Graduate School of Architecture, Planning, and Preservation

Columbia University Bulletin

1986/1988

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Contents

Philosophy and Goals of the School

The Graduate School of Architecture, Planning, and Preservation comprises two distinctive but cooperating divisions. The educational disciplines concentrated within each of these divisions deal in different ways with one general problem area: man and his environment. The presence of the two areas of study within a single school makes possible a better understanding of the forces entering into the creation of environment and the interdependency of these forces.

In each degree program offered, it is the intention to provide students with the information and strategies to enable them, as professionals, to deal responsibly with the problems that confront man in his environment. All of these problems are approached from points of view that take into account each problem's theoretical base as well as the actual constraints involved in problem solving in the real world. A major concomitant of this attitude is the implicit mandate that no architectural, preservation, or planning problem be undertaken unless a major component of its solution provides the community, in its narrowest as well as its broadest sense, with results permanently useful and beneficial to all.

The following are the general goals of the School and the specific educational aims and activities by which the goals are implemented. It must be emphasized that these activities are not discrete; they interact and reinforce one another. The curriculum is of course the vehicle that concretely expresses and realizes these objectives.

1. In order to provide the atmosphere and opportunity for the intellectual growth and development of all students and faculty, the School offers sequential courses, which correspond to student needs and capabilities, and staffs these offerings with instructors who are committed to the general goals of the School and are capable of rigorous and nondoctrinaire academic leadership.

2. In order to develop new knowledge that will materially add to the vitality both of the professions and of society as a whole, the School promotes basic research in the fields of architecture, preservation, and planning.

3. In order that the School may function as an integral and contributing part of the intellectual community of the University, programs and curricula are formulated that symbiotically relate to other activities in the University—emphasizing the traditionally interdisciplinary nature of the fields of architecture, historic preservation, and planning.

4. In order to serve broadly defined social purposes, the program of the School focuses on contemporary problems relating to urban and rural man-made and natural environments, toward the solution of which the School utilizes resources outside the University and engages in the dissemination of socially useful information.

The School has a realistic and comprehensive set of programs in order to help students to overcome the restrictions imposed by a narrow conception of their professional role, thereby encouraging them, as graduates, to use their unique talents to bring about positive structural change within our society.

James Stewart Polshek, F.A.I.A.

Dean of the Faculty of Architecture, Planning, and Preservation

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 *Ecole 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. In 1973, in accord with the decision of the School to offer only graduate degrees, the name of the School was changed to the Graduate School of Architecture and Planning.

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.

In 1986, to reflect the reorganization of the School, the name was changed to the Graduate School of Architecture, Planning, and Preservation.

Facilities and Resources

The School

The School is located in its own building, Avery Hall; in the adjacent building, Fayerweather Hall; and in the Avery extension, which connects the two. This

complex houses design studios, classrooms, lounges, exhibition galleries, a carpentry workshop, audio-visual facilities, a slide library, a photography darkroom, a 300-seat auditorium, and a 70-seat lecture hall.

Avery Library

The resources of the world's leading architectural 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 two hundred thousand 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 the contemporary architectural movement. In addition, the library has over one hundred thousand original architectural drawings, collections of prints, and rare photographic material. Avery Library also contains the most extensive periodical index in the field of architecture, now available on-line as well as in printed 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 publications, exhibitions, seminars, and symposia 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.

Community Design Workshop

The Community Design Workshop has been developed to provide research and development assistance to community organizations and public agencies. Its central purpose is to afford all students enrolled in the School's divisions and programs a practical exposure to and a concrete involvement in current community planning and design issues, to guide them in providing realistic solutions to design problems, and to explore the extent to which architecture, planning, and historic preservation can be useful tools in the resolution of community problems. In turn, the Workshop's projects help to expand and transform the scope of studio projects.

Recent projects include the Study of Illegal Storefronts and the Preservation of the Grand Concourse in the Bronx with the City Planning Department; Shared Housing and Single Room Occupancy Buildings with the Columbia University Community Services Program; the design of new quarters for Rheedlen, an Upper West Side, nonprofit program; a feasibility study for a dormitory for the Manhattan School of Music; and a Housing Platform for Harlem.

Students may elect to join the Workshop for credit or for work/study. The staff includes interested faculty members and a research assistant.

Computing Activities

The University Center for Computing Activities, between Uris and Havemeyer halls, has available advanced digital computing equipment (at present, principally two IBM mainframes and four DEC System 20s for auxiliary and research purposes. One hundred fifty public terminals exist on campus including some in dormitories and libraries. A public access microcomputing laboratory with fifty microcomputers of various types opened in 1985. Professional programmers are available at the Center to advise and guide persons who use the equipment. Short, noncredit courses are offered by the staff of the Center for qualified students and faculty members.

In 1986 the Graduate School of Architecture, Planning, and Preservation, through a grant from the University and the IBM Corporation, opened a computer graphics laboratory in Schermerhorn Hall. The facility contains ten IBM/PC-ATs with plotters and graphics software to develop projects in computer-assisted design and thematic maps.

New York City

The City of New York is in itself a principal resource for the student of architecture, who benefits from its 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 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 Cooper-Hewitt Museum, 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 in the Division of Urban Planning and Historic Preservation. It is the intention of the professorship to encourage a deepening interest in the forces that have and will shape urban development in America.

Career Counseling and Placement

The University Office of Placement and Career Services in 306 Buell holds regular workshops on seeking employment—from preparing a résumé to interviewing for a job. Students may also, by appointment with faculty members and administrators of the School, seek advice on career opportunities and other aspects of securing employment. The alumni organizations of the two divisions of the School sponsor an annual "job fair," at which students may attend seminars on career paths and portfolio- and résumé-making, and arrange for job interviews with firms whose representatives come to the School. In addition, there is a "job book," located in 400 Avery, which contains listings of part-time and full-time job openings called in from recruiting employers.

Mathews Lecture Series

The Graduate School of Architecture, Planning, and Preservation celebrated the fiftieth anniversary of the Charles T. Mathews Foundation Lectures on Medieval

Art and Architecture in the autumn of 1985. The anniversary lecture was given by Professor Georges Duby of the Collège de France. Professor Duby spoke on The Cathedral, the City, and the Royal Power.

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

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 Historic Preservation

Master of Science in Real Estate Development

Master of Science in Urban Planning

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 Business Administration (in conjunction with 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)

Faculty of Architecture, Planning, and Preservation

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

Robert F. Goldberger, M.D. *Provost of the University*

James Stewart Polshek, B.S., M.Arch. *Dean of the Faculty of Architecture, Planning, and Preservation*

Amy Anderson *Assistant Professor of Architecture*
B.A., Wellesley, 1973; M.Arch., Columbia, 1978; A.I.A. Medal, 1978; Rome Prize, 1980–1981. Registered architect.

Harold K. Bell *Professor of Architecture and Urban Planning*
B.B.A., College of the City of New York, 1947. H.U.D. "Operation Breakthrough" award winner. Member, Steering Committee, National Urban Planning and Design Committee; A.P.A. Urban economist, A.I.A., Regional Urban Design Assistance Teams.

Daniel M. Bluestone *Assistant Professor of Architecture and Historic Preservation*
B.A., Harvard, 1975; Ph.D., Chicago, 1984. Mrs. Giles B. Whiting Fellow in the Humanities, 1982–1983; First Ladies' Fellow, National Museum of American History, Smithsonian Institution, 1984–1985. Board member, Society for Commercial Archaeology.

Zeynep Celik *Assistant Professor of Architecture*
B.Arch., Istanbul Technical University, 1975; M.Arch., Rice, 1978; Ph.D., California (Berkeley), 1984.

Schuyler Chapin *Dean of the Faculty of the Arts*
L.H.D., Hobart and William Smith, 1974; L.H.D., New York University, 1974; D.Litt., Emerson, 1976.

George R. Collins *Professor of Art History*
B.A., Princeton, 1939; M.F.A., 1942.

Joseph Connors *Associate Professor of Art History*
B.A., Boston College, 1966; B.A., Clare College (Cambridge), 1968; M.A., Harvard, 1972; Ph.D., 1978.

Charles Downs *Assistant Professor of Urban Planning*
B.A., Michigan, 1970; M.C.P., California (Berkeley), 1974; Ph.D., 1980. Member, Planners' Network.

Stanton Eckstut *Adjunct Professor of Architecture; Director, Urban Design Program*
B.Arch.Eng., Pennsylvania State, 1965; M.Arch., Pennsylvania, 1968. Member, American Institute of Architects. Registered architect. N.C.A.R.B. certificate.

Kenneth Frampton *Professor of Architecture; Chairman, Division of Architecture*
Dipl.Arch.,Dipl.Trop., Architectural Association (London), 1956; A.R.I.B.A., 1957. Member, A.R.C.U.K. A.I.A. Honors Award for a critical contribution to architecture; U.I.A. International Prize for criticism.

Romaldo Giurgola *Ware Professor of Architecture*
Architect, Rome, 1948; M.S., Columbia, 1951. Fellow, American Institute of Architects; Italian Order of Architects. Registered architect. N.C.A.R.B. certificate. Gold Medalist, 1982, American Institute of Architects.

Sigurd Grava *Professor of Urban Planning*
B.C.E., College of the City of New York, 1955; M.S., Columbia, 1957; Ph.D., 1965. William F. Kinne Fellows Traveling Fellow, 1958. Member, American Institute of Planners; American Society of Civil Engineers. Licensed professional planner.

Marta Gutman *Assistant Professor of Architecture*
B.A., Brown, 1975; M.Arch., Columbia, 1981.

Thomas Hanrahan *Assistant Professor of Architecture*
B.S., Illinois, 1978; M.Arch., Harvard, 1982. Wheelwright Fellow, Harvard, 1985–1986. Registered architect.

Cyril M. Harris *Professor of Architecture and Charles Batchelor Professor of Electrical Engineering*
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. Franklin Medal, 1977; Wallace Clement Sabine Medal, 1979; A.I.A. Medal, 1980; Gold medal, Audeo Engineering Society, 1984. Member, National Academy of Engineering; National Academy of Sciences.

Klaus Herdeg *Professor of Architecture*
B.Arch., Cornell, 1963; M.Arch., Harvard, 1964. Member, Swiss Society of Architects and Engineers. Wheelwright Fellow, Harvard, 1974–1975. Registered architect.

Ghislaine Hermanuz *Adjunct Associate Professor of Architecture; Director, Community Design Workshop*
Dipl.Arch., Polytechnic Institute of the University of Lausanne, 1967; M.S., Columbia, 1970. Member, Société d'Architectes et d'Ingénieurs; Société des Ingénieurs Civils de France. Registered architect, Switzerland.

Mark A. Hewitt *Assistant Professor of Architecture and Historic Preservation*
B.A., Yale, 1975; M.Arch., Pennsylvania, 1978. Graham Foundation Fellowship, 1985; Member, Society of Architectural Historians. Registered architect.

Steven Holl *Associate Professor of Architecture*
B.Arch., Washington (Seattle), 1971. Architectural Association (London), 1976. Registered architect. N.C.A.R.B. certificate. New York State Council of the Arts Fellowship, 1979.

Kenneth T. Jackson *Professor of History*
B.A., Memphis State, 1961; M.A., Chicago, 1963; Ph.D., 1966. Fulbright Professor, 1974; Guggenheim Fellow, 1983–1984; Fellow, Society of American Historians.

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B.A., Yale, 1974; M.A., Columbia, 1977; Ph.D., Yale, 1984.

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B.Arch., Cooper Union, 1965; Ecole des Beaux Arts, 1966; M.S., Columbia, 1986. Member, American Institute of Architects; Mayor's Open Space Task Force. Registered architect.

William J. MacDonald *Associate Professor of Architecture; Director, M.S. Degree in Architecture and Building Design Program*

B.Arch., Syracuse, 1979; Architectural Association (London), 1978; M.S., Columbia, 1982.

Peter Marcuse *Professor of Urban Planning*

B.A., Harvard, 1948; J.D., Yale, 1952; M.A., Columbia, 1963; M.U.S., Yale, 1968; Ph.D., California (Berkeley), 1972. Member, American Institute of Planners; Connecticut Bar Association; National Association of Housing and Re-development Officials; Housing Committee, Community Board 9 of Manhattan.

Robert Marino *Assistant Professor of Architecture*

B.E., Stevens Institute of Technology, 1971; M.Arch., Princeton, 1982. Registered professional engineer, New Jersey. Registered architect, New Jersey and New York.

Frank Gerard Matero *Assistant Professor of Historic Preservation; Director, Center for Preservation Research*

B.A., State University of New York (Stony Brook), 1975; M.S., Columbia, 1978. Member,Conservation Center, the Institute of Fine Arts, New York University, 1981–1984. Associate, American Institute for Conservation.

John M. McCormick *Senior Lecturer in Architecture*

B.S., Villanova, 1956; M.S., Columbia, 1957; Eng.Sc.D., 1961. Member, American Society of Civil Engineers; Sigma Xi. Registered professional engineer.

Mary McLeod *Associate Professor of Architecture*

B.A., Princeton, 1972; M.Arch., 1975; M.A., 1976; Ph.D., 1985. Social Science Research Council Fellow, France, 1977; Fulbright/Hayes, France, 1977.

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B.A., New York University, 1968; M.Arch., Columbia, 1972. Progressive Architecture Award, 1974, Office of Lower Manhattan Development; National Endowment for the Arts Design Project Fellowship, 1979; Charles H. Revson Fellow, Columbia, 1984–1985. Member, American Institute of Architects. Registered architect. N.C.A.R.B. certificate.

José Oubrerie *Associate Professor of Architecture*

Ecole Nationale Superieure des Beaux-Arts, Section Architecture. Assistant of Le Corbusier, 1958–1965. Board member of Fondation Le Corbusier, Paris. Awarded Programme Architecture Nouvelle, Paris, 1970; Biennale of Buenos Aires, 1985. Registered architect, France.

Richard A. Plunz *Professor of Architecture*

B.S., Rensselaer Polytechnic Institute, 1965; B.Arch., 1966; M.Arch., 1967.

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Engineer-Architect, Polytechnical University of Prague, 1938; M.S., Columbia, 1941. Fellow, American Institute of Architects; Associate, National Academy of Design. 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.

