.

Architecture Committee on Independent Design Option

Consists of the dean and architecture program directors.

Architecture History/Theory Committee

Consists of the dean and history/theory faculty.

Architectural Technology/Structure Committee

Consists of the dean and the technology/structure faculty.

Architecture Faculty

The entire architecture faculty meets once, usually close to the beginning of the term. In addition, there may be full-time faculty meetings during the term.

Architecture Program Council

The program council is an advisory body which may initiate and deliberate questions of policy concerning the goals, structures, curriculum, and programs as well as admissions, recruitment of faculty, and operating procedures of the program. The council also makes recommendations to the Committee on Instruction regarding changes in curriculum. Matters requiring further action (i.e., changes in curriculum) are submitted directly to the dean and faculty as necessary.

The council consists of the dean, the architecture directors or their representative, the special assistant to the dean, and two student members from each year of each architecture program. The student representatives are elected each year during the first or second meeting of the Studio. The representatives serve for a year.

Council meetings, announced by public notice, are open to all students in the Architecture Program; however, only elected representatives can vote. The council elects a chairperson for the year who is responsible for calling and chairing meetings which are held on a regular basis. One of the student members will be elected as secretary to the council and will aid the chairperson of the council with the scheduling of meetings, the preparation of agenda, and the recording and posting of minutes. The agenda includes items selected by council members from students. The council is responsible for the communication of all its decisions and discussions to the student body.

Urban Planning Program Council

The program council is an advisory body which initiates and deliberates questions of policy concerning the goals, structures, curriculum, and programs as well as admissions, recruitment of faculty, and operating procedures of the program. The council also makes recommendations to the Committee on Instruction regarding changes in curriculum. Matters requiring further action (i.e., changes in curriculum) are submitted directly to the director of the program or forwarded to the dean and faculty as necessary.

The Urban Planning Program Council is composed of two student representatives from each year of the Urban Planning Program, one student from the Ph.D. Program, and at least two full-time faculty members. They are elected by vote of the student body and serve for one year.

The Job Placement Committee identifies potential firms for recruiting and for career discussion panels scheduled on Wednesday evenings. The Student Admissions Committee is formed in the spring term to assist in the admissions process for the following year and advise on admissions for potential candidates.

Resources of the School and New York City

Employment Information

Jobs

A job file is kept in 400 Avery listing job openings which are occasionally called into the office from architectural firms and related offices in and around the Metropolitan area. These include full-time and temporary positions.

No recruiting is done for this job file; all listings are initiated by employers who call the office with the specific intention of hiring students or recent graduates. This means that the percentage of students usually hired from these files is very good. Not infrequently, specific qualifications are requested (e.g., third-year student; at least two years experience, etc.). Students who desire to work in architecture and related fields should drop by the office and familiarize themselves with the file.

One of the greatest resources of the School is that so many members of the faculty carry on active professional practices in and around New York City.

Center for Career Services

The Center for Career Services, East Campus, maintains an extensive listing of available jobs for undergraduates and graduates, though their file on architectural jobs is limited.

Job Fair

In the spring of each year, architecture students have run a job fair where representatives from leading regional offices are invited to interview students for summer and full-time postgraduate employment. Students should be aware that this fair is not organized by the School—it is initiated and run entirely by students. Coordination of rooms for interviews, etc., should be done through the special assistant to the dean.

Urban Planning Job Placement

The Urban Planning Program has its own placement center. Students seeking either part-time or postgraduation employment are urged to consult the Job Book on the south side of 400 Avery. The Urban Planning Program receives numerous job announcements and job listing publications which are collected. In addition, the program's assistant director has information on internships available to urban planning students.

Historic Preservation Job Placement

Job and internship books are available in the Preservation Office. Announcements regarding job and internship opportunities are posted regularly.

Real Estate Development Job Placement

The Job Placement Committee identifies potential firms for recruiting and for career discussion panels scheduled on Wednesday evenings.

Portfolio Advising

Members of the design faculty are available for consultation and compiling portfolios.

