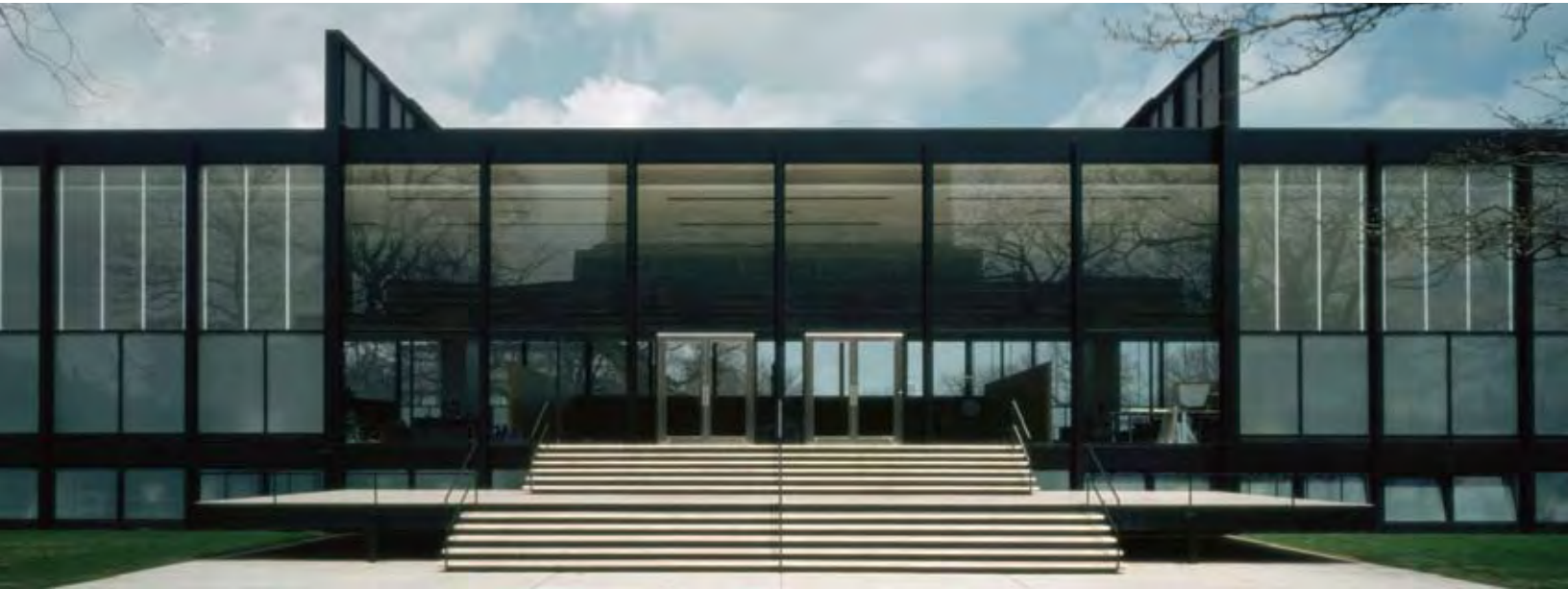


College of Architecture



ILLINOIS INSTITUTE OF TECHNOLOGY



S. R. CROWN HALL

ADVANCED STUDIO DESCRIPTIONS  
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## INTRODUCTION

For upper-level undergraduate and graduate students, Advanced Studios include design projects focused on space problems, comprehensive building design, landscape design, building siting and master planning. They can encompass large programmed areas such as high-density housing and deal with such subjects as advanced digital practices, development of programmed spaces, cultural institutions, innovative building systems, and sustainability.

Enrolling an average of fourteen students, Advanced Studios challenge students to design complex projects in Chicago and other places. Recent Advanced Studios have designed transportation buildings, high-rise buildings, campus projects, national design competition entries, structures for the anticipated 2016 Olympics in Chicago, design/build/develop projects in response to community needs, and landscape architecture projects.