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Gwendolyn Wright *Associate Professor of Architecture, Planning, and Preservation*

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.

Other Officers of Instruction

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Geoffrey Freeman *Adjunct Assistant Professor of Architecture*
Dipl.Arch., Canterbury (England), 1962; M.Arch.U.D., Harvard, 1965. Associate of A.R.I.B.A. National Endowment for the Arts Design Fellowship, 1975.

Meyer S. Frucher *Adjunct Associate Professor of Urban Planning*
B.S., Columbia, 1972; M.P.A., Harvard, 1974. Director, Governor's Office of Employee Relations, State of New York; President and Chief Executive Officer, Battery Park City Authority.

Frances Gale *Adjunct Assistant Professor of Historic Preservation*
B.A., State University of New York (Saratoga Springs), 1977; M.S., Columbia, 1982. Associate Director, The Center for Preservation Research.

James Gainfort *Adjunct Assistant Professor of Architecture*
B.A., Dartmouth, 1969; B.Arch., Pratt Institute, 1979. Member, A.I.A.; C.S.I. Registered architect.

James Garrison *Adjunct Assistant Professor of Architecture*
B.Arch., Syracuse, 1977. Registered architect.

Kenneth S. Halpern *Adjunct Associate Professor of Urban Planning*
B.Arch., Minnesota, 1967; M.Arch., Harvard, 1970. Director, Manhattan Office, Department of City Planning. Registered architect.

John A. James *Adjunct Associate Professor of Architecture*
B.S., College of the City of New York, 1960; M.Arch., Harvard, 1971.

Robert Sherman Kahn *Adjunct Assistant Professor of Architecture*
B.A., Washington (St. Louis), 1977; M.Arch., Yale, 1980. Fellow, American Academy in Rome.

Ann Kaufman *Adjunct Assistant Professor of Architecture*
B.A., Wesleyan, 1976; M.Arch., Columbia, 1981.

Edgar Kaufmann, Jr. *Adjunct Professor of Art History and Architecture*
D.F.A., Allegheny, 1963. Apprenticed to Frank Lloyd Wright, 1934–1935. Director, Department of Industrial Design, Museum of Modern Art. Honorary member, American Institute of Architects. Vice president, International Council of Societies of Industrial Design.

Antonio P. Latini *Adjunct Assistant Professor of Architecture*
Arch./Urban Planning Doctorate, Rome "La Sapienza," 1983; Scuola di Specializzazione in Restauro Rome, attended, 1984; M.S., Columbia, 1985. Fulbright, 1984. Licensed architect, Italy.

Charles S. Laven *Adjunct Associate Professor of Urban Planning*
B.S., Massachusetts Institute of Technology, 1973. Loeb Fellow, Harvard, 1981.

Nellie Longsworth *Adjunct Associate Professor of Historic Preservation*
B.A., Smith, 1955. LL.D.(hon.), Goucher, 1983. President, Preservation Action.

Anton Martinez *Adjunct Assistant Professor of Architecture*
B.A., New York Institute of Technology, 1972. Registered architect.

Edward Mills *Adjunct Assistant Professor of Architecture*
B.Arch., North Carolina State, 1966; M.Arch., Harvard, 1977. Awards: First Progressive Architecture, 1978; New York State American Institute of Architects, 1980, 1982; New York City A.I.A., 1983. Member, Architectural League; American Institute of Architects. Registered architect.

Norman M. Mintz *Adjunct Assistant Professor of Historic Preservation*
B.I.D., Pratt Institute, 1963; M.S., Columbia, 1974. Trustee, Preservation League of New York State, 1982–1984; Board of Directors, Preservation Action, 1977–1980. Member, National Trust for Historic Preservation; Society of Commercial Archaeology.

Taeg Yoshinobu Nishimoto *Adjunct Assistant Professor of Architecture*
B.Arch., Waseda (Tokyo), 1978; M.Arch., Cornell, 1985. Registered architect, Japan.

Joan Ockman *Adjunct Assistant Professor of Architecture*
B.A., Radcliffe, 1974; B.Arch., Cooper Union, 1980. Fellow, Institute for Architecture and Urban Studies, 1981–1982.

Richard Olcott *Adjunct Assistant Professor of Architecture*
B.Arch., Cornell, 1979. Member, American Institute of Architects. Registered architect.

Lauren Otis *Adjunct Associate Professor of Urban Design*
B.A., Harvard, 1952; M.Arch., 1955. Registered architect. Deputy Director of the Manhattan Office of City Planning.

William T. Parker, Jr. *Adjunct Associate Professor of Urban Planning*
B.S., Cincinnati, 1970; M.S., Columbia, 1976. Member, American Institute of Architects. Registered architect. N.C.A.R.B. certificate. Director, Center for Health Facilities Research, Trenton, New Jersey.

Charles Platt *Adjunct Professor of Historic Preservation*
B.A., Harvard, 1954; M.Arch., 1960. Member, American Institute of Architects. Commissioner, New York City Landmarks Preservation Commission, 1979–1984. Registered architect. N.C.A.R.B. certificate.

Robert Prouse *Adjunct Assistant Professor of Architecture*
B.A., Michigan, 1970; M.Arch., Colorado, 1977. Member, International Association of Lighting Designers; Illuminating Engineering Society.

Theodore H. M. Prudon *Adjunct Associate Professor of Historic Preservation*
M.A., Delft University of Technology, 1969; M.S., Columbia, 1972; Ph.D., 1980. William F. Kinne Fellows Traveling Fellow, 1972. Member, Royal Dutch Society of Architects.

Nicholas Quennell *Adjunct Associate Professor of Architecture*
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, Pennsylvania, the United Kingdom. Registered landscape architect, New York, Massachusetts, Connecticut. N.C.A.R.B. certificate. C.L.A.R.B. certificate.

Richard Rose *Adjunct Assistant Professor of Architecture*
B.Arch., Illinois, 1969; M.Arch., Toronto, 1979. Registered architect, New York and Wisconsin. N.C.A.R.B. certificate.

Eugene A. Santomasso *Adjunct Assistant Professor of Architecture*
B.A., Yale, 1960; M.A., Columbia, 1965, Ph.D., 1973.

Paul D. Selver *Adjunct Associate Professor of Urban Planning*
B.A., Harvard, 1969; J.D., 1972. Board of Directors, Manhattan Bowery Corporation; Editorial Board, *Metropolis Magazine;* partner, Tufo and Zuccotti. Member, Bar Association of the City of New York.

Luis Sierra *Adjunct Assistant Professor of Urban Planning*
B.Env.Design, North Carolina State, 1974; M.S., Columbia, 1979; Ph.D., 1983.

Robert Silman *Adjunct Associate Professor of Architecture*
B.A., Cornell, 1956; B.C.E., New York University, 1960; M.C.E., 1963. Fellow, Institute for Architecture and Urban Studies; Vice President, Architectural League of New York. Member, American Society of Civil Engineers. Professional engineer.

Julie L. Sloan *Adjunct Assistant Professor of Historic Preservation*
B.A., New York University, 1980; M.S., Columbia, 1982. Member, American Technical Committee, Corpus Vitrearum.

A. Eugene Sparling *Adjunct Assistant Professor of Architecture*
B.A., Washington (Seattle), 1977; M.Arch., Columbia, 1980.

Kevin L. Stayton *Adjunct Assistant Professor of Historic Preservation*
B.A., Ohio State, 1974; M.A., Yale, 1976; M.Phil., 1979. Assistant Curator of Decorative Arts, The Brooklyn Museum.

Meredith H. Sykes *Adjunct Associate Professor of Historic Preservation*
B.A., New York University, 1962; M.A., Columbia, 1964. Director, Urban Cultural Resources Survey, New York City Landmarks Preservation Commission; Associate Director, New York/Paris Program.

Christos Tountas *Adjunct Assistant Professor of Architecture*
B.A., Harvard, 1968; M.S., Columbia, 1971; M.Phil., 1976.

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

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), 1961. Member, Royal Institute of British Architects. Director, Education and Technical Services, Heritage Canada.

Norman R. Weiss *Adjunct Associate Professor of Historic Preservation; Associate Director, the Center for Preservation Research*
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.

Tod Williams *Adjunct Professor of Architecture*
B.A., Princeton, 1965; M.F.A., 1967. Fellow, American Academy in Rome. Registered architect.

Giuseppe Zambonini *Adjunct Associate Professor of Architecture*
Dottore in Architettura, I.U.A.V., Venice, 1971.

Administrative Officers

James Stewart Polshek *Dean of the Faculty of Architecture, Planning, and Preservation; Special Adviser to the President of the University for Physical Development and Planning*

Richard L. Schaffer *Vice Dean; Chairman of the Division of Urban Planning and Historic Preservation*

Loes Schiller *Associate Dean for Admissions, Financial Aid, and Student Affairs*

Kenneth Frampton *Chairman of the Division of Architecture*

Ann ffolliott *Assistant Director for Administration, Temple Hoyne Buell Center for the Study of American Architecture*

Vivienne Ashman *Business Manager*

David Hinkle *Assistant to the Dean*

Isabelle Vita Williams *Administrative Assistant, Admissions and Student Affairs*

Michele Kaplan *Administrative Assistant, Architecture Division*

Karen Krane *Administrative Assistant, Urban Planning and Real Estate*

Shirley Driks *Administrative Assistant, Historic Preservation*

Avery Library

Angela Giral *Avery Librarian*

William P. O'Malley *Reference Librarian*

Herbert Mitchell *Bibliographer and Reference Librarian*

Kathe Chipman *Head, Access and Support Services*

Katherine Chibnik *City Planning and Housing Librarian*

Roberta Blitz *Fine Arts Librarian*

Janet Parks *Drawings Curator*

James Kopp *General Editor, Avery Librarian*

Ann Bevilalqua *Indexer, Reference Librarian*

Edward Goodman *Indexer, Reference Librarian*

Virginia Kerr *Indexer, Reference Librarian*

Janice Woo *Indexer, Reference Librarian*

Emeriti and Retired Officers

James Marston Fitch *Professor Emeritus of Architecture*

Percival Goodman *Professor Emeritus of Architecture*

Edgar Kaufmann, Jr. *Professor Emeritus of Architecture*

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*

Participating Visitors to the Graduate School of Architecture, Planning, and Preservation

The following visitors have participated in seminars, reviews, or lectures held at the Graduate School of Architecture, Planning, and Preservation.

Diana Agrest
Anthony Ames
Diana Balmori
Jonathan Barnett
Emilio Battisti
J. Max Bond
Mario Botta
Denise Scott Brown
Frank Brown
Neave Brown
Amanda Burden
Frances Campani
Mario Campi
Giorgio Cavaglieri
Lo-Yi Chan
Melvin Charney
Pietro Cicognani
Carol Clark
Alan Colquhoun
Galen Cranz
Maurice Culot
Douglas Darden
Neil Denari
Michael Dennis
Maurizio DeVita
Fernando Domeyko-Perez
Robin Evans
Ulrich Franzen
Marco Frascari
Jim Freed
Mildred Friedman
Meyer Frucher
William H. Gass
Robert Geddes
Leslie Gill
Peter Gluck
Allen Greenberg
Charles Gwathmey
N. John Habraken
Zaha Hadid
David Handlin
Gisue Hariri
Lori Hawkinson
Dolores Hayden
Paola Iacucci
John Jacobus
Ann Kaufman
Edgar Kaufmann, Jr.
Michael Kirkland
Herbert E. Kramel
Kunio Kudo
Thomas Kuslawski
Jeremy Lang
Alessandra Latour
Karen van Lengen
Elliott Littmann
Robert Livesey
Fumihiko Maki
Robert Maxwell
Barton Meyers
Robin Middleton
Ed Mills
Rafael Moneo
Clark Neuringer
Guy Nordenson
Gene Norman
James O'Gorman
Richard Olcott
Michael Palladino
William Pedersen
Paolo Portoghesi
Alexander Purves
George Ranalli
Andy Reicher
Donna Robertson
Kevin Roche
Daniel Rowen
Paul Rudolph
Andrew Saint
Patricia Sapinsley
Tom Schumacher
Vincent Scully
Werner Seligman
Lynda Simmons
Bob Slutzky
Daniel Solomon
Michael Sorkin
Ugo Stille
Wiebke Theodore
Fred Thompson
Bernard Tschumi
Billie Tsien
Tony Vacchione
Carlos Vallhonrat
Anthony Vidler
Bart Voorsanger
Val Warke
Sam Bass Warner, Jr.
Martin Weaver
Richard Wesley
Steven Winter
Harry Wolf
Michael Wurmfeld
John Zukowsky

Division of Architecture

CHAIRMAN: Mr. Kenneth Frampton

The Division of Architecture offers three programs of study: the three-year professionally accredited program in architecture leading to the Master of Architecture degree, the first professional degree, and two one-year programs leading to the Master of Science degree. The two M.S. degree programs are intended to serve students who have a previous professional degree and some professional experience.

—The *M.S. Degree in Architecture and Building Design Program* offers an opportunity to explore specific theories of design as well as appropriate responses to complex architectural situations.

—The *M.S. Degree in Architecture and Urban Design Program* uses New York City as a focus for the exploration of architecture generated in response to an evolving urban context.

Each of the three programs is organized independently with separate studios and admissions criteria. However, the faculty members and courses of the division are in most cases shared by the three programs.

Being part of a great university located in a major metropolis has determined much of what is unique about the Division of Architecture. 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, scholars—in New York. Thus the division is able to expose student architects to architecture as a complex cultural endeavor, about which there can be many attitudes.

At the same time that it explores the richness of architectural culture, the division 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 and methods, and 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 division 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.