Student Services

Reproduction Services

Diazo Print Machine

A print machine is located on the sixth floor for use by all students enrolled in studio courses upon payment (during registration) of a \$40/year fee (\$50 for urban design) for blueprint and ammonia. Checks should be made payable to Columbia University (GSAP) and given to Barbara Jones (406 Avery) who is responsible for supply of paper and ammonia. Please advise her of any problems with the machine.

Photo Lab

Policy is set by the darkroom technician. See the executive assistant to the dean.

Photographic Copy Stand

A copy stand for taking slides is available. See the Avery slide librarian for assistance in using the stand.

The Microform Room

The Microform Room, 501 Butler Library, will blow up a black and white photographic negative to approximately 10" x 12" for 10 cents a copy. Hours: M-F, 9-5.

Columbia University Printing Services

SIA Copy Center, 400 School of International Affairs Building. Telephone: 854-3797. Hours: M-F, 9-5.

Journalism Copy Center

Journalism basement. Telephone: 854-3233.

Workshop

The Workshop, located in 101 Fayerweather, provides a place to build models, model bases, and other material assemblies. The shop technician is in charge of the Workshop, and is responsible for general building needs. Shop hours will be posted. Please report any minor building maintenance problems to the shop technician.

Food and Drink (on campus)

Columbia University maintains dining services in three principal locations, John Jay Hall, Wien Hall, and Bard Hall, in addition to several auxiliary operations. These facilities are open to all students on a cash or contract basis, whether or not they live in University residence halls.

The Department of Dining Services also operates specialty dining units on campus, as well as a diversified catering service. A la carte services are provided in the following locations:

Avery Deli (100 level): sandwiches, salads, soups, snacks, and beverages;

Uris Deli: sandwiches, salad bar, soups, snacks, and beverages;

The John Jay Lodge: foods grilled to order, soups, a complete deli bar, a self-service salad bar, dessert items, snacks, and beverages;

SIA Sandwich Bar: sandwiches, salads, snacks, and beverages;

Ferris Booth Hall Cafe: soups, sandwiches, salads, and beverages.

In addition, the Office of Student Activities operates another facility in Ferris Booth Hall. The Plex, located on the lower level, serves pizza, assorted fried foods, hamburgers, and beverages.

Vending machines are located outside 102 Avery.

Building Access and Security

The building doors are open during Avery Library hours and are locked approximately one hour after the library closes. Keys can be obtained from the receptionist for a \$5.00 deposit. You will use this key for entrance into the School after the library closes. For security reasons, propping the door open is strictly forbidden.

Thefts are a constant problem on campus. Personal possessions are kept in the School at your own risk. Maylines should be removed during intersession and immediately at the end of the school year. The School cannot be responsible for the loss of personal possessions when they are left at your station.

Information within the School

Wall space is reserved in the following areas for posting information of particular interest to GSAP students:

1. 300 level of Avery by the elevator, and in the elevator itself. Students should check these glass boxes daily for the most recent announcements (e.g., changes in meeting places, scheduling of classes, lectures, reviews, etc.).
2. 400 level of Avery by the elevator. Information regarding grants, scholarships, and various programs and competitions.
3. At doorways to each program office (Architecture, Planning, Preservation, Real Estate, etc.).
4. 500 and 600 levels of Avery. Studio information.

Student Mailboxes

Student mailboxes are located in the 400 Gallery. Please check these boxes regularly. Important announcements and all student mail is deposited there. Boxes are arranged according to first initial of last name.

Faculty Mailboxes

Individual faculty mailboxes are also located in the 400 Gallery. This is usually the best place to leave messages, papers, etc., for professors.

Newsline

Published monthly, includes events and news from the School and the city. All students receive copies of each issue.

Abstract

Yearly publication of studio work of the School, drawn from the archives. Students receive a copy at registration.

Sources of Information in New York City

In addition to this bulletin, another good source of information for Columbia students is *The Columbia Guide to New York City*, available for a small charge from the Columbia University bookstore.

Architectural Research Materials in New York City: A Guide to Resources in All Five Boroughs, by Catha Rambusch, was recently published by the Committee for the Preservation of Architectural Records of the Architectural League of New York. It describes the resources, hours, and facilities of some of the libraries listed below, as well as others. It is on reserve in Avery Library.

Below is a list of agencies and libraries which are sources of architectural information.