Approximately twenty different studios are offered each semester. Each studio project is proposed and taught by a member of the College's studio faculty, providing a wide range of expertise in specific building types, advanced building technologies, sustainability, digital applications in design, and contemporary materials. Each year some Advanced Studios travel to complete projects elsewhere in the United States or other countries.

## **Neighborhoods and Housing for the 2000 Watt Society** **Peter Beltemacchi and Elizabeth Koreman Studio**

### INTRODUCTION

The design of future cities will largely depend on careful attention to every aspect of the built environment. New cities will go beyond the design of buildings that minimize energy use and maximize ambient energy contained in light, wind and water. New city neighborhoods will also build and support intricate networks of plants and machines that gather and reuse energy and nutrients in the process of cleaning air and water. City design and form will not simply solve the energy and pollution problems of this age, but will also help foster our social, political and spiritual goals. This studio will show the benefits of the partnership between man and his cities with nature.

### THE PROJECT

The project site will be a one square mile area of Chicago. The studio will consider and plan for the process and sequencing of the new neighborhood, including housing, community needs, shopping and work spaces. Switzerland, Denmark, Germany and the Netherlands will serve as examples of this type of work and give students a starting point for the project.

### STUDIO FORMAT

Although the project will be primarily architectural and will be presented as a series of images, students will also submit analysis and proposals of an abstract nature. In addition, specific landscape proposals that focus on recycling nutrients, clean water and storm runoff control will be included. Students may petition to select a building to develop in detail as a comprehensive building project.

## **Visitor Contact Station—Badlands National Park, South Dakota Tim Brown Studio**

### INTRODUCTION

The project for this Comprehensive Design Studio is a new visitor contact station for the Badlands National Park in South Dakota. The National Park Service recently presented a General Management Plan for the north unit of the park which includes the development of visitor facilities at the park's western entrance near the Pinnacles. The complex of buildings is programmatically complex and must be woven into a grassland site featuring rugged terrain, a harsh semi-arid climate, and a sensitive ecological environment.

### THE PROJECT

The studio's primary work will be devoted to an elaboration of ideas about the relationship of architecture to an expanded concept of site. The approach to this site must be expansive enough to capture and treat qualities that are beyond those we typically address in most site analyses. The site's extraordinary natural character, the historical record of ground once belonging to the Lakota Sioux, the role of the Badlands in the country's western mythology, and the mostly overwhelming scale of the landscape itself demand a very careful and thoughtful response to the architectural and environmental issues. The project brief calls for an ensemble of carefully calibrated and integrated structures providing the full complement of visitor's services, work force support, and park maintenance facilities. The studio will utilize the NPS master plan's programmatic outline as a point of departure. Approximately 30,000 sq. ft. of buildings will be situated on a site of over 100 acres. The program includes information and orientation centers, educational pavilions, food services, ranger contact points, toilets, exhibition, ranger offices, and equipment hangars. The park's annual visitor count is around one million people so the station will be heavily trafficked. The chief programmatic challenge will be providing a wide range of tourism-related services for diverse user profiles without adversely impacting the viewshed or environment.

### STUDIO FORMAT

The goal is to create and sustain a studio atmosphere that encourages inquiry, investigation, exploration and experimentation backed up by rigor, discipline and very hard work. The studio pedagogy is built around a collaborative approach to the project: the collaborative effort is between faculty and students, and among the students themselves. The largest share of instructional time will be devoted to individual desk critiques, but there will be frequent group pin-ups and group discussions. Major project reviews will be held at midterm and, of course, at the semester's conclusion. The development of the student's project will involve hand drawing, sketching, multiple software applications, and extensive physical model-making. There will be a mandatory site visit to the Badlands in September and several required day trips to relevant sites in the Chicago area.

## **The EXTRAordinary Susan Conger-Austin Studio**

### INTRODUCTION

Food markets are more often than not spaces devoid of architectural form and material richness, and without any relationship to their urban environment or natural setting. But the potential to bring meaning and connection to this routine ritual of everyday life is enormous. This studio seeks to rethink the contemporary place of food shopping—to challenge the authorless, the common, the humble, the taken-for-granted, and see it differently.