Master of Architecture 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 principles in relation to broader historic and contemporary issues in a changing culture. 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 attitudes. The Faculty believes that a variety of pedagogical approaches delivered within 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 graduate-level interests 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—programs that respond to changing student attitudes and evolving societal 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 Comprehensive 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 conceptual analysis of the cultural role of design activity in general. The Technology Sequence and Methods/Practice Sequence prepare the student to understand the structural, constructional, and management consequences of design decisions. The Visual Studies Sequence provides specialized investigation that complements the normal studio work. The Elective Sequence, which permits the student to pursue individual interests in architectural and environmental topics, may become 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 have 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 (S), History/Theory (H/T), Technology (T), Visual Studies (VS), Methods/Practice (M/P), 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(S)

A. S 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. The following course offered in the Summer Session fulfills the requirement:

Architecture S1020R Architectural representation: introduction 3 pts

B. S Requirements for M.Arch. Program

Six sequential studios starting in autumn term, first year:

A4001	Comprehensive studio I	7 pts
A4002	Comprehensive studio II	7 pts
A4003	Comprehensive studio III	7 pts
A4004	Comprehensive studio IV	7 pts
A4005	Comprehensive studio V	7 pts
A4006	Comprehensive studio VI	7 pts

Total: 42 pts

C. S Distributional Requirements for M.Arch. Program

None

II. HISTORY/THEORY COURSE SEQUENCE (H/T)

A. H/T Prerequisite for Entry into M.Arch. Program

Any 3-point survey course in the history of architecture but with strong recommendation for a course in either the evolution of classical architecture from the Renaissance to the modern period or modern architecture.

The following course is offered in the Summer Session:

Art History S3660D Modern architecture 3 pts

B. H/T Requirements for M.Arch. Program

Three sequential H/T courses:

A4348	Thresholds in the history of Western architecture I	3 pts
A4349	Thresholds in the history of Western architecture II	3 pts
A4400	Formal principles of architectural design	3 pts

Total: 9 pts

C. H/T Distributional Requirements for M.Arch. Program

Four H/T courses Total: 12 pts

In the course schedule each term those courses that fulfill the distributional requirement will be identified. Below is a list of H/T courses in this category offered in the past; most of them are expected to be offered on a one- or two-year rotating basis.

A4330	Urban history I	3 pts
A4331	Urban history II	3 pts
A4335	Urban precedents: the street	3 pts
A4341	American architecture: 1876–1976	3 pts
A4344	Traditional Japanese architecture	3 pts
A4351	Architecture of Islam	3 pts
A4353	Le Corbusier	3 pts
A4355	Frank Lloyd Wright	3 pts
A4357	Renaissance seminar	3 pts
A4358	Renaissance architecture and urbanism	3 pts
A4360	American vernacular	3 pts
A4366	Historical evolution of housing in New York City	3 pts
A4370	Italian rationalism	3 pts
A4371	Paris: the evolution of housing in New York City	3 pts
A4372	Skyscrapers: art, technology, and commerce	3 pts
A4374	Contemporary theory and criticism of architecture	3 pts
A4376	Theory and practice of historicism in architecture	3 pts
A4377	London, metropolis of the 19th century: architecture and urban development	3 pts
A4378	History and theory of architectural preservation in Europe: 1780–1900	3 pts
A4381	Architecture and the printed media: between theory and criticism	3 pts
A4385	Paris, Vienna, Berlin: architecture 1870–1920	3 pts
A4387	Nineteenth-century English and French architecture	3 pts
A4410	Design attitudes in European and American urbanism: 1750–1930	3 pts
A4420	Comparative critical analysis of built form	3 pts
A4421	Twentieth-century architecture	3 pts
A4430	Figures and forms of meaning in architecture	3 pts
A4480	Elements of landscape architecture	3 pts

H/T Distributional requirements may also be fulfilled with graduate courses (*4000* level and above) in the Art History Department. Students should check the *Schedule of Classes,* issued by the Office of Student Information Services each term, for courses that are open to them.

III. TECHNOLOGY COURSE SEQUENCE (T)

A. T Requirements for M.Arch. Program

Seven sequential T-required courses:

A4111	Statics and strength of structures	3 pts
A4123	Steel and timber technology	3 pts
A4125	Reinforced concrete technology	3 pts
A4220	Architecture and technology I	3 pts
A4221	Architecture and technology II	3 pts
A4610	Architecture and technology III	3 pts
A4611	Architecture and technology IV	3 pts
		Total: 21 pts

B. T Distributional Requirements for M.Arch. Program
Two T courses out of four offered: Total: 6 pts (minimum)

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 (VS)

VS Requirement for M.Arch. Program
One of two courses offered:

A4509	Architectural drawing	3 pts
A4503	Freehand drawing: the figure in architecture	3 pts

V. METHODS/PRACTICE COURSE SEQUENCE (M/P)

M/P Distributional Requirements for M.Arch. Program
One M/P course out of six offered:

A4240-A4241	Community design workshop I and II	3 pts
A4248	Project management workshop	3 pts
A4530	Computers in architecture	3 pts
A4535	Computer graphics	3 pts
A4538	The development process	3 pts

VI. ELECTIVES

The following are elective courses offered by the Division of Architecture and the Division of Urban Planning and Historic Preservation that may be applied toward completion of the M.Arch. degree:

A. Division of Architecture

History/Theory

A4380	Architectural field study	3 pts
A6900-A6901	Research I or II	2 or 3 pts
A8790	Research problems	2 or 3 pts

Methods/Practice

A4405	Principles of urban design	3 pts
A4535	Computer graphics	3 pts
A4539	Advanced development and finance	3 pts
A4545	Economics in urban design	3 pts
A4624	Economic infrastructure of building as an activity	3 pts

B. Division of Urban Planning and Historic Preservation

Pl A4112	Physical structure of cities	3 pts
Pl A4304	Introduction to housing	3 pts
Pl A4312	Real estate finance I: capital markets	3 pts
Pl A4510	Planning in socialist nations	3 pts
Pl A6001	Theory and practice of urban planning	3 pts
A6310	History of landscape architecture	3 pts

A6734	Classical language and literature of architecture	3 pts
A6737	Conservation of 20th-century structures	3 pts
A6754	Special problems in preservation practice	3 pts
A6758	Downtown revitalization	3 pts
A6759	Politics of preservation	3 pts
A6760	History of North American building technology	3 pts
A6761	Conservation seminar: masonry	3 pts
A6762	Building pathology	3 pts
A6763	Advanced conservation science	3 pts
A6764	Conservation science	3 pts
A6767	Preservation planning	3 pts
A6770	Issues of urban preservation	3 pts
A6780	Preservation trade techniques	3 pts
A6862	Legal structure of the urban built environment	3 pts

C. Electives in Other Schools and Departments
Students may choose courses from other schools and departments of the University for M.Arch. elective credit. A list of course recommendations is provided by the Division of Architecture at the beginning of registration for each term.

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 bulletin.

Students enrolled in the M.Arch. Program may count only those elective courses toward the M.Arch. degree that are considered to be directly related to architectural theory and practice. All courses that have not been preapproved for elective credit may be credited only with permission of the chairperson. Undergraduate-level courses are credited only with sufficient evidence that the subject matter was unavailable to the student as a graduate course.

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. Exceptions are granted by the chairperson only through petition for a leave of absence. 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

First Year

AUTUMN TERM		*Points*
A4001	Comprehensive studio I	7
A4220	Architecture and technology I	3
A4330	Urban history I	3
A4348	Thresholds in the history of Western architecture I	3
A4400	Formal principles of architectural design	3
		19

SPRING TERM		*Points*
A4002	Comprehensive studio II	7
A4111	Statics and strengths of structures	3
A4221	Architecture and technology II	3
A4349	Thresholds in the history of Western architecture II	3
A4503	Freehand drawing	3
or		
A4509	Architectural drawing (3 pts)	
		19

Year Total: 38

Second Year

AUTUMN TERM		*Points*
A4003	Comprehensive studio III	7
A4123	Steel and timber technology	3
A4610	Architecture and technology III	3
	H or T distribution requirement (1)	3
	H or T distribution requirement (2)	3
		19

SPRING TERM		*Points*
A4004	Comprehensive studio IV	7
A4125	Reinforced concrete technology	3
A4611	Architecture and technology IV	3
	H or T distribution requirement (3)	3
	H or T distribution requirement (4)	3
		19

Year Total: 38

Third Year

AUTUMN TERM		*Points*
A4005	Comprehensive studio V	7
	T distribution requirement (1)	3
	Elective or M/P distribution requirement	3
	H or T distribution requirement	3
		16

SPRING TERM		*Points*
A4006	Comprehensive studio VI	7
	T distribution requirement (2)	3
	M/P distribution requirement (1)	3
	Elective (4)	3
		16

Year Total: 32

Total for M.Arch. Degree: 108 minimum

Master of Science Degree in Architecture and Building Design

DIRECTOR: Mr. William J. MacDonald

Objectives and Content of the Program

The M.S. Degree in Architecture and Building Design Program is a one-year program carried out under the supervision and instruction of the director with either selected Graduate School of Architecture, Planning, and Preservation faculty members or a visiting professor and practicing architect of international stature.

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 program operates on the premise that responsible design decisions need to be based on a thorough understanding of the relationships between the built environment and cultural values. These decisions result in design strategies derived from extensive typological and morphological analyses related to both physical and cultural contexts. Special attention is given to the determination of an appropriate building typology suitable for the accommodation of a number of specific institutions and the procedures according to which a consistent architectural language may be developed for the representation of such institutions. The research and design work produced in the studios draws to a large extent on the unique potential of New York City to act as a "design laboratory."

The Organization of the Program

The program is viewed as a framework in which both academic and professional concerns are explored. The projects offered in the studios are of a scale such that both urban and architectural issues are addressed.

The centerpiece of the program is the design studio. During the year a separate studio topic is introduced in each of the two terms of the program. The design studio of 6 points and a supplementary studio seminar of 3 points are both required. The advanced theory seminar given by Professors Kenneth Frampton and Beatriz Colomina enables students to become familiar with contemporary

trends in architectural theory and practice that provide a theoretical grounding for current architectural practice. In addition, two other electives (one per term) must be taken from the list of School course offerings designated as appropriate by the Director. There are also two additional electives that each student chooses from other University departments or from other courses at the School.

Admissions Criteria

A Bachelor of Architecture or a Master of Architecture degree is required.

Program Requirements (36 points)

Autumn Term

A6854	Building design studio I and Studio seminar course	9 pts
A6864	Advanced theory seminar I	3 pts
	Limited elective course (1)*	3 pts
	Open elective course (1)	3 pts
		18 pts

Spring Term

A6855	Building design studio II and Studio seminar course	9 pts
A6865	Advanced theory seminar II	3 pts
	Limited elective course (1)*	3 pts
	Open elective course (1)	3 pts
		18 pts

*The limited elective courses (see above) are selected from current offerings and are recommended for M.S. degree in architecture and building design students on a semester basis.

Master of Science Degree in Architecture and Urban Design

DIRECTOR: Mr. Stanton Eckstut

The Program

The Urban Design Program is a one-year program offering a Master of Science degree in architecture and urban design. The goal of the program is that architects again become active and effective participants in designing cities. The architect is introduced to a variety of scales beyond the individual building and to new disciplines and interests, providing mechanisms to carry out design proposals with the broadest support. The University has many objectives in offering this program. They include the development and elaboration of a consistent set of proposals and guidelines for the practice of urban design, the formulation of a core of urban design professionals for both public and private sectors, and the rediscovery, as well as the redefinition, of the historical attitudes and skills of architects in designing cities.

Policy Statement

It is not necessary to consider urban design as a profession distinct from architecture. It is, however, necessary to define it according to the following policy statement:

1. The scope of urban design is any action that shapes the physical forms of cities. That action may be the designing of a building, a piece of legislation, or a budget allocation.
2. The purpose of urban design is to maximize public benefits and minimize the adverse impacts imposed by those benefits.
3. The commitment of urban design is to a "sense of place." In addition to the physical character, place is determined by the operating social, economic, political, and natural systems.
4. The process of urban design is comprehensive. It requires the inclusion of relatively large land areas and the participation of many professional disciplines and active community support to suggest actions that reinforce rather than disrupt existing patterns.
5. The result of urban design is that the most desirable physical solution typically generates an acceptable political response.
6. In conclusion, urban design is dedicated to the public, through the means of a highly articulated and compatible architecture.

The above set of policies recognizes the importance of government regulation in shaping the physical environment. Either by incentive legislation, environmental review, or capital budget construction, the process of building cities has become irretrievably linked with government action. Legitimate urban design is primarily accountable to the public at large rather than to private interests.

Studios

The program, as a whole, is biased toward the creation of physical situations that positively affect and influence growth and change. The design studio is the primary focus of the Urban Design Program. Students are given the opportunity to explore diverse issues and to become aware of the impact of different determinants on the form of the city.

The autumn term studio is a series of successive problems, each at a different scale of design study. The different designs reveal that physical form is not an accident and is usually the result of the combination of natural features and governmental policies. The students improve their understanding of the ways in which a city functions. They become better acquainted with the fairly regular patterns and forms of an urban area. They also expand their vocabulary for describing the physical parts and systems of a city. Most importantly, the students propose designs based on their interpretation of the particular qualities and characteristics of places and districts in the city.

The spring term studio involves a design and development study for a major

urban design problem in New York City. Projects are selected to complement ongoing activities and to explore opportunities that would otherwise not come to light. The spring term studio includes political, economic, and implementation considerations. The physical design, however, is still the primary focus.

In the design studios larger plans and purposes that involve more than a single building are created and advanced. Often the outside forces of context, place, and street are more important form determinants than the functions inside the building. Major concerns of the design studios are coherence and purposeful form. Compatibility is sought between old and new, small and large, pedestrians and vehicles. The studios offer the designer opportunities to discover relationships that exist among the normally disparate parts of a city and to formulate new relationships on the basis of a larger and more public view.

Support Courses

The urban designer does not work alone. Consequently, exposure to other disciplines is fundamental to the program. Courses in law, urban policy and management, real estate, economics, and politics are included to intensify the designer's sensitivity to their specific needs and concerns. The program is committed to improving the student's ability to achieve his or her designs. In order to integrate the curriculum and relate as much as possible to the studio, in the support courses the following issues are stressed:

1. *Land use and physical development* including density, design controls, infrastructure systems, and open-space networks.
2. *Large-scale development* including phasing, timing, budgeting, and governmental coordination.
3. *Circulation systems* including pedestrian, automobile, truck, and transit.
4. *Implementation strategies* including property acquisition techniques, incentive zoning, capital sources, taxation, and private finance.
5. *Public benefits*—the overall objective of any urban design effort.