Butler Library

Butler Library is the main reference library of the University. It is possible to obtain books from other libraries through Butler's inter-library loan office.

Columbia University Libraries

The University has over twenty libraries. A schedule of hours is posted in Avery Library, and copies may be picked up in Butler Library.

Computing Facilities

115 Computer Center; 854-3555.

Fine Arts Slide Collection

Eighth floor, Schermerhorn; 854-3044. This collection is available to architecture students who obtain a signature from their professors. Forms for this are available in the library.

GSAP Slide Collection

204 Fayerweather; 854-5118.

Thomas J. Watson Library

107 Uris; 854-4000. Real estate information: institutional real estate, finance, and marketing.

American Institute of Architects New York Chapter

457 Madison Ave.; 838-9670.

Jack Brouse Library

New York University Real Estate Institute, 11 West 42nd St.; 790-1300.

Citizen's Housing and Planning Council

20 West 40th St.; 291-9030.

City Planning Commission

2 Lafayette St.; 566-7600.

Brooklyn Office: 16 Court St., 7th Fl.; 643-7550.

Queens Office (Long Island City): 29-27 41st Ave., 9th Fl.; (718) 392-0656.

Staten Island Office: 56 Bay St.; (718) 727-8453.

Office of Lower Manhattan Development: 2 Lafayette St.; 566-8580.

Planning and Development in Manhattan: 2 Lafayette St.; 566-0522.

Cooper-Hewitt Museum Library

2 East 91st St. (5th Ave.). Hours by appointment during the academic year.

Book Library, 860-6883; Picture Library, 860-6882.

Department of Housing and Urban Development Library

26 Federal Plaza, Rm. 3500F; 264-1739.

Engineering Society Library

345 East 47th St.; 705-7611.

Institute of Public Administration

55 West 44th St.; 730-5480.

La Guardia Archives

31-10 Thompson Avenue, Long Island City; (718) 482-5065.

Municipal Archives and Records Center

Archives: 31 Chambers St., Rm. 107; 566-5292.

Records and Reference Library: Rm. 112; 566-4284.

Municipal Art Society

457 Madison Ave. (between 50th and 51st streets); 935-3960.

Museum of Modern Art Library

11 West 53rd St.; 708-9433. By appointment only.

New York City Department of Buildings

Manhattan: Municipal Building, 1 Centre St., 20th Fl.; 566-3130.

New York Public Library

42nd St. and 5th Ave.; 661-7220.

Port Authority of New York

1 World Trade Center; 466-7000.

Pratt Institute Library

DeKalb Ave. and Hall St., Brooklyn; (718) 636-3685.

Real Estate Board of New York

12 East 41st St.; 532-3100.

School of Visual Arts Library

380 2nd Ave. (at 23rd St.); 679-7350.

The Urban Center

457 Madison Ave.; 935-3960.

Academic Calendar: 1990-1991; 1991-1992*

Major Religious Holidays

For a statement of University policy regarding holidays, see Attendance and Length of Residence under *Official Regulations*.

The Jewish and Islamic holy days begin at sundown of the preceding day. The exact dates for the Islamic holy days may vary by one or two days from the estimated dates given below.

1990-1991

Thursday, Friday, September 20, 21	Rosh Hashanah
Saturday, September 29	Yom Kippur
Thursday, Friday, October 4, 5	First days of Succoth
Thursday, Friday, October 11, 12	Concluding days of Succoth
Friday, March 29	Good Friday
Saturday, Sunday, March 30, 31	First days of Passover
Friday, Saturday, April 5, 6	Concluding days of Passover
Tuesday, April 16	Id al Fitr
Sunday, Monday, May 19, 20	Shavuoth
Sunday, June 23	Id al Adha

1991-1992

Monday, Tuesday, September 9, 10	Rosh Hashanah
Wednesday, September 18	Yom Kippur
Monday, Tuesday, September 23, 24	First days of Succoth
Monday, Tuesday, September 30, October 1	Concluding days of Succoth
Saturday, Sunday, April 4, 5	Id al Fitr
Friday, April 17	Good Friday
Saturday, Sunday, April 18, 19	First days of Passover
Friday, Saturday, April 24, 25	Concluding days of Passover
Sunday, Monday, June 7, 8	Shavuoth
Thursday, June 11	Id al Adha

Summer Session 1990

MAY

30-31 Wednesday-Thursday. Registration, including payment of fees for the summer session for Building Design, Urban Design, and the Shape of Two Cities programs. Students who register after this date must pay a late fee.