### THE PROJECT

The project for this semester is to design a 70,000 sq. ft. food market and outdoor social space located along the Chicago River adjacent to an abandoned rail line. The market complex will include a large open section for produce, areas for basic foodstuff, bakery cases, salad bars, take-out meals, in-store cafes and kitchens set up for cooking classes with their related support spaces. Other amenities include outdoor eating areas, a space for a seasonal outdoor market, and possible recreational space along the river. To understand the site and the proposed program, it will be critical to do a thorough analysis of the existing conditions of this site. Research will also include analysis of existing food market typologies.

### STUDIO FORMAT

Students will investigate the project's physical materiality in addition to exploring the significance of water and light within the site boundaries. Effects of seasonal and environmental shifts as an essential part of giving meaning to space will be explored. Quality of light, shadow, reflectivity and refraction will be part of the overall design process as well. The studio will examine precedents, explore site strategies, and the design process will emphasize physical models—both conceptual and representational—to critically develop, interpret and present ideas. Experimental studies will take place across a range of scales.

## **Space/Intention/Media/Information/Duration** **Dirk Denison and Jonathan Miller Studio**

### INTRODUCTION

Basing our work on the thesis that the sensory impact of design takes precedence over the physical result of the design process, this studio proposes designing experiences in which the object is sublimated in service of the senses. We will undertake the composition of spatial experiences by means of electronic, digital, interactive media. This undertaking will be conducted in the context of the temporary pavilion designed by Zaha Hadid Studios for Millennium Park that will open in June 2009. We will have the privilege of working with architects from Hadid's office during the course of the semester.

### THE PROJECT

We will begin by researching the topic of media installations, temporary exhibitions and structures. Participants in the studio will present the results of their research and also study the historical scope of the space problem via lectures and other programs. With a historical and conceptual context established, we will proceed to the constitution of space using media as defined by the studio. Models of experience will be created and designs implemented at scale. Attention to the qualitative impact and sensory response to each model will create a repertoire of components from which to generate design refinements. These models will receive critical responses from architects from Zaha Hadid's practice. A final media-generated spatial experience will result from the design process. Each student will develop a final electronic/digital/interactive installation.

### STUDIO FORMAT

Although our group will meet in Crown Hall on a regular basis, students enrolling should be motivated to use the city as a workshop, working outside the building according to an irregular schedule. The intention is for the studio to extend to a wide range of locations and situations during the semester. These may include cultural events, industrial processes, social gatherings, and large scale works of art and/or natural phenomenon. Mandatory meetings with Zaha Hadid architects will occur throughout the semester; absences at these meetings without prior arrangements will be treated as failure to perform adequately in the studio. Studio will typically meet two studio periods a week, plus a third event evenings or weekends.

## **Solar Decathlon Competition** **Frank Flury Studio**

### INTRODUCTION

The Solar Decathlon is an international collegiate competition in which 20 teams of students and faculty design, build and showcase a small energy efficient, solar powered home. Held on the National Mall in Washington, D.C. every two years, the Solar Decathlon celebrates the future of smart building in the form of a publicly accessible solar village. The houses are judged in ten contests ranging from architectural expression to engineering and energy efficiency. These solar homes are a powerful statement of good design - well engineered, smart and efficiently built, and also comfortable and stylish. With a small floor plan, they are also a responsible way of living and using our dwindling resources, being wasteful neither in use of material, energy nor space.

### THE PROJECT

In this studio each student will design a solar house, one of which will be entered into the 2011 Solar Decathlon. The 1000 sq. ft. solar house will utilize passive solar and sustainable technologies. The designs will be based on the principle of environmental responsibility to allow a sustainable lifestyle through low impact design and the implementation of new technologies. To achieve this, the designs will reduce energy consumption through the use of sunlight as the primary energy source and the smart control of solar gain, reduce water consumption to acknowledge fresh water's increasing scarcity by using rainwater harvesting and grey water treatment/reuse, encourage healthy diets and decrease dependency on global food production through onsite production of food using green wall technologies and integrated greenhouse design, and minimize indirect energy consumption through efficient transportation, locally sourced manufacturing and use of recycled products. The studio will also examine the possible reuse of this temporary structure on the IIT campus.