Program Requirements

Autumn Term

A6850	Urban design studio I	9 pts
A4405	Principles of urban design	3 pts
A4538	The development process	3 pts
	Elective	3 pts
		18 pts

Spring Term

A6851	Urban design studio II	9 pts
A6870	Implementation of urban design	3 pts
A6862	Legal structure of the urban built environment	3 pts
	Elective	3 pts
		18 pts

Division of Urban Planning and Historic Preservation

CHAIRMAN: Mr. Richard L. Schaffer

The Division of Urban Planning and Historic Preservation offers three separate master's degrees: a two-year Master of Science degree in historic preservation, a two-year Master of Science degree in urban planning, and a one-year Master of Science degree in real estate development.

Master of Science Degree in Historic Preservation

DIRECTOR: Mr. Michael Kwartler

The master's program in historic preservation is the oldest and largest of its kind in the United States. It provides specialized training for those who wish to be professionally active in preservation as architects, historians, conservators, and planners. It addresses concerns that have come to be recognized as essential to community well-being. These concerns relate to the necessary retention of significant traditional elements of the built environment and reflect an underlying belief in the validity of the past.

The field of historic preservation encompasses professional activity at many levels. In part the work is curatorial, for it deals with the identification and protection of significant elements of both the built and natural environment. 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 involves not only the physical act, but also the legal and economic means to support that act. Work in the field of preservation deals also with the making of changes that are responsive to surviving elements of the past. These changes include special conservation treatments, the adoption of modern services, the adaptive use of historic fabric, and the design of new buildings and building complexes appropriate to their historic context.

The Columbia program offers four sectors that relate to the expanding field of preservation: design, history, conservation, and planning. Design deals in large part with the making of responsible changes, history with the accurate identification and understanding of significant components of the past, conservation with the analysis and stabilization of specific physical components of that past, and planning with contextual analysis of the built environment and the identification of appropriate legal and financial procedures for its protection. In practice these sectors overlap, and the Columbia program allows for that overlap by providing shared courses in the philosophy and practice of preservation and by interrelating academic work. This ensures the learning of a common language and facilitates professional cooperation.

Course work: 60 points are required. During the first year, all degree candidates study methods of documentation, participate in discussion groups, attend guest

lectures related to the theory of preservation, and contribute jointly to at least one studio project. Before beginning their second term, students are expected to select the sector that represents their area of major emphasis. Submission of a thesis topic is a requirement for registration in the autumn of the second year. Research for the thesis in the autumn term of the second year culminates with a report to the thesis adviser; the final results of the work are presented in the spring term.

The remainder of the course 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 such New York City institutions as the Metropolitan Museum of Art, the Landmarks Preservation Commission, the Temple Hoyne Buell Center for the Study of American Architecture, and the Center for Preservation Research. 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 such organizations as the Association for Preservation Technology, the Society of Architectural Historians, and the National Trust for Historic Preservation. 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 chairman of the division and are recognized as completed upon receipt of a letter of evaluation from the internship supervisor sent to the chairman of the department 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 course;

—for students in the design sector, a professional degree in architecture or a related discipline, such as landscape architecture or interior design;

—for students in the conservation sector, at least one undergraduate course in chemistry, physics, biology, or earth science.

Courses Offered in Historic Preservation

(Note: not every course is offered every year)

THEORY AND PRACTICE

A6740	Theory of historic preservation	3 pts
A6745	Documentation I	3 pts
A6755	Documentation II	3 pts
A4210	Basic principles of traditional construction	3 pts
A6710	Building systems integration	3 pts
A6754	Special problems in preservation practice	3 pts
A6751	Thesis I	3 pts
A6753	Thesis II	3 pts

DESIGN

A4510	Design principles for preservation	4 pts
A6749	Historic preservation studio I	4 pts
A6750	Historic preservation studio II	4 pts
A6774	Historic preservation studio III	4 pts
A6775	Historic preservation studio IV	4 pts

HISTORY

A6730	American architecture before 1876	3 pts
A6731	American architecture after 1876	3 pts
A6766	American architecture colloquium	3 pts
A6732	American decorative arts	3 pts
A4372	Skyscrapers: art, technology, and commerce	3 pts
A6310	History of landscape architecture	3 pts
A6723	Architecture of the American acropolis	3 pts
A6724	Arcades, markets, and malls: history of retail architecture	3 pts
A6760	History of North American building technology	3 pts
A6734	Classical language and literature of architecture	3 pts
A6772	Vernacular architecture	3 pts
A8790	Research problems	2 or 3 pts

CONSERVATION

A6764	Conservation science	3 pts
A6763	Advanced conservation science	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
A6738	Investigative techniques for historic structures	3 pts
A6737	Conservation of 20th-century structures	3 pts
A6762	Building pathology	3 pts
A6780	Preservation trade techniques	3 pts
A8790	Research problems	2 or 3 pts

PLANNING

A6767	Preservation planning	3 pts
A6759	Politics of preservation	3 pts
A6770	Issues of urban preservation	3 pts
A6862	The legal structure of the urban built environment	3 pts
A4538	The development process	3 pts
A6758	Downtown revitalization	3 pts
A8790	Research problems	2 or 3 pts

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 of historic preservation	3 pts
A6745	Documentation I	3 pts
A6755	Documentation II	3 pts
A6730	American architecture before 1876	3 pts
A6731	American architecture after 1876	3 pts
Pl 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 *A6749—Historic preservation studio I*)	3 or 4 pts
A6753	Thesis II (students in design sector substitute *A6775—Historic preservation studio IV*)	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 *Thesis I*. Submission of all materials is required by the end of the autumn term for completion of *Thesis I*. Mid-term 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 *Studio IV* under the direction of a studio critic or thesis adviser.

Design Sector: Requirements

Prerequisite: a professional degree in architecture or related field.

Required:

A6710	Building systems integration	3 pts
A6774	Historic preservation studio III	4 pts

Sector electives (choose three courses):

A6762	Building pathology	3 pts
A6764	Conservation science	3 pts
A6734	Classical language and literature of architecture	3 pts
A6738	Investigative techniques for historic structures	3 pts
A6737	Conservation of 20th-century structures	3 pts
A6761	Conservation seminar: masonry	3 pts
A6754	Special problems in preservation practice	3 pts
A6767	Preservation planning	3 pts

Other electives: 8 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 architecture, decorative arts, urbanism, and related developments. In courses offered by other programs of the Graduate School of Architecture, Planning, and Preservation, 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
G8005	Colloquium on the history of architecture	3 pts

Sector electives (choose three courses):

A6732	American decorative arts	3 pts
A6310	History of landscape architecture	3 pts
A6760	History of North American building technology	3 pts
A6734	Classical language and literature of architecture	3 pts
A6772	Vernacular architecture	3 pts
A4372	Skyscrapers: art, technology, and commerce	3 pts
A6767	Preservation planning	3 pts

Other electives 11 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:

A6764	Conservation science	3 pts
A6763	Advanced conservation science	3 pts
A6738	Investigative techniques for historic structures	3 pts

Sector electives (choose two courses):

A6780	Preservation trade techniques	3 pts
A6762	Building pathology	3 pts
A6737	Conservation of 20th-century structures	3 pts
A6760	History of North American building technology	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

Other electives 11 pts

Planning Sector

The preservation planning sector combines two strategies. The first stresses the historical analysis, 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 A6001	Theory and practice of urban planning	3 pts
A6767	Preservation planning	3 pts
Pl A4208	Analytic methods A	3 pts
Pl A4206	Analytic methods B	3 pts

Sector electives (choose two courses):

A6862	The legal structure of the urban built environment	3 pts
A6770	Issues of urban preservation	3 pts
A6758	Downtown revitalization	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
Pl A4714	Legislating aesthetics	3 pts
Other electives		8 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 of the Graduate School of Architecture, Planning, and Preservation, 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.

Scholarships and Prizes

Scholarships available to students in this program include the Quester's Award for distinguished undergraduate work in architecture and the William Kinne Fellows Traveling Fellowships for postgraduate travel.

The Cleo and James Marston Fitch Student Prizes are awarded annually by the Preservation Alumni Inc. to the most promising students in the Historic Preservation Program at the end of their first year.

Joint Degree Programs

The Graduate School of Architecture, Planning, and Preservation offers the opportunity for certain qualified students to work toward two degrees simultaneously: the Master of Architecture and the Master of Science in historic preservation. 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. 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 both programs must be met. Students may apply to both programs before matriculation by checking both the M.Arch. and M.S.H.P. boxes on the application form, or they may apply to the Division of Architecture 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 the 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 enroll in *Thesis I* for the preparation of the thesis; they execute the thesis in *Studio IV*.

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 Graduate School of Architecture, Planning, and Preservation 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 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.

Pending approval by the University Senate, the Graduate School of Architecture, Planning, and Preservation proposes to offer a joint program leading to the degree of Master of Science in historic preservation and the degree of Master of Science in urban planning. The proposed program will require students to enroll for 90 points of credit, which must be earned in six terms in residence in the Graduate School of Architecture, Planning, and Preservation. Contact the Admissions Office for information on the status of this new program.

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.

Master of Science Degree in Real Estate Development

The Division of Urban Planning and Historic Preservation 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 public and private sector real estate development, with particular emphasis on the skills and sensitivities necessary to develop real estate successfully in our nation's major urban areas.

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 over the summer, have juries in September, 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

PI A4312	Real estate finance I: capital markets	3 pts
PI A4538	The development process: concept to completion	3 pts
PI A6352	Market analysis for development	3 pts
PI A6354	Political environment of development	3 pts
PI A6356	Construction technology and management	3 pts
PI A6769	History of the American city	3 pts

SPRING TERM

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

Real Estate Development Advisory Board

The following thirty-one distinguished individuals serve as an advisory board for the real estate development program and periodically deliver guest lectures:

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

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
Manager, Laventhol and Horwath

Jean Solomon
President, Solomon Equities, Inc.

Jerry I. Speyer
Managing Partner, Tishman Speyer Properties

Louise M. Sunshine
Executive Vice President, The Trump Organization

Lynda Simmons
President, Phipps Houses

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

Master of Science Degree in Urban Planning

Purpose

The primary purpose of the Urban Planning Program is the education of students so that they can contribute their knowledge, skills, and human understanding to improving the quality of life in urban society. Course work, field work, and research are means to this end. The aim of the program is to facilitate the joint efforts of students, faculty, and staff in achieving the goal of improving urban 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 spatial 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 faculty is committed to the vision of an improved city with expanded opportunity, social justice, and a better quality of life. The emphasis of the

program is the comprehensive planning and analysis of the built environments of the major urban regions of the world. The fundamental event in urban life today, and in the foreseeable future, is the dramatic spatial 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 complex, 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.

International activities concentrated in the city, including those at United Nations headquarters, provide further resources and focus for the division's program of planning for an increasingly interdependent world. As part of Columbia University, the breadth and quality of the offerings of the Urban Planning Program also go far beyond that which the program's size might otherwise indicate, since the program is able to draw upon the resources of the Graduate School of Arts and Sciences and of the other professional schools and educational and research facilities of the University.

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 Graduate School of Architecture, Planning, and Preservation, in conjunction with other schools 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.

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 Historic Preservation

Pending approval by the University Senate, the Graduate School of Architecture, Planning, and Preservation proposes to offer a joint program leading to the degree of Master of Science in historic preservation and the degree of Master of Science in urban planning. The proposed program will require students to enroll for 90 points of credit, which must be earned in six terms in residence in the Graduate School of Architecture, Planning, and Preservation. Contact the Admissions Office for information on the status of this new program.

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.

Supplemental Programs

Under the William F. Kinne Fellows Traveling Fellowship Program, available to students in the Graduate School of Architecture, Planning, and Preservation, a number of planning students are annually eligible to take part in study programs abroad. In order to expand their skills, students are also encouraged to accept employment in planning offices during their summer vacations. Community consultation is an integral part of the curriculum, and several such projects are continuously in operation.

Program Requirements

The Master of Science degree in urban planning is a 60-point two-year program. 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.

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

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

Term 2

PI A4206	Analytic methods B	3 pts
PI A6911	Planning studio	6 pts
PI A6217	Techniques of project evaluation	3 pts
	Sector specialization elective	3 pts

Term 3

PI A6850	Research design	3 pts
PI A4151	Foundations of urban economic analysis	3 pts
	Sector specialization elective	3 pts
	Elective courses (2)	6 pts

Term 4

PI A6918	Thesis workshop	6 pts
PI A6052	Planning law and administration	3 pts
	Elective courses (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 chairman of the Division of Urban Planning and Historic Preservation. The following five sectors are offered in the Urban Planning Program:

Developing Countries
Health and Human Services Planning
Housing
Physical Planning and Infrastructure Development
Urban Economic Development

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

DIRECTOR: Mr. Richard L. Schaffer

ASSOCIATE DIRECTORS: Ms. Ann Buttenwieser
Mr. Roy Strickland
Ms. Meredith Sykes

This special program for undergraduates enrolled in other universities is a junior year introduction to architecture, urban planning, and historic preservation held in New York and Paris. The Graduate School of Architecture, Planning, and Preservation, in conjunction with Columbia's Reid Hall Programs in Paris, offers a unique undergraduate curriculum in either architecture or in urban planning/historic preservation that introduces these fields to mature, intellectually capable students. A full year of academic credit is offered through a carefully constructed program of history, theory, and studio courses conducted in English. Students are given the academic preparation to enter high-quality graduate programs in the three disciplines.

During the autumn students live and study in New York and enjoy the resources of Columbia University and the Graduate School of Architecture, Planning, and Preservation. As part of Columbia University, the School offers access to athletic, computer, and other student facilities; public lectures; extracurricular activities; the Center for Preservation Research; the Buell Center for the Study of American Architecture; and Avery Library, the nation's leading architecture and planning research collection. Students spend the spring in Paris based at two locations: the program's studio in the Marais district near the Place des Vosges, and Reid Hall, Columbia's handsome academic complex in the Montparnasse district near the Luxembourg Gardens. Reid Hall contains classrooms, a library, a reading room, lecture halls, a lounge, and administrative offices.

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.

Architecture Option

Autumn Term: New York

A4000 Design studio. **5 pts**
Introductory studio: two- and three-dimensional compositional exercises; introduction to color; graphics exercises; brief architectural and urban design projects for sites in New York; field trips and analysis of the city's buildings and public spaces.

