Graduate Professional +
Research Programs

The School of Architecture offers a Master of Architecture, which is a professional degree accredited by NAAB and recognized by NCARB, for applicants who come from different academic disciplines or who have been enrolled in pre-architecture programs. The School also offers a post-professional M.Arch II degree for applicants with a degree from an accredited architecture program seeking advanced study in architecture. Research-oriented M.S. and Ph.D. degrees in Architectural Sciences with concentrations in Architectural Acoustics, Built Ecologies, and Lighting are also available for applicants interested in pursuing research in a specific area of concentration.

Architecture, Master of Architecture

While contemporary architectural practice is required to meet increasingly stringent requirements for environmental and social responsiveness, it is also being transformed by technologies of visualization, simulation, new materials, and fabrication. We educate future professionals with the critical insight, technological skills, and creative imaginations to make tangible contributions to the larger culture and the built environment. To do so requires a transformation of architectural practice to one increasingly characterized by research, creativity, and innovation—one able to draw from and synthesize disparate bodies of knowledge. The program builds a community of diverse intellectual and cultural traditions to collectively engage in creative and experimental design practices.

The three-year Master of Architecture program leads to a professional degree in architecture that is accredited by the National Architectural Accreditation Board. The program is designed for students who may not have studied architecture at the bachelor’s level, but who wish to become licensed architects.
Architecture is situated at a unique moment in history where a convergence of global interests demands that our discipline respond in a critical and innovative manner. Faced with an ever-increasing focus on creating new forms of renewable energy, smart grids and coastal city solutions, computational engines, immersive environments, and ecologically sound building components for the 21st century, the profession of architecture has inherited a wealth of transdisciplinary priorities that calls out for a new era of creative inquiry and engagement. Reinterpreted as a moment of opportunity, it’s an extraordinary time in academia to explore alternative design methodologies, digital design and manufacturing technology, a variety of more expansive interdisciplinary collaborations, and the larger mission of educating the next generation of architects to harness their innate intellectual and creative imagination in service of a complex planet undergoing continuous change. Here in the School of Architecture at Rensselaer, we take pride in preparing our students to become future leaders in the profession. Beyond offering a comprehensive education that leads toward licensure within our two NAAB accredited professional programs, and a robust concentration of knowledge offered in all of our graduate study programs, we aspire to create an environment and culture throughout the School that rewards the nobility of ideas, the roots of theoretical inquiry, the merits of social responsibility, the resounding effects of innovative design, and the power of a great building as a benevolent gift to the world at large.

Students come from a broad range of backgrounds and disciplines, including the sciences and humanities. The School seeks thoughtful, accomplished individuals with a demonstrated ability to discover and apply creative solutions. Study begins in May with a 12-week design studio. Applicants with significant design studio experience may be considered for advanced placement in the studio sequence. Credit may also be awarded for prior architecture course work. Master of Architecture students participate in a semester-long program at the Center for Architecture Science and Ecology (CASE) in New York City.

Competitive, merit-based scholarships are available to qualified Master of Architecture applicants.

Architecture, M.Arch II Concentration in Geofutures Troy, N.Y.

Fifteen years ago, Nobel Laureate Paul Crutzen announced that the world had entered a new geological age, what he termed the Anthropocene, a period characterized by industrial anthropocentrism as a new geophysical force on Earth. The principal qualities and conditions of this new age, namely those of global warming, mark a fundamental shift in human-nonnatural relations, the end of one world and the beginning of another, in which human social, psychic, and philosophical space has been infiltrated by a nonhuman presence, bringing with it a new period of environmental anxiety and existential uncertainty.

The Geofutures Master of Architecture II program (M.Arch II) seeks to engage this new period of environmental anxiety and existential uncertainty by posing the question as to whether architecture should embark on establishing new affiliations beyond the human; a fundamental realignment of the discipline as something no longer significant for us alone. In doing so, the program endeavors to convert crisis into opportunity by harnessing both the pressures of a planet at risk and the promise of emerging environmental technologies to generate a broad spectrum of possible, if not probable, urban and architectural futures for the 21st century.

Design Concentration: Environmental Parametrics

The program has two design concentrations. The first, Environmental Parametrics, places emphasis on knowledge and expertise in performance design, including state-of-the-art as well as next-generation building systems, structures, and environments. The primary intention of this program concentration is to provide a foundation in the physics of buildings, the performance analysis and evaluation of the built environment, and performance design strategies.

Design Concentration: Ecological Urbanism

The second design concentration, Ecological Urbanism, places emphasis on theoretical speculation and design experimentation. Situated within a long and rich history of speculative urbanism particular to the discipline of architecture, including such visionary proposals as Antonio Sant’Elia’s La Citta Nuova (1914), Frank Lloyd Wright’s Broadacre City (1932), and Kenzo Tange’s Plan for Tokyo (1960), this program concentration challenges students to mine the daring and often prophetic urban visions of previous generations as a means of speculating on the future of the city in the 21st century.