### STUDIO FORMAT

The studio will begin with a research component to investigate sustainable design and technologies. This will be followed by an intensive design phase which will end with each student presenting their completed architectural design. The next phase of design will include detailed system design. Students will have desk crits, interim presentations and a final presentation and formal review with an outside jury. Students will produce design drawings and construction documents. Students are expected to attend all classes and participate in all aspects of the studio which will include: field trips, movies, readings, group discussions, and presentations by outside experts.

## **Reinforced Concrete High-Rise Condominium** **Chris Karidis Studio**

### INTRODUCTION

The studio project will be to plan a reinforced concrete high-rise condominium located in downtown Chicago.

### THE PROJECT

This course will help the student to understand building design as both science and art; building standards, methods, processes, building codes, and zoning ordinances; construction materials, framing systems, assembly systems, and their behavior; the history of construction; good planning and programming procedures; and the implications of design decisions.

After thoroughly investigating the aesthetic, technical, and economic considerations, the student will develop a comprehensive, rational, buildable solution.

There will be emphasis on function, construction techniques, and costs. It will integrate all disciplines related to high-rise residential buildings; for example, programming, zoning, building codes, structure, space planning, and mechanical and electrical systems. It will also examine the influence of marketing strategies on design.

### STUDIO FORMAT

The studio will include lectures, drawing assignments, required readings and technical handouts. Also, it is expected that the student will actively acquire supplemental information from sources outside the studio. In the final review, the student must demonstrate that he/she has fully investigated all areas of concern.

## **The New American Dream: 100K(+20) | Starter Home** **Thomas Kearns Studio**

### INTRODUCTION

With the present state of the economy and continuing crisis in real-estate markets and financing, it is critical that we re-examine the nature and design of affordable housing. Be it rural, suburban or urban, families and individuals of middle or lower incomes face growing divides between the supposed ideals of American living (most often portrayed damagingly by bloated housing of bad design) and what is available to them. This studio will develop critical and progressive strategies for the problem of affordable housing through the design of prototypical single family housing solutions.

### THE PROJECT

The goal will be to design projects within a 100K (+20) budget, where the (+20) is used specifically for special conditions or technologies that will advance the living experience beyond contemporary standards. Students will be asked to independently design a single family home for one of three typologies of owners: middle income or lower income families with children, or single professionals with or without roommates. House designs should be less than 1500 sq. ft. Emphasis will be placed on architecture which addresses and promotes the expression of identity, both of the architecture itself (material identity) and the inhabitants (personal identity) as a direct critique of the blighted American housing landscape and its beige boxes. A smaller than average square footage will be seen as a positive move away from bloated McMansion aspirations, where a smaller footprint is more environmentally friendly and hopefully adds value to the cost per square foot of the living conditions. As alluded by the (+20), the studio will promote the integration of advanced technologies, be they sustainability systems with increased upfront costs usually out of reach for affordable housing, or embedded digital/interactive technologies that transform the way a house is occupied. Each project within the studio will be developed as if it were a real prototype for the contemporary housing market, with time spent developing marketing strategies and related web based media.

### STUDIO FORMAT

The studio schedule will be broken into five parts: research phase, creation of independent prototype, design development phase, detailed drawings sufficient for understanding the essential details and materiality of the project, and the creation of web-sites which disseminate the semester's work as viable prototypes for the market, including conceptual, design, and technological components to both potential builder as well as future owner. Most weeks the studio will have an in-class group review with individual desk crits. Conceptual lectures will be delivered as appropriate to the phase of development and current focus. As needed by the studio at large, workshops on digital media technologies will be held. There will be formal midterm and final reviews with outside guests.