A4027 Architecture, planning, and preservation: New York. **5 pts**
A survey of past and present work in the three disciplines, including guest lecturers representing public and private efforts in New York's planning, design, and historic preservation; survey of New York's physical and social development; tours of significant projects; and exposure to public hearings and community board meetings.

A4110 Structures. **3 pts**
An introduction to the basic concepts of structural action by means of models, slides, and films. Both elementary and refined concepts are qualitatively considered without the use of mathematical tools. Special consideration to modern structural materials and to both classical and contemporary structural systems.

A6769 History of the American city. **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 emphasis on the ways in which physical form responded to or influenced social and political forces over time.

Spring Term: Paris

A4010 Design studio. **5 pts**
Architectural and urban design projects for sites in Paris; portfolio workshop.

A4025 Freehand drawing. **3 pts**
Drawings from nature and the architecture of Paris; exercises in light and shade, line and perspective drawing, and color.

A4029 Architecture, planning, and preservation: Paris. **5 pts**
Continuation of New York course with focus on Paris.

A4031 History of European cities. **3 pts**
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.

Urban Planning/Historic Preservation Option

Autumn Term: New York

A3051 Introduction to urban planning. **3 pts**
An introduction to the theory and practice of urban planning. Explorations of the history and tradition of planning practice in America, theoretical underpinnings that serve as the rationale for public planning activity, and selected contemporary public policy debates.

A4027 Architecture, planning, and preservation: New York. **5 pts**
For course description, see under Architecture Option, Autumn Term: New York

A4028 Historic preservation: reading the built environment of New York. **3 pts**
Through intensive, illustrated lectures and field trips examining the architecture, landscape, and urban infrastructure of the New York metropolitan area, students learn essential skills for above-ground archaeology—reading and placing in historical context the physical history that surrounds them.

A6769 History of the American city. **3 pts**
For course description, see under Architecture Option, Autumn Term: New York.

Elective

Satisfactory completion of any course in the Graduate School of Architecture, Planning, and Preservation for which the student is eligible will satisfy the elective requirement.

Spring Term: Paris

A4029 Architecture, planning, and preservation: Paris. **5 pts**
For course description, see under Architecture Option, Spring Term: Paris

A4030 Historic preservation: reading the built environment of Paris. **3 pts**
Through intensive, illustrated lectures and field trips in and around metropolitan Paris, students have a chance to apply (and further advance) above-ground archaeological skills learned in New York in order to decipher the evolution of the Parisian built environment.

A4031 History of European cities. **3 pts**
For course description, see under Architecture Option, Spring Term: Paris.

A4044 Seminar in comparative planning and preservation. **4 pts**
Comparison of the theory and practice of urban planning and historic preservation in New York and Paris. Presentations of final research projects by students.

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-A3122y*). 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.

Division of Architecture

Design Studio

The design program comprises approximately one-third of the total points required for graduation. It is continuously evaluated and modified in order to respond better to the dynamic nature of the practice of architecture. Short and long design problems, case studies, historical and technological analyses, and research projects are utilized where deemed appropriate.

The student-faculty ratio varies from 13 to 1 to 10 to 1. Team teaching is utilized during most of the first year. In the following two years a carefully worked-out system allows each student to study with at least six different critics on various problems that have in common a concern with fundamental design issues as these are defined by faculty and students.

Design reviewers include visiting architects, historians, and critics as well as faculty members from the Planning, Historic Preservation, and Urban Design Programs of the School.

The following faculty members teach in the design studios: Amy Anderson, Kenneth Frampton, Romaldo Giurgola, Marta Gutman, Thomas Hanrahan, Klaus Herdeg, Steven Holl, Ann Kalla, Robert Marino, Mary McLeod, José Oubrerie, Richard Plunz, James Stewart Polshek, David Grahame Shane, Robert Stern, Roy Strickland, Jim Tice, Susana Torre.

Architecture A4001 Comprehensive studio I 7 pts

Architecture A4002 Comprehensive studio II 7 pts

Architecture A4003 Comprehensive studio III 7 pts

Architecture A4004 Comprehensive studio IV 7 pts

Architecture A4005 Comprehensive studio V 7 pts

Architecture A4006 Comprehensive studio VI 7 pts

History/Theory

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 A4335 Urban precedents: the street. 3 pts
Mr. Shane.
An examination of the architecture and theory of the street and its role in the city. Lectures highlight historical case studies of specific streets, as well as more general theoretical issues of the city and building concerned. Student research is concentrated on the modern fate of the street, as well as an examination of related historical precedents.

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 A4344 Traditional Japanese architecture. 3 pts
Mr. Kudo.

This course is designed for examination of 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 re-experience 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 Thresholds in the history of Western architecture I. 3 pts
Ms. McLeod.

Examination of the transformations in architectural theory and design from about the middle of the 17th century to about halfway through the 19th century—the period, in Michael Foucault's conceptualization, that begins with the inauguration of the Classical age and terminates with the commencement of the Modern era, an epoch in which the pressures resulting from scientific, industrial, political, and social change forced architects and social thinkers to reformulate the basis of traditional theory and practice. Conventional theoretical canons and formal vocabularies, received from the Renaissance and 17th-century academies, were—in their conception of art as ideal, static, and socially detached—ill-suited to confront the immense changes in production, consumption, and political consciousness wrought during this period, in which the very categories by which to "think" architecture were being challenged; forms and types of buildings never previously recognized as "architectural" were introduced into practice.

Architecture A4349 Thresholds in the history of Western architecture II. 3 pts
Ms. Celik.

Continuation of *A4348;* examination of transformations in Western architecture from 1850 to 1930.

Architecture A4351 Architecture of Islam. 3 pts
Ms. Celik.

An introduction to the architecture of Islam in the Middle East, North Africa, and Spain. Not a comprehensive survey, but an analysis of selected programs from the 7th to the 20th century. Detailed studies of critical cities such as Cairo, Isfahan, and Istanbul.

Architecture A4353 Le Corbusier: "Structures of time, structures of mind, structures of life." 3 pts
Mr. Oubrerie.

A seminar on Le Corbusier's creative process through a simultaneous study of his fields of activity: writing, painting, sculpture, architecture, and town planning; thus, different periods of his life. Lectures and student-conducted presentations with an accompanying bibliography.

Architecture A4355 Frank Lloyd Wright: the development of his architectural design. 3 pts
Mr. Alofsin.
An examination of the architecture and principles of design in the work of Frank Lloyd Wright throughout his career. Lectures, with seminar presentations by students. Submission of a research paper is required.

Architecture A4357 Renaissance seminar. 3 pts
The staff.
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 A4360 American vernacular. 3 pts
Mr. Holl.
Analysis of American architecture after a series of introductory lectures concentrating on rural and urban vernacular. Students are required to select and analyze buildings with rigorous diagrams. General discussions are focused on students' presentations.

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.
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 A4371 Paris: the evolution of urban form. 3 pts
Ms. McLeod.
Seminar on the development of Paris's physical fabric from the Middle Ages to the present. Topics examined include the Ile de la Cité, the Louvre, the Tuileries, the squares of Henri IV, Pierre Patte's royal squares, the plan of the Commission des Artistes, Napoleon I's transformations, the Haussmannian boulevards, the Ceinture Rouge, the cités-jardins, and public housing. Each student makes a presentation tracing the evolution of one major public site.

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

Architecture A4376 Theory and practice of historicism in architecture. 3 pts
Mr. Kaufman.

Through intensive study of specific architects and theorists, the purpose of the seminar is to expose the theoretical basis, and to analyze the changing manifestations, of historicism and eclecticism in Europe and America—from the Rococo to Post-Modernism.

Architecture A4377 London, metropolis of the 19th century: architecture and urban development. 3 pts
Mr. Kaufman.

Research seminar with focus on specific themes, charting the interplay of architecture, government, social reform, and real estate development in London: 1780–1914. Topics include landownership and patterns of residential development; housing types; legislation and public architecture; sanitary reform; parks and public cemeteries; suburbs and slums; literary myths of London.

Architecture A4378 History and theory of architectural preservation in Europe: 1780–1900. 3 pts
Mr. Kaufman.

Focus on specific cases, with survey of changing theories and methods of preservation and restoration from James Wyatt, known as the "destroyer," to William Morris, founder of the "anti-scrape" movement.

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.

A4381 Architecture and the printed media: between theory and criticism. 3 pts
Ms. Colomina.

Seminar on theoretical and critical issues that relate to the transformation of architecture in its mechanical reproduction and diffusion by the press. The development of this transformation is traced within a historical framework, ranging from modernism and the avant-garde to the post-modern condition. Discussions on the most recent theoretical discourse: post-structuralism, feminism, critical theory, etc.

Architecture A4385 Paris, Vienna, and Berlin: architecture 1870–1920. 3 pts
Mr. Hanrahan.

Seminar on developments in architecture from the end of the 19th century to the second decade of the 20th century in the three cities, Paris, Vienna, and Berlin. The work of particular architects is discussed in relation to the emergence of the identity of each city as a center of modern art and architecture. Required weekly readings and presentations.

Architecture A4387 Nineteenth-century English and French architecture. 3 pts
Mr. Kaufman.

Focus on the interplay between historicism and functionalism in the theory and practice of architecture from about 1750 to 1915: the Gothic revival, religious and social reform movements, the arts and crafts, technical innovations, and search for a "modern" architecture.

Architecture A4400 Formal principles of architectural design. 3 pts
Mr. Tice.

The investigation and analysis of buildings within and outside of their cultural context. Emphasis on those design principles that are true for differing cultures and building purposes because they derive their meaning from basic biological and psychological traits as well as from inherent, and thus stable, formal characteristics. Examples of architecture from nonindustrial societies as well as from preindustrial and industrial Europe and America. Lectures and discussions. Intended as a corollary to *Comprehensive Studio I.*

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

A4421 Twentieth-century architecture. 3 pts
Mr. Frampton.

The history of modern architecture is traced from the Renaissance to the present. Emphasis is on the efforts of successive thinkers, reformers, and designers to come to terms with industrialization and its consequences. The impact of modernization, ideology, and politics on architecture and architectural discourse is discussed.

Architecture A4430 Figures and forms of meaning in architecture. 3 pts
Ms. Ockman.

Seminar on the nature of architecture as a language of representation, convention, and poetic expression. Borrowing from literary theory, the course is begun with a consideration of aspects of poetics and rhetoric in architecture. Individual sessions are focused on selected topics such as metaphor, irony, humor, mimesis, and ambiguity. Presentations on topics being discussed are required. Readings from theoretical and literary texts are assigned.

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.

Technology

Architecture A4111 Statics and strength of structures. 3 pts
Mr. McCormick.

The introduction of statics through the determination of reactions and internal forces of statically determinate beams, cables, three-hinged arches, trusses, and framed domes. Both graphical and analytical techniques are considered. Properties of areas. Axial, bending, and torsional stresses.

Architecture A4123 Steel and timber technology. 3 pts
Mr. McCormick.

Application of the principles of structural analysis and design to modern steel and timber construction. The mechanics and behavior of steel and timber members, including modern approaches for bending, compression, and composite elements. Use of A.I.S.C. handbooks and codes. An introduction to the use of computers in the analysis and design of steel and timber structures.

Architecture A4125 Reinforced concrete technology. 3 pts
Mr. McCormick.

Application of the principles of structural analysis and design to modern reinforced concrete construction. The mechanics and behavior of reinforced concrete, including ultimate strength approaches for bending, compression, and prestressed concrete. Case studies include three laboratory demonstrations. Use of A.C.I. handbooks and codes. An introduction to the use of computers in the analysis and design of reinforced concrete structures.

Architecture A4220 Architecture and technology I. 3 pts
The staff.

Architectural design intrinsically implies tectonic decisions. This is an introduction to a required sequence of four lecture/studio courses on the architectural applications of building technology, with an overview of structural, construction, and environmental systems by means of lectures, studio criticism, and field trips. Focus is on issues that must be understood simultaneously from both an architectural and a technological point of view. Masonry construction, in particular, is analyzed in conjunction with design studio assignments.

Architecture A4221 Architecture and technology II. 3 pts
The staff.

The basic architectural/technological issues defined in *Architecture A4220—Architecture and technology I* are explored in greater detail. Studio criticism, field trips, and lectures are focused on light-load framed structures. An overall design view (see *Architecture A4220*) is encouraged, including site analysis and climate control.

Architecture A4610 Architecture and technology III. 3 pts
The staff.

Using techniques proposed in *Architecture and technology I* and *II*, the special aesthetic/technical problems posed by the design of commercial buildings are explored. Small open-plan buildings are used as studio case studies. Concrete and steel structural systems, elevator core design, fire safety, and environmental control are discussed in both architectural and technological terms.

Architecture A4611 Architecture and technology IV. 3 pts
The staff.

Exploration of the issue of building technology and its expression in various building types, with emphasis on studio projects. As the final phase of the sequence, presentation is in an analytical/critical approach, through lectures, studio work, and field trips, with special attention to the effective integration of all building systems and elements to achieve desired programmatic, technological, and aesthetic goals.

Architecture A4626 Architectural detailing. 3 pts
Mr. Martinez.

Prerequisite: *Architecture A4220* and *A4221*.
A "studio" course in which designers 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. 3 pts
Mr. Harris.

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. 3 pts
Mr. Prouse.

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
Mr. Salvadori.

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. Optimalization 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 Freehand drawing: the figure in architecture. 3 pts
Ms. Anderson.

Life drawing and large-scale constructions to explore design issues of scale and proportion and drawing issues of line quality and character. Class exercises are focused on drawing from models and discussing the history of measurement. Assignments include exercises to study the conceptual and perceptual aspects of line work, section sketches in public buildings to learn real dimensions, and construction based on each individual's size.

Architecture A4509 Architectural drawing. 3 pts
Ms. Kalla.

A studio in which the primary objectives are fluidity of thought, visual perception, and technique of representation. Exercises in series are the vehicles for investigation and are of varying durations, employing conventional and unconventional means.