31 Thursday. Classes begin for the summer session.

*The Academic Calendar is the OFFICIAL PROPERTY OF COLUMBIA UNIVERSITY. GSAPP is an extension by the School.



JUNE

1,4-5 Friday, Monday-Tuesday. Late registration and change of program for the summer session.

5 Tuesday. Last day to (1) register for credit, (2) change programs, and (3) apply to audit courses in the summer session. No adjustment of fees for individual courses dropped after this date.

JULY

4 Wednesday. Independence Day. University holiday.

9 Monday. Registration and first day of classes for Focus on Design.

31 Tuesday. Last day to apply for admission to the autumn term as a special student.

AUGUST

1 Wednesday. Last day to file an application for October degrees and certificates. Applications received after this date will automatically be applied to the next conferral date.

24 Friday. Classes end for the summer session.

Autumn Term 1990

A late fee must be paid by students allowed to register after Friday, September 7.

SEPTEMBER

4-7 Tuesday-Friday. Registration.

6 Thursday. Classes begin.

10 Monday. Late registration begins. First day to change programs and apply to audit courses.

14 Friday. Last day to (1) register for credit, (2) change programs, (3) apply to audit courses, and (4) submit notice of withdrawal to the Office of Student Information Services for full refund of tuition and special fees. **No adjustment of fees for individual courses dropped after this date.**

30 Sunday. * Last day to submit notice of withdrawal to the Office of Student Information Services for full refund of Health Service and health insurance fees.

OCTOBER

23 Tuesday. Midterm date.

24 Wednesday. Conferring of October degrees.

*When a deadline for degree application or notice of withdrawal falls on a Saturday, Sunday, or University holiday, the deadline moves to the next business day.

NOVEMBER

- 5 Monday. Academic holiday.
- 6 Tuesday. Election Day. University holiday.
- 22-25 Thursday-Sunday. Thanksgiving holidays.

DECEMBER

- 1 Saturday. * Last day to file application for February degrees and certificates. Applications received after this date will automatically be applied to the next conferral date.
- 12 Wednesday. Classes end.
- 13 Thursday. Study day.
- 14 Friday. Last day to apply for admission to the spring term as a special student.
- 14-21 Friday-Friday. Midyear course examinations. Term ends.
- 22 Saturday, through January 15, 1991, Tuesday. Winter holidays.

Spring Term 1991

A late fee must be paid by students allowed to register after Friday, January 18.

JANUARY

- 14 Monday. Martin Luther King, Jr., Day observed.
- 15 Tuesday. Last day to apply for 1990-1991 admission to the Master of Architecture Program.
- 16-18 Wednesday-Friday. Registration.
- 21 Monday. Classes begin. Late registration begins.
- 24 Thursday. First day to change programs and apply to audit courses.
- 30 Wednesday. Last day to (1) register for credit, (2) change programs, (3) apply to audit courses, and (4) submit notice of withdrawal to the Office of Student Information Services for full refund of tuition and special fees. **No adjustment of fees for individual courses dropped after this date.**

FEBRUARY

- 13 Wednesday. Conferring of February degrees.
- 15 Friday. Last day to apply for 1991-1992 admission to the Graduate School

of Architecture, Planning, and Preservation (except for the Master of Architecture Program, see January 15, and the Shape of Two Cities Program, see March 15).

15 Friday. Last day to submit notice of withdrawal to the Office of Student Information Services for full refund of Health Service and health insurance fees.

18 Monday. Last day for Ph.D. candidates who are to stand for the final examination (defense) this term to submit applications to the dean's office.

MARCH

1 Friday. Last day to file an application for May degrees and certificates. Applications received after this date will automatically be applied to the next conferral date.