## High-Rise Building Hyeong-Il Kim Studio

### INTRODUCTION

This course will concern itself with offering the student an appreciation and understanding for the scale and rationale of a multistory building and its place in our urban environment. We will be concerned with the integration of structural and mechanical requirements to a high-rise building as well as the necessary space planning, parking, circulation and architectural expression of tall buildings.

### THE PROJECT

In order to emphasize the conditions of actual office practice, we will select an existing site in Chicago's Loop with its attendant physical and environmental facts and applicable zoning and building regulations. Throughout the semester, we will investigate the criteria involved in the design of three generic high-rise buildings:

1. Office building: one million gross square feet (approximately 40–50 stories)
2. Hotel: 500 to 600 rooms (approximately 25–35 stories)
3. Apartment building: 500 units varying in size from studio and efficiency units to three-bedrooms (approximately 30–40 stories)

Each building type will be studied with its own unique requirements and considerations: Site Plan, Building Program, Building Code/Zoning ordinance, Planning Module, Core Planning, Elevating (Vertical Transportation), Lease Span, Parking/Loading, Floor to Floor Height, Exterior Cladding, Structural System/ Building Form Generation, and Mechanical/Electrical System.



### STUDIO FORMAT

The class will be divided into groups to work on two alternative concepts: A two tower scheme with one office building and a combined hotel-apartment building with ancillary services or a three or more tower group involving office, hotel and apartment occupancies in separate buildings and possible joint ancillary uses.

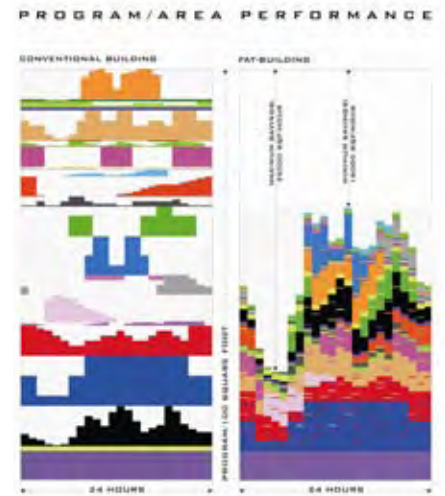
It is hoped that these alternate concepts will result in giving us an opportunity to compare these different approaches for the design of a multi-use complex from a social, economic and physical consequence as well as architectural expression.



## FAT Building—Lake Michigan Ferry Terminal Martin Klaeschen Studio

### INTRODUCTION

FAT buildings are based on the sustainable concept of programmatic density. Accordingly these buildings are scheduled to operate 24 hours, 7 days a week. This constant use of space increases the building's economic and energy efficiency. FAT buildings create interfaces between public and private zones, between neighborhood communities and their urban context in order to facilitate the stability and safety of the public space and its social, economical and cultural life. FAT buildings are multi-programmed. They consist of spaces that have the potential to adopt any program that maintains the use of the building, regardless if it is institutional, administrative, residential, industrial, transportation, public or private. FAT buildings are structural hybrids. They are set together by multiple structural systems (i.e. long span and short span structures, skeleton and solid structures etc.). FAT buildings are made of materials that assist the building in adapting to its environment and support the quality of its interior life and use. FAT buildings are informal. Their form is not a matter of style or beauty, but a matter of their spatial potency for beautiful experiences and stylish performances.



### THE PROJECT

The studio will investigate FAT buildings and their impact on urban environments by designing a case study situated at the southern extension of Navy Pier that interfaces with the banks of Lake Michigan and the Chicago River. The heart of the project will be the Lake Michigan Ferry Terminal. Many people commute daily or weekly between Michigan, Indiana, Wisconsin, and Illinois. In an effort to make public transportation more environmentally friendly, this studio will take on this problem by proposing a ferry hub that creates a park-and-ride service between Lake Michigan ferry lines, Windella's water taxi service on the Chicago River, buses of the Chicago Transit Authority (CTA), Lake Shore Drive and several tourist lines at Navy Pier.

Besides establishing a connection between different means of transportation, the project will host programs such as retail, administration, galleries, parking, and a gym, a long span multi-purpose space for events (weddings, spiritual congregations, conferences, performing arts, and markets) that will interact with the contextual qualities of the connected park, the lake, the river and Navy Pier.