Geofutures provides a highly integrated and diversified 30-credit curriculum of coursework over the span of two consecutive semesters. This curriculum includes design studios, history, theory, and criticism seminars and lecture courses, introductory and advanced courses in building science, as well as computation and fabrication seminars and workshops. The history, theory, and criticism sequence provides a series of seminars and lecture courses that introduce students to both historical and contemporary forms of architectural, urban, and environmental discourse. The building science course sequence provides students with an introduction to fundamental
principles related to the science of ecology alongside a comprehensive working knowledge of state-of-the-art passive as well as active environmentally responsive building systems. The computation and fabrication courses introduce students to state-of-the-art software and production technologies, including scripting and parametric computer modeling in Rhino and Maya, advanced energy modeling and simulation, GIS information gathering and mapping (Global Information Systems), advanced visualization using Adobe Photoshop, Illustrator, and InDesign, as well as digitally automated CNC milling, laser-cutting, and 3-D printing. The design studio sequence brings together the course content of the history, theory, and criticism, building science, and computation/fabrication sequences as a general means of synthesizing these various forms of knowledge into comprehensive strategies for design at both architectural and urban scales.

Graduates of the program are awarded a Master of Architecture II degree (M.Arch II) and competitive, merit-based scholarships are available to qualified M.Arch II applicants. The GRE is not required as part of the application for admission.

**Lighting, M.S.**

The Master of Science in Lighting is the premier master’s level graduate degree offered in the field of lighting. This multidisciplinary degree allows students from a wide range of backgrounds, including architecture, engineering, biology and other sciences, to work closely with faculty at the world-renowned Lighting Research Center (LRC) to study the various disciplines involved in lighting research and design. The program includes a comprehensive study of lighting research, technology, and application to ensure that students receive an education on the “cutting edge” of lighting with a firm foundation in all areas of lighting. Graduates with a Master of Science in Lighting are recruited for careers in the lighting industry, architectural and lighting design firms, and research labs, or continue on to pursue a Ph.D in advanced lighting research at the LRC.

**Architectural Sciences, M.S.**

**Concentration in Architectural Acoustics**

This 30-credit, one-year program is designed for individuals seeking a career as a consultant or researcher in architectural acoustics and related fields. The program attracts applicants with a B.A. or B.S. in architecture, architectural engineering, music, acoustics, physics, engineering, or comparable disciplines. The curriculum comprehensively covers all aspects of acoustics, including architectural acoustics, communication acoustics, computational modeling, acoustical measurement, signal processing, psychoacoustics, and sound control. The acoustical design of concert halls and spaces will be studied through extensive practical laboratory assignments, acoustical field measurements, critical listening exercises, and an architectural acoustic design competition. Students receive the opportunity to conduct original research as part of their master’s thesis.

**Architectural Sciences, M.S.**

**Concentration in Built Ecologies**

This one-year program is designed for individuals with backgrounds in architecture or other fields who are interested in engaging interdisciplinary studies that focus on the development of new architectural strategies. Course work is taught in New York City at the Center for Architecture Science and Ecology (CASE), a multi-institutional research and professional office collaboration co-hosted by Rensselaer Polytechnic Institute and the internationally renowned architectural firm Skidmore, Owings & Merrill. This alliance is dedicated to addressing the needs for sustainable, energy-efficient built environments. The core of the program involves the development of an individual thesis project in close collaboration with a thesis adviser. A wide variety of interdisciplinary issues can be studied. Examples include the investigation of emerging building technologies, issues related to communities and technology, etc. Applicants are strongly encouraged to express their specific interests upon application in their statement of background and goals. The program’s curriculum is designed to meet the individual needs of students.
Architectural Sciences, Ph.D.
The School of Architecture offers the Doctor of Philosophy in Architectural Sciences degree to candidates who are prepared to undertake innovative and substantive research that adds to the body of knowledge drawn on by the design disciplines. The sciences in this context refer to those disciplines that support and shape our understanding and production of the built environment, including its physical, biological, social, cognitive, and cultural contexts. The Ph.D. is an inherently interdisciplinary degree in which concentrations can be elected in Architectural Acoustics, Built Ecologies, and Lighting. A distinguished faculty within the School and across the Institute provides support for research projects that are informed by both disciplinary depth and transdisciplinary integration. The degree is intended for those who desire a career in teaching, research, specialized professional practices, or consulting. The program is designed to build knowledge, skills, insight, and experiences that will enable these individuals to make an original and lasting contribution to their chosen field beginning with their dissertation, and continuing into their professional lives. The program is structured to foster a community of students and scholars, a collaborative environment in which lateral flows of ideas and influences enrich the research agenda of each member of the community.

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Evan Dougis, Dean