Methods/Practice

Architecture A4240-A4241 Community design workshop I and II. **3 pts**
Ms. Hermanuz.
Designed to provide research and technical assistance to community groups and public agencies, both as a resource for community-proposed projects and as a generator of development opportunities. Involves multidisciplinary work on actual architecture, planning, and preservation problems, requiring a combination of field work, research, and design proposals development.

Architecture A4248 Project management workshop. **3 pts**
Mr. Rose.
An introduction for the advanced student to the various aspects of project management, including project phases, agreements (owner-architect, owner-contractor, architect-consultants, construction-management, etc.), additional services, fees, drawing organization, specification writing and the project manual, bidding documents and procedures, award of contract, and construction administration. Case studies of real projects are presented and a variety of guests and site visits are scheduled.

Architecture A4405 Principles of urban design. **3 pts**
Mr. Eckstut.
Open to degree candidates in architecture and architecture graduates. The external forces that impact the design of a building and, in turn, the forces through which the individual building impacts the urban context beyond its immediate site. Design of buildings considered with respect to the following: (*a*) large-scale design objectives such as land use, bulk, open space, and circulation; (*b*) coordination of a variety of vested interests instead of the traditional single client; (*c*) long-term development in phases. Consideration of architecture in terms of maximum public benefits instead of designing for the users of a building.

Architecture A4530 Computers in architecture. **3 pts**
Mr. McCormick.
A previous knowledge of computers is not required. An introduction to computer utilization in architecture with an emphasis on microcomputer applications (such as electronic worksheets, database management, graphics, communications, word processing, and integrated packages) and recent developments in mainframe computer graphics, editing systems, and text formatters. Both the potentials and limitations for computer usage in the profession are explored.

Architecture A4535 Computer graphics. **3 pts**
Mr. Tountas.
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 two-dimensional models using the University's computer center, as well as the division's computer-aided design facility that includes several work stations, plotters, digitizers, etc.

Architecture A4538 The development process. **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 A4538.*
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 A4545 Economics in urban design. 3 pts
Mr. Bell.

Economic development of troubled neighborhoods and cities. The principles of *Architecture A4538* applied to inner-city case studies. Public laws, regulations, and finance mechanisms are an integral part of the development process. The goals of the public and private developer are examined. Focus on the emerging tools for neighborhood redevelopment, downtown business district revival, new town and in-town housing schemes, industrial development, and special purpose districts using advanced public and private financing techniques.

Architecture A4624 Economic infrastructure of building as an activity. 3 pts
Mr. Bell.

Case study methods. Examination of various land-development and building ventures including single-family housing, condominium and cooperative developments, planned-unit communities, new towns, and new towns-in-towns. "Go-ahead" decision making. Basic approaches to successful buildings. Suburban versus urban housing economics.

Architecture A6900–A6901 Research I and II. 2 or 3 pts
Mr. Polshek and 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.

Urban Design and Building Design

Architecture A6850 Columbia urban design studio I. 9 pts
Messrs. Freeman and Clarke.

An introduction to the vocabulary and methodology of the urban design practice. A variety of scales of built-up land are considered, including the total city, local areas, and the individual property. In all cases, the emphasis is on learning how to survey, discover, and describe an existing situation, as well as on possible conclusions from each type of scale and scope of involvement. Since urban design is implemented by government, and usually in the form of controls and legislation, studio time is devoted to zoning concepts and language. In addition, there are sketch problems intended to introduce advanced developments in urban design graphics and the design of "instructions to others." Most studio work is developed individually and made purposely different for each student in order to provide comparisons and thereby maximize the educational benefits of the many exercises. Field trips are scheduled one day each week. Weekly written reports of the field trips are required, to develop writing skills.

Architecture A6851 Columbia urban design studio II. 9 pts
Messrs. Freeman and Clarke.
Application of material drawn from the previous studio experience and the supporting courses. Each student is a project director for a major urban design project. The studio projects have real clients and involve many outside resources for their solutions, with emphasis on the role and impact of an integrated urban design process on the public as chief beneficiary. Included are approaches and solutions to a related series of design steps involving local area planning, the development of urban design guidelines and criteria, and legislative controls.

Architecture A6854, A6855 Building design studio I and II. 9 pts
The staff.
Aim is to provide an opportunity for qualified and experienced architects to bring design projects to a high degree of resolution and refinement. As far as possible, an attempt is made to restrict the subject matter to a specific topic with particularly strong urban and contextual implications. The procedure is one of continual design and re-design, while generally increasing the operative scale at which the study is progressively presented. Other short exercises are given during the two-term period. A separate seminar is given in conjunction with the design studio.

Architecture A6864 Advanced theory seminar I. 3 pts
Mr. Frampton and Ms. Colomina.
Aim is to examine the theoretical basis from which the main lines of current architectural practice have evolved. The content and subject matter vary, but in general this first seminar restricts itself to a study of theory either in the pre-history of the modern movement (1750–1900) or in the pioneer period of the twentieth century (1900–1950).

Architecture A6865 Advanced theory seminar II. 3 pts
Mr. Frampton and Ms. Colomina.
Aim is to analyze a particular stream of architectural development in the 20th century. The mode of treatment varies. At times the focus is on the work of a particular architect; on other occasions the seminar is concerned with the evolution of a particular school or local movement.

Architecture A6870 Implementation of urban design. 3 pts
Mr. Eckstut.
How urban design gets implemented, and the influence of the different mechanisms on the design process and products. Includes a review of the following: public processes, programs, and laws that shape both public and private urban developments; zoning, capital budget, taxation, finance, urban renewal, mapping, design review, public works, and district design. Also included: several practical applications of writing and drawing "instructions to others."

Division of Urban Planning and Historic Preservation

Historic Preservation Program

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.
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
Mr. Adams.
A survey of American landscape architecture from the 17th century to the present time, 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. Bluestone.

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. Hewitt.

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 A6737 Conservation of 20th-century structures. 3 pts
Mr. Weiss.

Special problems posed by the deterioration and re-design of 20th-century buildings, sites, and engineering structures. Evaluation of the impact of changing construction technology and architectural style on the durability of building components and systems. Case studies in the preservation/maintenance of reinforced concrete, steel, and glass structures, emphasizing contemporary design resources of New York City.

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 of historic preservation. 3 pts
Mr. Matero and staff.

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 I. **3 pts**
Mr. Matero.
The process and methods used to document historic structures. Familiarizes the student with the nongraphic methods of architectural research and analysis.

Architecture A6749 Historic preservation studio I. **4 pts**
Mr. Hewitt.
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 adviser, 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 A6755 Documentation II. **3 pts**
Mr. Weaver.
A continuation of *Architecture A6745.* Introduction of methods for graphic presentation of the existing structure, its physical condition, and its historical phases.

Architecture A6758 Downtown revitalization. **3 pts**
Mr. Mintz.
Provides in-depth background for students involved in preservation planning as it relates to neighborhood conservation. Focus on aspects of downtown revitalization ranging from design to management of social and economic issues. Emphasis on job implementation and case studies.

Architecture A6759 Politics of preservation. **3 pts**
Ms. Longsworth.
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 A6760 History of North American building technology. **3 pts**
Mr. Weaver.
Major materials and techniques employed in American building before 1900.

Architecture A6761 Conservation seminar: masonry. **3 pts**
Mr. Weiss.
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
Ms. Gale.
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 *Urban Planning*—Electives.

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**
The staff.
Advanced planning and design problems in preservation.

Architecture A6775 Historic preservation studio IV. **4 pts**
Mr. Hewitt.
Advanced planning and design problems in preservation.

Architecture A6780 Preservation trade techniques. **3 pts**
The staff.
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 A6862 The legal structure of the urban built environment. **3 pts**
Mr. Byard.
An introduction to the law that shapes, changes, and preserves the built form of cities. Topics include the legal structure of the private transactions that build and maintain buildings; the public regulatory context for transactions, with a particular focus on zoning and preservation laws; tax incentives and other supports intended to shape those transactions; and the legal structure of the public component, including the laws of streets and public spaces.

Architecture A8790 Research problems. **2 or 3 pts**
The staff.
Independent research in history, conservation, or planning.

Urban Planning Program

Core Courses

Planning A4208 Analytic methods A. **3 pts**
Mr. Bach.
An introduction to quantitative and qualitative techniques used by urban planners. 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 Theory and practice of urban planning. **3 pts**
Mr. Sclar.
Lectures and discussions on the history and role of planning as a profession, the types of practice, planning theory, and professional ethics.

Planning A6290 Workshop in planning skills. **3 pts**
Ms. O'Keefe.

An intensive workshop to introduce the tools and skills of the planning profession. Topics include mapping, graphics, report writing, techniques of oral presentation, and sources of community data.

Planning A6911 Planning studio. **6 pts**
The staff.

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 A4112 Physical structure of cities. **3 pts**
Mr. Grava.

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. **3 pts**
Ms. Sassen-Koob.

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. **3 pts**
Mr. Downs.

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. **6 pts**
The staff.

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 applied 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 new towns, metropolitan plans, and public services delivery. Lectures, seminars, and student projects.

Sectors

Developing Countries

Planning A4510. Planning in socialist nations. 3 pts
Ms. Hermanuz.
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 A4602. The context of planning in developing nations. 3 pts
Ms. Hermanuz.
Exploration and critique of development planning theories and concepts as a means to define the problematics of development choices for Third World nations. The implications to planning of constraints of specific geographical areas and ideological goals serve to highlight the recurrent themes of "another development," i.e., basic needs, appropriate technology, cultural integrity, and popular participation.

Planning A4609 Urban planning problems in developing countries. 3 pts
Mr. Downs.
A survey of basic issues in urban planning in developing countries. Focus on the roots and physical and social results of contemporary urbanization, the role of cities in development, and centralization and urban bias, together with consideration of alternative policies and programs.

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 A4618 Seminar in planning in developing countries. 3 pts
Mr. Downs.
Prerequisite: the instructor's permission.
Advanced topical seminar in planning issues and experience in developing countries.

Planning A4628 Planning institutions and development. 3 pts
Mr. Downs.
The institutional organization of planning greatly constrains both its process and outcome. Alternative structures give different priorities to various sets of problems, policies, actors, resources, and implementation mechanisms. Focus is on understanding and harnessing the dynamics and potential of the interdependent conflicting roles of institutions in planning and development.

Planning A4635 Data collection and analysis for planning. 3 pts
Mr. Downs.

Decision making in urban planning and management should be based on sufficient factual information. In many situations, especially in developing countries, data traditionally required are not fully available, and resources may be insufficient to collect the needed data. This course is an exploration of indicators, data collection, and analytic and decision procedures suitable under conditions of insufficient data and resources.

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.

Health and Human Services Planning

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

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

Planning A4515 Issues in urban health. 1 pt
Mr. Burlage.

A seminar series featuring outside speakers concerned with current debates in health and urban policy and planning.

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

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

Planning A4617 Urban development and health in developing countries. 3 pts
Instructor to be announced.

Unique problems of health conditions and human services needs result from large-scale migration, population concentration, urbanization, and industrialization. This course is a critical examination of the range of contemporary problems and the interdisciplinary methods and experiences of planning, evaluation, and implementation.

Planning A6510 Advanced planning and design for health care delivery systems. 3 pts
Mr. Parker.

Review of advanced concepts in the design and planning of health facilities. Exploration of current dynamics in the health care delivery system in relation to the latest institutional and corporate strategic plans and assessment of potential future delivery models relative to market demands, facility needs, and public policy.

Planning A6513 Health and human services research seminar. 3 pts
Mr. Burlage.
Exploration of changing social planning concepts, services sector problems, and institutional forces, with detailed examination of evolving health system planning context, emphasizing emerging and alternative frameworks and roles on the community, municipal, regional, and federal levels.

Public Health P6012 Health, poverty, and the low income consumer. 1 pt
For a complete description, see the bulletin of the School of Public Health.

Public Health P6518 Health facilities planning and design. 3 pts
For a complete description, see the bulletin of the School of Public Health.

Public Health P6540 Dynamics in health planning administration. 3 pts
For a complete description, see the bulletin of the School of Public Health.

Public Health P6544-P6545 Health care financial management I and II. 3 pts
For a complete description, see the bulletin of the School of Public Health.

Public Health P8070 Workshop on international health administration and planning issues. 1 pt
The staff.
A three-day intensive orientation course offered annually in mid-spring with public health, international affairs, and urban planning faculty members.

Social Work T6707 The politics of social welfare policy. 3 pts
For a complete description, see the bulletin of the School of Social Work.

Social Work T6801 Social welfare policy. 3 pts
For a complete description, see the bulletin of the School of Social Work.

Social Work T6807 Social policy and health care. 3 pts
For a complete description, see the bulletin of the School of Social Work.

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. Alternate 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
Mr. 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 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*—Developing Countries.

Architecture A4538 The development process. 3 pts
Mr. Bell.
For a complete description, see listing under Real Estate Development.

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.

Architecture A4545 Economics in urban design. 3 pts
Mr. Bell.

For a complete description, see listing under *Division of Architecture*—Methods/Practice.

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 of cities.

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.

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 policy. 3 pts
Mr. Sclar.

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
Mr. Schaffer.

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-Koob.

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 A6550 Urban labor markets. **3 pts**
Ms. Sassen-Koob.

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

Planning A4210 Introduction to computers in planning and preservation. **3 pts**
Ms. Wade.

An introduction to basic computer terminology, equipment, use, and programming languages and packages. A survey of computer applications in urban planning and municipal operations, 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 Statistical programming and computer graphics. **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 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.

Planning A8900-A8901 Doctoral research colloquium. 3 pts
Mr. Sclar.

Open only to Ph.D. degree candidates in planning or in closely related fields.
Discussion to center on advanced planning theory and on contemporary cases with methodological, conceptual, or policy implications, the specific format and subjects to be determined by the group.

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

Real Estate Development Program

Planning A4312 Real estate finance I: capital markets. 3 pts
Mr. 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
Mr. 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: 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 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. Selver.

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 A6335 Real estate development seminar. 3 pts
Mr. Schaffer and Ms. O'Keefe.

Discussions and critiques of work in progress on final real estate development projects with faculty members and major figures in the real estate development industry.

Planning A6350 Design and technology for development. 3 pts
Mr. Halpern.

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. Schaffer.

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
Mr. Frucher.

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
Mr. Borg.

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.