3 Sunday. Annual Commemoration Service in St. Paul's Chapel.

7 Thursday. Midterm date.

15 Friday. Last day to apply for the Shape of Two Cities Program.

17-24 Sunday-Sunday. Spring holidays.

MAY

1 Wednesday. Classes end.

2 Thursday. Study day.

3-10 Friday-Friday. Final course examinations. Term ends.

Commencement 1991

MAY

12 Sunday. Baccalaureate Service.

15 Wednesday. Conferring of degrees and certificates.

Summer Session 1991

MAY

29-30 Wednesday-Thursday. Registration, including payment of fees for the summer session for Building Design, Urban Design, and the Shape of Two Cities program.

30 Thursday. Classes begin for the summer session.

31 Friday, and June 3-4, Monday, Tuesday. Late registration and change of program for the summer session.

JUNE

4 Tuesday. Last day to (1) register for credit, (2) change programs, and (3) apply to audit courses in the summer session. No adjustment of fees for individual courses dropped after this date.

JULY

4 Thursday. Independence Day. University holiday.

8 Monday. Registration and first day of classes for Focus on Design.

31 Wednesday. Last day to apply for admission to the autumn term as a special student.

AUGUST

1 Thursday. Last day to file an application for October degrees and certificates. Applications received after this date will automatically be applied to the next conferral date.

23 Friday. Classes end for the summer session.

Autumn Term 1991

A late fee must be paid by students allowed to register after Friday, September 6.

SEPTEMBER

3-6 Tuesday-Friday. Registration.

5 Thursday. Classes begin.

9 Monday. Late registration begins. First day to change programs and apply to audit courses.

13 Friday. Last day to (1) register for credit, (2) change programs, (3) apply to audit courses, and (4) submit notice of withdrawal to the Office of Student Information Services for full refund of tuition and special fees. **No adjustment of fees for individual courses dropped after this date.**

28 Saturday.* Last day to submit notice of withdrawal to the Office of Student Information Services for full refund of Health Service and health insurance fees.

OCTOBER

22 Tuesday. Midterm date.

23 Wednesday. Conferring of October degrees.

NOVEMBER

- 4 Monday. Academic holiday.
- 5 Tuesday. Election Day. University holiday.
- 28 Thursday through December 1, Sunday. Thanksgiving holidays.

DECEMBER

- 1 Sunday. * Last day to file an application for February degrees and certificates. Applications received after this date will automatically be applied to the next conferral date.
- 11 Wednesday. Classes end.
- 12 Thursday. Study day.
- 13 Friday. Last day to apply for admission to the spring term as a special student.
- 13-20 Friday-Friday. Midyear course examinations. Term ends.
- 21 Saturday, through January 14, 1992, Tuesday. Winter holidays.

Spring Term 1992

A **late fee** must be paid by students allowed to register **after Friday, January 17.**

JANUARY

- 15 Wednesday. Last day to apply for 1992-1993 admission to the Master of Architecture Program.
- 15-17 Wednesday-Friday. Registration.
- 20 Monday. Martin Luther King, Jr., Day observed.
- 21 Tuesday. Classes begin. Late registration begins.
- 24 Friday. First day to change programs and apply to audit courses.
- 30 Thursday. Last day to (1) register for credit, (2) change programs, (3) apply to audit courses, and (4) submit notice of withdrawal to the Office of Student Information Services for full refund of tuition and special fees. **No adjustment of fees for individual courses dropped after this date.**

FEBRUARY

- 12 Wednesday. Conferring of February degrees.
- 14 Friday. Last day to submit notice of withdrawal to the Office of Student Information Services for full refund of Health Service and health insurance fees.

15 Saturday.* Last day to apply for 1992-1993 admission to the Graduate School of Architecture, Planning, and Preservation (except for the Master of Architecture Program, see January 15, and the Shape of Two Cities Program, see March 15).

17 Monday. Last day for Ph.D. candidates who are to stand for the final examination (defense) this term to submit applications to the dean's office.

MARCH

1 Sunday.* Last day to file an application for May degrees and certificates. Applications received after this date will automatically be applied to the next conferral date.

1 Sunday. Annual Commemoration Service in St. Paul's Chapel.

5 Thursday. Midterm date.

15 Sunday.* Last day to apply for the Shape of Two Cities Program.

15-22 Sunday-Sunday. Spring holidays.