### STUDIO FORMAT

The first part of this studio consists of precedents research, a short environmental design project, and a field trip. Part two is urban analysis and research on Chicago and the lake regions. The research will uncover the regional history, density, patterns of growth, infrastructures, dwellings, popular culture, craft, materials, and construction technology. We will begin design of the FAT building with an informed approach that considers building, culture, economic, social, and environmental issues. Part three is the project design. The building's program, material and structure will be informed by the initial analysis. The final step will be a complete presentation design.

## Berlin Traveling Studio Eva Kultermann Studio

### INTRODUCTION

The scope of this studio is to communicate knowledge of sustainable design and building practice as seen from a German perspective. The objective is to enable the student to understand fundamental aspects of sustainability as a parameter of creating high performance architecture in different contexts. The aim is to develop students' ability to handle complex problems and challenges, both aesthetic and technical, and to combine these in ethical, thoughtful, and thereby sustainable design. In addition, the studio will deal with the societal conditions for the process of creating architecture: ideologies, politics, and societal prioritizing.

### THE PROJECT

The project entails the adaptive reuse of a grouping of residential Plattenbau buildings in the heart of Berlin in such a way that the diversity of floor plans increases to make a combination of dwellings suitable for all ages and all sections of the population. The redesign will be energy and resource efficient, using sustainable technologies and systems according to German requirements. The possibilities and impossibilities of the building system will be explored and defined. We are interested in a discussion of the role of sustainable technologies and their impact on the customs and prevailing conditions of the built environment. The ultimate goal is to control and strengthen the architectural design.

### STUDIO FORMAT

This is a comprehensive design studio requiring a fully developed final design that incorporates structural and environmental resolution. This course will incorporate a range of teaching and learning methods. Through lectures, discussions, readings, assignments and travel, we will investigate the principles of energy conscious and sustainable initiatives in the German context.

The studio will spend two weeks in Berlin to visit and document the site as well as immerse students in contemporary architecture, landscapes, and urbanism through visits to significant projects.



## **Universal Space: The Wide Span Envelope/Building Type—A Challenging New Concept Peter Land Studio**

### INTRODUCTION

The subject of this studio is a wide span canopy structure, to enclose a comfortable living/working environment for various climates and/or seasons, with zero or minimum energy inputs. This means, as far as practical, self-cooling and self-warming capability with ecological content and profile. These characteristics will vary from climate to climate, region to region and can include hot-arid, hot-humid and temperate locations. The ideas of this work have far reaching consequences for socio-economic progress and sustainability at a time of rising fuel costs and rapidly diminishing fossil fuel reserves in the USA, and for developing nations in particular. The universal space envelope may enclose a university campus, an office complex, a shopping center, or an industrial complex.

The pioneering and recent new exciting projects, incorporating entirely or partially this concept will be examined during the research phase before any design work begins. It is also important, informative and inspiring to keep in mind that these objectives were also pursued by some builders in ancient and historical times, often with great effectiveness. Examples in history and in different world regions will be discussed.

### THE PROJECT

The key issues that need to be addressed are:

1. Suitable configurations for a closed system and 'additive' structural concept
2. Suitable upper surface form for solar control and interception, winter and summer
3. Suitable upper surface contouring for wind-flow control, venturi potential, pressures differential action, and directional variation both diurnal and seasonal
4. Suitable upper surface form for integrated wind turbines and photo-voltaic mounting
5. Suitable form for dealing with rain and snow, where applicable
6. Use the ground, below grade, as part of the energy concept
7. Use rain and water storage, where applicable, as part of the energy concept
8. Energy storage both diurnal and seasonal

### STUDIO FORMAT

The studio includes the following stages with approximate times in weeks: research with compendium preparation (3), concept formulation (2), concept development (5), presentation (2).

In addition to key contemporary projects, students will be introduced to the main literature of the subject using the database of Prof. Land. Scholarship and knowledge will be given a high priority. As in all research-based work, the central concept will evolve and shape itself during and within the time framework of the semester.