Admission

OFFICE OF ARCHITECTURE ADMISSIONS: 400 Avery

Telephone (212) 280-3510

Admission Procedure

Application forms may be obtained from the Office of Admissions and 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 all other applications the deadline is February 15.

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 mailed on April 1. An applicant who has been accepted for admission as a degree candidate is required to pay a $500 deposit to the University 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.

Master of Architecture Degree (six terms)

Policy Regarding Admissions and Prerequisites

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 Comprehensive Studio Sequence, before first registration in the M.Arch. program.

   Some students who are required to take the course are officially notified in their letters of admission, which are sent out on April 1.

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 Columbia University Summer Session, is acceptable for fulfillment of this prerequisite:

S3660D Modern architecture 3 pts

Candidates who have not yet successfully completed the above academic prerequisities 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 prerequisities 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 Assistant 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* of the importance of having completed the following nonmandatory 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 be loose leaf; the material 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.

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 Comprehensive 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, *S1020D—Architectural representation: introduction,* at Columbia during the summer, or only the normal three-year sequence *A4001-A4006—Comprehensive*

studio. A limited number of students may receive advanced standing points for *A4001* and *A4002—Comprehensive studio,* 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.

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 chairmen 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 chairman of the Division of Architecture. 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. Required courses may be waived on the basis of professional experience or examination in subject matter. Because waivers do not carry point or course credit, elective courses may be taken to fulfill the credit requirements for the M.Arch. degree. All students must complete a minimum of 72 (out of a total of 108) points of course work at Columbia to obtain the Master of Architecture degree.

The Five-Year M.Arch. Curriculum–Work/Study

Many qualified applicants for the M.Arch. degree do not have available the tuition and time required to attend full time. A work/study option has been initiated, offering such students the opportunity to undertake graduate work while maintaining employment during most of the program.

The full-time program leading to the M.Arch. degree normally requires three years of study and includes 108 points of academic credit. Students in the Work/Study Program are able to complete the same requirements in five years as follows: one year of full-time study followed by four years of part-time study.

Professional Option Plan

The University provides opportunities for students in the School of General Studies to obtain their B.A. or B.S. degrees while completing the first year of the M.Arch. program in the Graduate School of Architecture, Planning, and Preservation. Since the details differ in each undergraduate division, students should consult the bulletins of the particular divisions in which they will be or are registered. Similar programs are available to or may be arranged for students enrolled in other colleges.

Applicants may enter only in the autumn term; they must attend on a full-time basis.

Joint Degree Program in Architecture and Urban Planning

For further information, see *Division of Urban Planning and Historic Presreva-tion*—Joint Degree Programs under Master of Science Degree in Urban Planning.

Joint Degree Program in Architecture and Historic Preservation

For further information see *Division of Urban Planning and Historic Preservation*—Joint Degree Programs under Master of Science Degree in Urban Planning.

Master of Science Degrees in Architecture, Building Design, and Urban Design (two terms)

All applicants for admission to the programs leading to the M.S. degrees in architecture and building design and 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 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 is *not* required.

Applicants for these programs may enter only in the autumn term; they must attend on a full-time basis.

Master of Science Degree in Historic Preservation (four terms)

Applicants for admission to the program leading to the M.S. degree in historic preservation must hold a first 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.

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.

Master of Science Degree in Real Estate Development (two terms)

Applicants for admission to the program leading to the M.S. degree in real estate development 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.

Master of Science Degree in Urban Planning (four terms)

Since the program leading to the M.S. degree in urban planning is designed to prepare students from many different backgrounds for careers in the planning field, applicants may hold degrees in professional fields such as architecture, engineering, planning, and law. They may also hold degrees in the social sciences, usually sociology, political science, geography, or economics. Applicants may enter only in the autumn term. A course in statistics and one in economics, sociology, or political science (preferably related to urban issues) are recommended before entrance into the program. Courses in all three social sciences are recommended.

All applicants are required to take the Aptitude Test of the Graduate Record Examination. 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.

Joint Degree Programs in Urban Planning and Other Disciplines

For descriptions of these programs *see Division of Urban Planning and Historic Preservation*—Joint Degree Programs under Master of Science Degree in Urban Planning.

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

This 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.

Special Students

Under certain circumstances professionals in fields related to architecture may be eligible to take courses in the Graduate School of Architecture, Planning, and Preservation. These students must receive permission from the Office of the Associate Dean for Admissions in order to obtain admission as *special students* (nondegree candidates). Many courses, including the design studios, are not open to special students.

If at a later date a special student wishes to apply for matriculation in either the M.Arch. or M.S. 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. Those interested in applying should contact the Office of Summer Session Admissions, 303 Lewisohn (telephone 280-2838) for bulletins and application forms.

International Students

In general, only those 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 $19,000 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.

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 the Office of International Student Admissions, required to take Columbia University's English Language Placement Test—even if they have taken the Test of English as a Foreign Language (TOEFL—see below). 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 should make an appointment with an adviser in the International Student Office, 208 Lewisohn, Columbia University, New York, N.Y. 10027 (telephone [212] 280-3587). They then must take the English Language Placement Test (in lieu of the TOEFL), unless exempted by this office.

Students Applying from Overseas

International students who expect to have nonimmigrant status (F or J visa) and who are applying to Columbia from overseas should do the following: (*a*) Students should write for a preliminary application to the International Student Office, 208 Lewisohn, Columbia University, New York, N.Y. 10027, U.S.A. This office evaluates the preliminary application and notifies the student whether he or she should proceed with a formal application for admission. No documentation or application fee is required in submitting a preliminary application. (*b*) 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, Prince-

ton, New Jersey 08540, U.S.A. Applicants are urged to make arrangements to take either the November or the February examination.

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, WIX8AB, England. All other applicants should write to the International Student Office, 208 Lewisohn, Columbia University, for a preliminary application. If the preliminary application is found to be satisfactory, a final application for admission to the School will be sent by the International Student Admissions Counselor. Students interested in applying should begin the application procedure one year before they wish to enter.

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 Office of the International Student Adviser, 208 Lewisohn; telephone (212) 280-3591.

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 Office of the International Student Adviser, 208 Lewisohn, provides advice and counseling to international students on such matters as 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.

The staff of the International Student Office, 208 Lewisohn, provides information and counseling on University admission, advanced standing, English proficiency examinations, and academic placement.

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 212-280-5511), 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.

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.

Degree Requirements

The requirements for the various degrees are outlined in the program descriptions. In addition, the student must meet the requirements given below.

Matriculation and Facilities

Completion of degree requirements and graduation should occur no later than two years after the normal time required for completing the degree.

Students who are no longer required to register for courses, but who have not graduated, must maintain their status as graduate students by registering for Matriculation and Facilities, which allows them to make use of various University benefits, including health insurance.

Students are exempted from the continuous registration requirement only when granted a leave of absence.

Design Review

A comprehensive review by the faculty and staff of the design work of every M.Arch. candidate is made at an appointed time. The student must earn a satisfactory recommendation from the design review committee before being allowed to register for the next design course. The committee may recommend that the student be asked to withdraw or that the student be required to complete additional design work and submit to another review before being permitted to proceed to the next term of the design program.

Academic Standing

Students receiving a grade of F in any design course, or in nondesign courses more than one F (or the equivalent), may 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.

Advanced Standing

No advanced standing may be granted until a student has successfully completed one year in the Master of Architecture degree program or one year in the program leading to the award of the M.S. degree in urban planning or in historic preservation.

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. 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.

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 Admissions Office *at least three months* before the student expects to resume his or her studies.

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.

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 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 of program, no adjustment is made.

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 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 one year, it is automatically changed to an F.

The mark of IN (incomplete): given to a student who has satisfactorily met all the requirements of a course except for the completion of certain assigned papers or reports that the student has been compelled to postpone for reasons beyond his or her control and satisfactory to the instructor. If the IN is not removed by the completion of the required work within one year, it is automatically changed to an F. *The mark of IN cannot be assigned without approval from the Dean's Office.*

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.

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. 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.

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.

Conduct

All members of the University community, its visitors and guests, are governed by the Rules of University Conduct, which apply to all demonstrations, including rallies and picketing, that take place on or at a University facility. It is the student's responsibility to be aware of all provisions, regulations, and procedures contained in the Rules. Copies are available in the Office of the University Senate, 406 Low Memorial Library.

Estimated Expenses

The approximate cost of attending the University for the eight months of the academic year is as follows. Tuition is for the 1986–1987 academic year. An increase is expected for the 1987–1988 academic year.

Tuition for a 30-point program	$11,400
Living expenses (room, board, books, clothing, laundry, travel, sundries)	7,800
	$19,200

Materials

Books and supplies for first-year M.Arch. students are available at the Charette Store in Avery Hall. The School furnishes lockers and drafting tables, but students must supply their own paper, instruments, and materials.

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 drawings—whether submitted by graduates or by students in residence.

Fees

The following fees, prescribed by statute, are in effect for 1986–1987, and are subject to change at the discretion of the Trustees. Students can expect an increase for the 1987–1988 academic year.

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	$ 380.00
With the provision that for degree candidates the tuition for a program of 15 to 19 points shall be, per term	5,700.00

Health Insurance 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 is compulsory may waive participation in the health insurance plan 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, per term	$ 79.00
Student health insurance premium	
For the autumn term (September 1–February 1)	
Student only	82.00
Additional cost for one dependent (optional)*	180.00
Additional cost for two or more dependents (optional)*	273.00
For the spring term and summer period (February 1–September 1)	
Student only	114.00
Additional cost for one dependent (optional)*	248.00
Additional cost for two or more dependents (optional)*	378.00

Application Fees and Late Fees

Application for admission as a degree candidate	$ 35.00
Application for admission as a special student	15.00
Late application, or late renewal of application, for a degree	50.00

Late Registration Fees

During late registration	$ 50.00
After late registration	100.00

**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.*

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 the student 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 his or her school division in 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 receives this written notification. (For partial withdrawal, see Changes in Programs of Study, above.)

The health service fee, health insurance premium, application fees, late fees, and special fees are not refundable.

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

Students registered for 12 or more points	$75.00
Students registered for less than 12 points	40.00

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

	Minimum Tuition Retained	*Percentage of Remaining Tuition Retained*
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 awarded three times a year—in October, January, 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. A late fee of $50 will be charged after these dates and until the expiration of the *late* filing period for each conferral date. Applications received *after* the late 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. A $50 late fee will be charged for late filing of renewals of application according to the same schedule as for original applications (see above).

Requests for Transcripts

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 or alumnus. Students or alumni may request copies of their records by writing to the Office of Student Information Services, 201 Philosophy, Columbia University, New York, N.Y. 10027. *Official* copies will be sent direct by the University only to an official address such as another university, a business firm, or government agency. However, students or alumni may request that unofficial copies of their transcripts (stamped "Student Copy") be sent direct to them.

There is a charge of $5 for each transcript requested except for intrauniversity copies sent between University offices. Transcript requests are processed in the order received and require five to seven working days for processing. Specific deadlines should be mentioned, and checks accompanying requests should be made payable to Columbia University.

Medical Care and Insurance

The University has developed a two-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 out-patient care with its own staff of nurses, physicians, and specialists. The Health Service plan includes medical, surgical, and psychiatric consultation in the Health Center as needed; health education and out-reach groups organized around topics of interest to students; an extensive program of women's health care, including gynecologic 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 deans of students. 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 other half of the program is the *Student Health Insurance* (SHI), which supplements the Health Service by providing emergency room and hospital, accident, 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 extensive benefits available under this policy are also described in the Health Service brochure. Futher details of coverage and other insurance information can be obtained at the Health Center or by calling the company's representative, Fiduciary Administrative Services, at (212) 223-0150.

The full Health Service fee is charged to all students registered for 12 or more points or who are certified as *full-time* students by their departments, regardless of 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 elect the Health Service and may, if they choose, participate in the insurance plan by filing an application in the Office of Student Information Services no later than the date specified in the Health Service brochure or by indicating at registration that they wish to be included.

A full-time or residential student who already has a health insurance policy may be exempted 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 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.*

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

On Campus

The University provides limited housing for students registered at the Morningside Campus. The rates below are for the academic year 1985–1986. Students can expect a rate increase for the 1986–1987 and 1987–1988 academic years.

University residence halls include traditional dormitory facilities as well as suites and apartments for single and married students; furnishings and utilities are included, except for off-campus telephone service, which can be arranged—if desired—with the New York Telephone Company after arrival. For the 1985–1986 academic year, housing rates ranged from $2,120 to $3,165 for a single dormitory room and from $2055 to $2705 per person for a double room. A student living in this type of accommodation is expected to sign a 250-day contract for occupancy beginning in early September. Some residence halls have primarily coed apartments, each of which contains three to five single bedrooms. Rates for these range from $3,015 to $3,875. One-bedroom furnished apartments for married students without children cost from $4,320 to $4,780 per couple. For these and the aforementioned coed apartments, a 350-day contract will be in effect starting in late August

Real Estate Management properties (REM) include apartments owned and managed by the University in the immediate vicinity of the Morningside campus. These accommodations are leased to single and married students with and without children. These are leased for one year, as they become available, and may be renewed at rates that reflect the size and location of each apartment, as well as whether furnishings or utilities are included.

Requests for additional information and application forms should be directed to the Assignments Office, 111 Wallach, Columbia University, New York, N.Y. 10027.

Off Campus

The University also operates the Registry of Off-Campus Accommodations, which 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) 280-2773 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 students, both foreign and American. A cafeteria, recreational facilities, and a varied cultural and professional program are available to members. Rates for a single room in the spring of 1986 ranged from $300 to $360 a month and included meal discounts. Rates may go up in the summer of 1986. Interested students should apply direct to International House, 500 Riverside Drive, New York, N.Y. 10027.

Financial Aid

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 admission application has been submitted so that if a favorable admission determination is made, the financial aid application from GAPSFAS can be promptly reviewed.

State Loan Programs

In view of the limitations of the loan resources of the University, each student must first endeavor to obtain a federally insured student loan through a lending institution in his or her state. A loan should be applied for as promptly as possible, since a minimum of six weeks is required for processing the application. Students should contact their local state education offices with regard to the state loan programs in their home states.