APRIL

29 Wednesday. Classes end.

30 Thursday. Study day.

MAY

1-8 Friday-Friday. Final course examinations. Term ends.

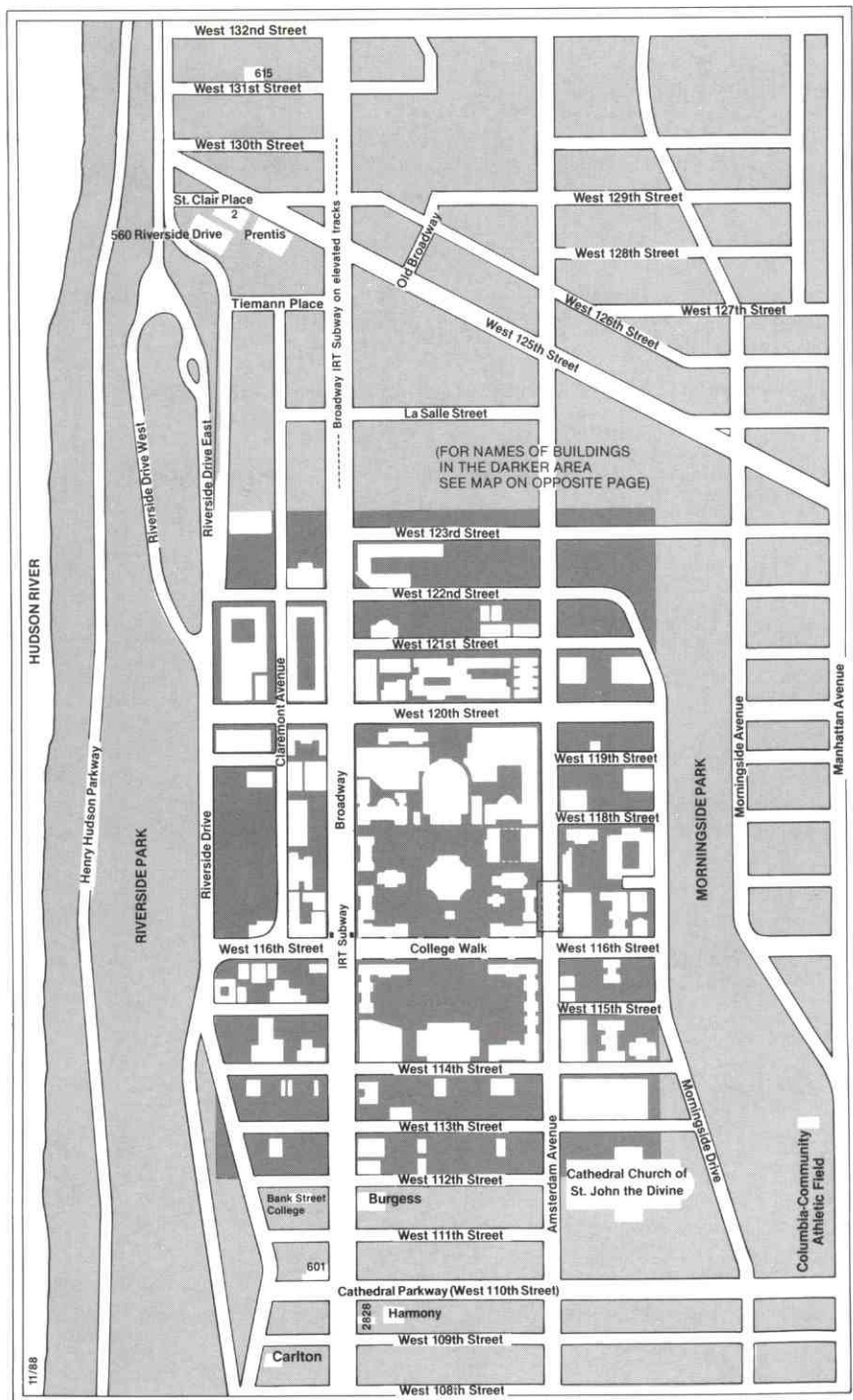
Commencement 1992

MAY

10 Sunday. Baccalaureate Service.