## **The Public Library–Community Service + Media Access and Engagement Thomas McLeish Studio**

### INTRODUCTION

The function of the contemporary public library is being transformed by the integration of new digital technologies. There is need for careful consideration of how these new technologies augment library functions and thus affect spatial embodiment. This project investigates the future design of libraries and explores design issues such as the “nature of community” and the function of a library in the digital age.

### THE PROJECT

This studio will design a branch library that addresses issues raised through the course of research on the contemporary public library and opportunities afforded it through digitally mediated human interaction.

The goals of the studio are:

1. The identification and invention of functions for the contemporary branch public library.
2. The identification and resolution of complex issues in the shifting functions of the contemporary library in architectural form and function.
3. To learn by doing through the iterative development of working interactive prototypes to explore and experiment with new possibilities of multi-modal interaction methods at a human scale.
4. To understand ‘design methods’ and their strengths and weaknesses as applied to architecture.

### STUDIO FORMAT

Students will read and discuss contemporary writings that cover architecture, interaction design, design methods, design evaluation, and public libraries. Students will analyze existing branch libraries throughout Chicago, and will develop and document a building program for a branch library (~10,000 sq. ft.), while identifying potential sites located in and around Chicago. Students will design and document (site, plan, section, elevation, etc.) a library on a specific site, using user-centered design methods while implementing a series of full scale working prototypes of interactive environments.

## **The Olympic Afterflow** **Peter Osler Studio**

### INTRODUCTION

Chicago 2016 has set high standards for Chicago's proposed Olympic venues and attendant community-based urban design projects. These standards will unfold over time, beginning with the International Olympic Committee's (IOC) acceptance of Chicago's bid (2009), to the Games themselves (2016), and finally to the years after the Games have finished (2016 – beyond). The IOC considers the environment "the Third Dimension of Olympism (after sport and culture)." The IOC's role is "to encourage and support responsible concern for environmental issues, to promote sustainable development in sport and require that the Olympic Games are held accordingly." Chicago 2016 has committed to an *Olympic Sustainability Agenda* that promises to help shape Chicago into an international model for sustainable urban development such as positive water renewal and a green infrastructure legacy.

### THE PROJECT

The studio will work with Chicago 2016 to envision how Chicago can set the highest standards for environmental, landscape architecture and architectural design. The studio will work in collaboration with leaders from Chicago 2016 to investigate a multi-layered approach of designing sustainable landscapes and architectures within, around and between several specially selected (proposed) venues. Students will be asked to envision and visually represent unprecedented, achievable designs related to contextual relationships between venues, landscapes, legacy-based infrastructures, and community-based environmental urban design strategies. We will especially focus on the staging of constructing sites for and around venues, and on the restorative environmental legacy each venue leaves for its community once the Games end. A parallel collaborative investigation will be on-going at Archeworks. Archeworks will focus on community-based initiatives of the venues, and design policies that guide venue and infrastructural legacy development. To compliment the investigation, throughout the semester, Archeworks will host a series of lectures by experts and stakeholders on environmental urban design.

### STUDIO FORMAT

The first two weeks will be spent working on precedence studies. Students will examine past Olympic and major event venue (e.g. World's Fairs) sites to better understand the history and possibilities of post-event sites. Emphasis will be given to four specific Olympic venues that have been deemed to be temporary, and/or the connective fabric linking them. There will be a mandatory meeting with Chicago 2016.

## Single Family Manufactured House Frederick Phillips Studio



### INTRODUCTION

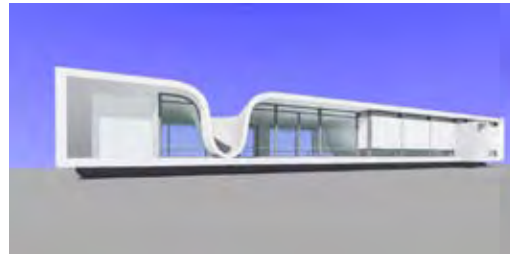
This studio will demonstrate that there is ample room for innovation in manufactured housing today without substantially altering federal and state codes that regulate the industry and assembly line construction methods and materials that allow fast and cost-effective fabrication. Students will be designing a modular house: a house completely built in a factory, to be shipped to a designated site, and placed onto a site-built foundation. Student designs will show that the industry can react immediately without having to alter codes or re-tool assembly lines. Students will research sustainable architecture and investigate opportunities to incorporate those design practices into the existing world of manufactured housing.