New York State Tuition Assistance Program

Any student who has been a legal resident of New York State for the preceding year is entitled to a TAP Award for each term in which the student is registered as a full-time degree candidate. The amount of this award is based upon the net taxable balance of the student's income and the income of those responsible for the student's support, as reported on the New York State income tax return for the previous calendar year.

Application forms and further information can be obtained from the New York State Higher Education Services Corporation, Tower Building, Empire State Plaza, Albany, New York 12255. Application for awards should be filed three months in advance of the beginning of the term for which the grant is to apply.

University Loan Programs

Loan funds administered by the University may be available for students with financial need who have been unsuccessful in securing loans through their state loan programs. University loans, like state loans, are interest-free while the student is enrolled.

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.*

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.

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 institution of higher learning within the State upon graduation. Applications may be obtained from the New York State Higher

Education Services Corporation, Tower Building, Empire State Plaza, Albany, New York 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, Maryland 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, 1419 International Affairs Building, Columbia University, New York, N.Y. 10027. Applications must be submitted by April 15.

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 *current students* is April 1. Forms can be obtained from the Admissions Office during the spring term.

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 graduating student in planning.

MORTIMER HIRSCH MEMORIAL PRIZE
A prize of $75 awarded to the student who submits the best research paper in the history or theory of architecture.

LUCILLE SMYSER 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

Assistantships and Readerships

Teaching assistantships and readerships are available to qualified students. Assistants divide their time equally between their studies and various tasks, helping faculty members in instruction and in administration. A list of teaching assistantships and readerships is available in the Dean's Office in March. Applications should be addressed to Dean Polshek's office during the spring term of each year.

Student Employment—Work/Study

Students who must work part time in order to supplement their budgets should consult the Financial Aid Officer, who determines eligibility for the Work/Study Program. Federal law requires that the student have a GAPSFAS on file in the Financial Aid office in order to determine eligibility.

Wives or husbands of students may consult the Office of Student Employment, 206 Lewisohn, 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.

Academic Calendar: 1986–1987, 1987–1988

Major Religious Holidays

For a statement of University policy regarding holidays, *see* Attendance and Length of Residence under *Registration and Expenses*—Regulations.

The Jewish holy days shown below begin at sundown of the preceeding day. Some of the major holidays are the following:

1986–1987

Saturday, Sunday, October 4, 5	Rosh Hashanah
Monday, October 13	Yom Kippur
Saturday, Sunday, October 18, 19	First days of Succoth
Saturday, Sunday, October 25, 26	Concluding days of Succoth
Tuesday, Wednesday, April 14, 15	First days of Passover
Friday, April 17	Good Friday
Tuesday, Wednesday, April 20, 21	Concluding days of Passover
Wednesday, Thursday, June 3, 4	Shavuoth
Not yet announced	Id al Fitr
Not yet announced	Id al Adha

1987–1988

Thursday, Friday, September 24, 25	Rosh Hashanah
Saturday, October 3	Yom Kippur
Thursday, Friday, October 8, 9	First days of Succoth
Thursday, Friday, October 15, 16	Concluding days of Succoth
Friday, April 1	Good Friday
Saturday, Sunday, April 2, 3	First days of Passover
Friday, Saturday, April 8, 9	Concluding days of Passover
Not yet announced	Id al Fitr
Not yet announced	Id al Adha

Summer Period, 1986

A **late fee** must be paid by students who apply or reapply **after Friday, August 1,** for all degrees (except doctoral degrees) to be conferred in October.

JULY

30 Monday. Last day to apply for admission to the autumn term as a special student.

AUGUST

1 Last day to apply or reapply for October degrees (see September 4).

Autumn Term 1986

A **late fee** must be paid by students allowed to register **after Thursday, September 4.**

A **late fee** must be paid by students who apply or reapply **after Friday, October 31,** for all degrees (except doctoral degrees) to be conferred in January.

SEPTEMBER

2–4 Tuesday–Thursday. Registration, including payment of fees.

4 Thursday, Classes begin.

4 Thursday. Last day to file *late* application or renewal of application for October degrees. Applications received after this date will automatically be applied to the next conferral date.

5 Friday. Late registration begins.

8 Monday. First day to change programs and apply to audit courses.

12 Friday. Last day to (1) register for credit, (2) change programs, (3) apply to audit courses, and (4) register for R credit. **No adjustment of fees for individual courses dropped after this date.**

OCTOBER

21 Tuesday. Midterm date.

22 Wednesday. Conferring of October degrees.

31 Friday. Last day to apply or reapply for all degrees, except doctoral degrees, to be conferred in January (see December 5)

NOVEMBER

3 **Monday. Academic holiday.**

4 **Tuesday. Election Day. University holiday.**

27–30 **Thursday–Sunday. Thanksgiving holidays.**

DECEMBER

5 Friday. Last day to file *late* application or renewal of application for January degrees. Applications received after this date will automatically be applied to the next conferral date.

10 Wednesday. Classes end.

11 Thursday. Study day.

12–19 Friday–Friday. Midyear course examinations. Term ends.

15 Monday. Last day to apply for admission to the spring term as a special student.

20 **Saturday, through January 12, 1987, Monday. Winter holidays.**

Spring Term 1987

A **late fee** must be paid by students allowed to register **after Friday, January 16.**

A **late fee** must be paid by students who apply or reapply **after Monday, February 16,** for all degrees (except doctoral degrees) to be conferred in May.

JANUARY

13, 14, 16 Tuesday, Wednesday, Friday. Registration, including payment of fees.

15 Thursday. Last day to apply for 1987–1988 admission to the Master of Architecture program.

15 **Thursday. Martin Luther King, Jr., Day observed.**

16 Friday. Last day to apply for Ph.D. final examinations (defense) to be held during the term.

JANUARY

19 Monday. Classes begin. Late registration begins.

21 Wednesday. Conferring of January degrees.

22 Thursday. First day to change programs and apply to audit courses.

28 Wednesday. Last day to (1) register for credit, (2) change programs, (3) apply to audit courses, and (4) register for R credit. **No adjustment of fees for individual courses dropped after this date.**

FEBRUARY

13 Friday. Last day to apply for 1987–1988 admission to the Graduate School of Architecture, Planning, and Preservation (except for the Master of Architecture program—see January 15).

16 Monday. Last day to apply or reapply for all degrees, except doctoral degrees, to be conferred in May (see March 30).

MARCH

1 Sunday. Annual Commemoration Service in St. Paul's Chapel.

5 Thursday. Midterm date.

8–15 **Sunday–Sunday. Spring holidays.**

30 Last day to file *late* applications or renewal of application for May degrees. Applications received after this date will automatically be applied to the next conferral date.

APRIL

29 Wednesday. CLasses end.

30 Thursday. Study day.

MAY

1–8 Friday–Friday. Final course examinations. Term ends.

Commencement 1987

MAY

10 Sunday. Baccalaureate Service.

13 **Wednesday. Conferring of degrees and certificates.**

Summer Period 1987

A **late fee** must be paid by students who apply or reapply **after Friday, July 31,** for all degrees (except doctoral degrees) to be conferred in October.

JULY

31 Friday. Last day to apply for admission to the autumn term as a special student.

31 Friday. Last day to apply or reapply for all degrees, except doctoral degrees, to be conferred in October (see September 4).

Autumn Term 1987

A **late fee** must be paid by students allowed to register **after Thursday, September 3.**

A **late fee** must be paid by students who apply or reapply **after Friday, October 30,** for all degrees (except doctoral degrees) to be conferred in January.

SEPTEMBER

1–3 Tuesday–Thursday. Registration, including payment of fees.

7 **Monday. Labor Day. University holiday.**

8 Tuesday. Classes begin.

8 Tuesday. Last day to file *late* application or renewal of application for October degrees. Applications received after this date will automatically be applied to the next conferral date.

8 Tuesday. Late registration begins.

9 Wednesday. First day to change programs and apply to audit courses.

16 Wednesday. Last day to (1) register for credit, (2) change programs, (3) apply to audit courses, and (4) register for R credit. **No adjustment of fees for individual courses dropped after this date.**

OCTOBER

27 Friday. Midterm date.

28 Wednesday. Conferring of October degrees.

30 Friday. Last day to apply or reapply for all degrees, except doctoral degrees, to be conferred in January (see December 4)

NOVEMBER

2 **Monday. Academic holiday.**

3 **Tuesday. Election Day. University holiday.**

26–29 **Thursday–Sunday. Thanksgiving holidays.**

DECEMBER

4 Friday. Last day to file *late* application or renewal of application for January degrees. Applications received after this date will automatically be applied to the next conferral date.

14 Monday. Classes end.

15 Tuesday. Study day.

15 Tuesday. Last day to apply for admission to the spring term as a special student.

16–23 Wednesday–Wednesday. Midyear course examinations. Term ends.

24 **Thursday, through January 19, 1988. Tuesday. Winter Holidays.**

Spring Term 1988

A **late fee** must be paid by students allowed to register **after Friday, January 22.**

A **late fee** must be paid by all students who apply or reapply **after Monday, February 22,** for all degrees (except doctoral degrees) to be conferred in May.

JANUARY

15 Friday. Last day to apply for 1988–1989 admission to the Master of Architecture program.

15 **Friday. Martin Luther King, Jr., Day observed.**

20–22 Wednesday–Friday. Registration, including payment of fees.

25 Monday. Classes begin. Late registration begins.

27 Wednesday. Award of January degrees.

28 Thursday. First day to change programs and apply to audit courses.

FEBRUARY

3 Wednesday. Last day to (1) register for credit, (2) change programs, (3) apply to audit courses, and (4) register for R credit. **No adjustment of fees for individual courses dropped after this date.**

15 Monday. Last day to apply for 1988–1989 admission to the Graduate School of Architecture, Planning, and Preservation (except for the Master of Architecture program—see January 15).

22 Monday. Last day to apply or reapply for all degrees, except doctoral degrees, to be conferred in May (see April 1).

MARCH

6 Sunday. Annual Commemoration Service in St. Paul's Chapel.

10 Thursday. Midterm date.

13–20 **Sunday–Sunday. Spring holidays.**

APRIL

1 Last day to file *late* application or renewal of application for May degrees. Applications received after this date will automatically be applied to the next conferral date.

MAY

4 Wednesday. Classes end.

5 Thursday. Study day.

6–13 Friday–Friday. Final course examinations. Term ends.

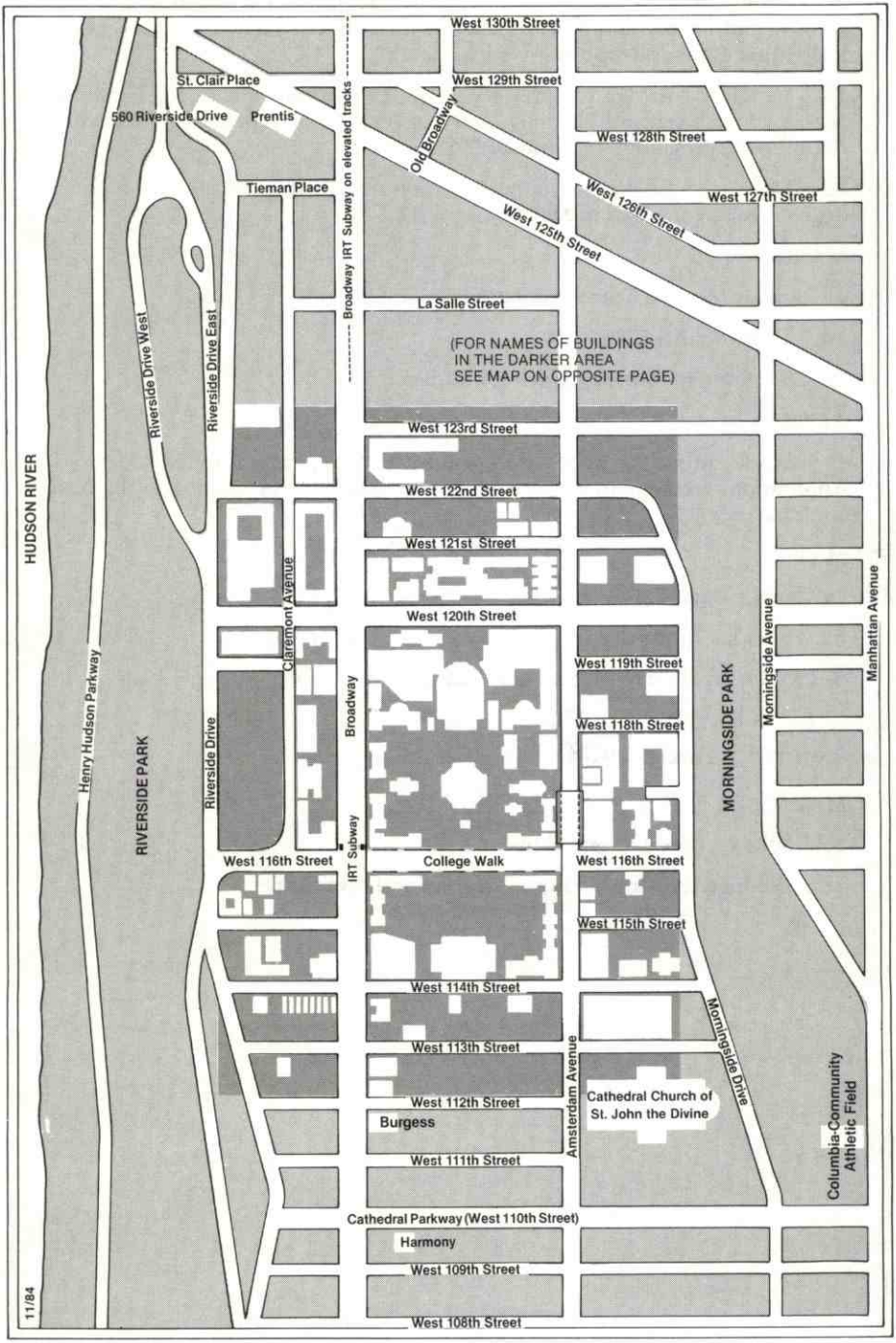
Commencement 1988

MAY

15 Sunday. Baccalaureate Service.

18 **Wednesday. Conferring of degrees and certificates.**

The Morningside Heights Area of New York City



The Morningside Campus & Environs