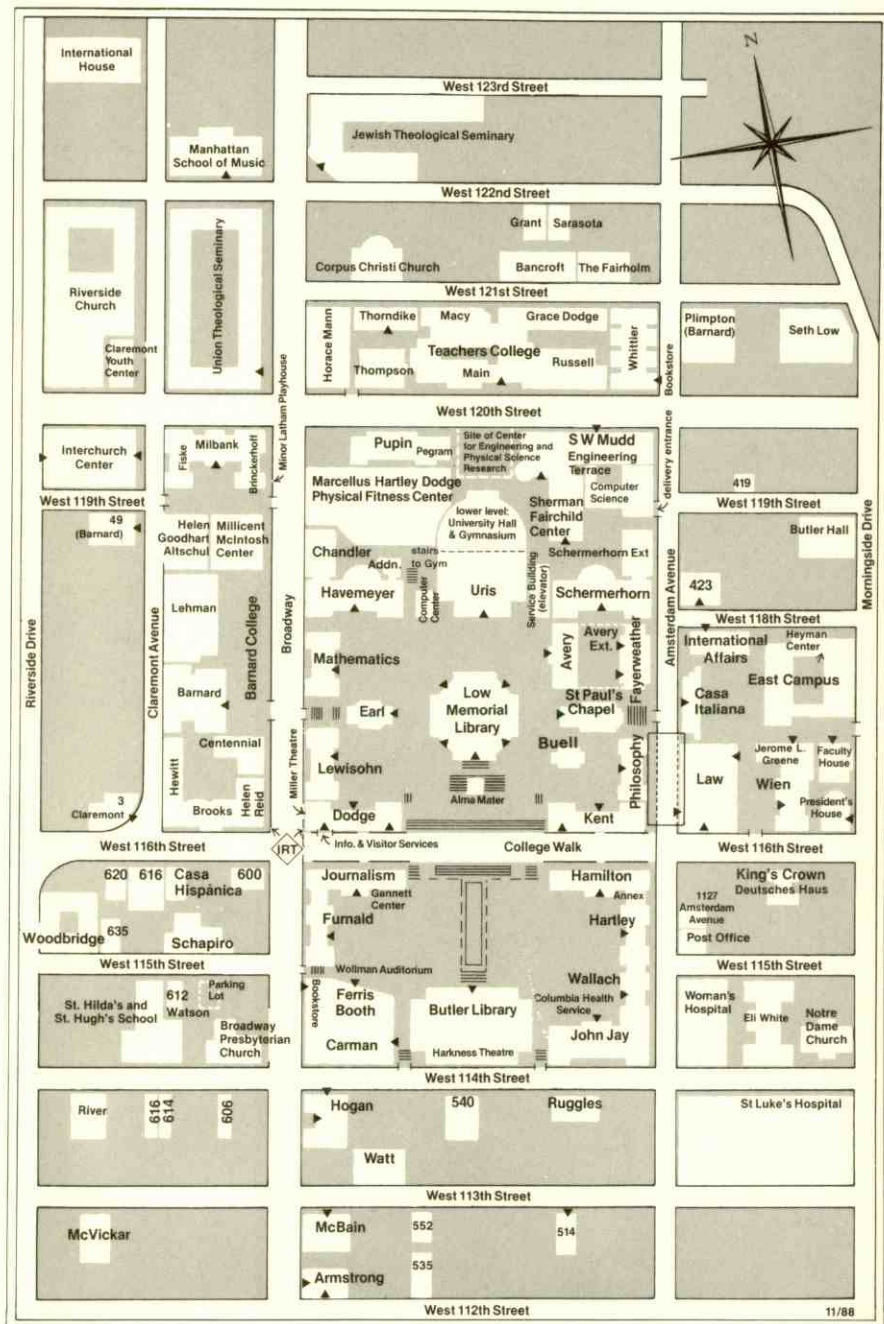
13 Wednesday. Conferring of degrees and certificates.

The Morningside Heights Area of New York City



COLUMBIA UNIVERSITY

The Morningside Campus & Environs



Del Sol

DeSalle