### THE PROJECT

Students will design a 1,500–2,000 sq. ft., two–four bedroom manufactured house on a rural vacant lot in Lakeside, Michigan, a weekend retreat town on Lake Michigan that is a one-hour drive from IIT. Students will choose their site from two adjacent wooded one-acre lots. One site is mostly flat with a low-lying wetland to the northwest. The other is flat but backs up to a man-made raised portion shielding it from a well-trafficked road to the southeast. There are opportunities to incorporate this raised landmass into the design. This will be a comprehensive building design studio. Because the houses will be small to moderately sized, the studio aims to achieve a high level of detail in the design and drawings, sufficient for issuance to the factory for final engineering.

### STUDIO FORMAT

The research phase of the course will focus on first hand interaction with industry experts. We will begin by visiting a manufactured housing factory near Chicago in Bristol, Indiana to learn about design and fabrication from the manufacturer's perspective and federal and state codes with respect to size, design, and materials. We will visit and choose sites in Lakeside, Michigan. We will also meet with experts in sustainable design. Students will have a strong command of industry and code requirements, site opportunities, and sustainable options before beginning design. Once design begins, individual crits will be frequent and group crits planned at targeted stages of the design process. We will emphasize real models as well as 3D computer models, and construction details as well as innovation.



## **The Urban Challenge** **Peter Roesch Studio**

### INTRODUCTION

Prime farmland in the United States is being lost to urban development every year. In 60 years, the United States could become a food importer. This studio will explore responsible urban development in the form of compact living units. Our goal is to create more condensed city living through the development of innovative low- and mid-rise housing.

### THE PROJECT

Urban housing should serve and strengthen a community. In the design for good housing, we must strive for excellence to meet the responsibilities of our time, but we must also look for the opportunity for new ideas and innovations in space, form, structure, exteriors, and furniture. We will explore innovative concepts for low- and mid-rise housing.

Topics will include:

1. Energy Crisis or Waste Consumption
2. Urban Wasteland
3. Misconception of Space Needs
4. The High Cost of Distance
5. Allees or Alleys
6. Parks or Parking
7. The Charm of Density

### STUDIO FORMAT

Living units could be produced by industrial means and placed upon different sites with a high density of population. Each student shall decide upon:

1. The number of dwellings within a cluster
2. The size of each house within a cluster (example: one 2-bedroom dwelling, three 1-bedroom dwellings and one studio dwelling.)
3. Design should start with a single "cluster" and move towards the combination of many clusters on the student-chosen site
4. The flexibility of a cluster should be a driving force behind the design

## Urban Community Center John Ronan Studio



### INTRODUCTION

A comprehensive building design studio with an emphasis on material investigation, the studio seeks to cultivate an understanding of the forces (social, programmatic, environmental, etc.) that influence design, and develop in students an ability to form an articulate response to those forces in architectural terms.

### THE PROJECT

This studio will explore the relationship between building and urban space through the design of a community center in the River North neighborhood of Chicago. The studio will be expressly concerned with the issue of design methodology, and a particular focus of the studio will be how to develop a project, as much as what is designed. Students will learn how to analyze design research and establish priorities among the many factors that influence a particular design, and how to develop concepts relating to those priorities. Studio members will learn how to translate their abstract concepts into architectural terms, using space, structure and materiality to articulate and communicate these concepts, and learn how detailing and tectonics can be used to reinforce the overall building concepts. Important to this discussion is the communication of ideas, and the studio will concern itself with how ideas and building concepts are clearly communicated, both verbally, graphically and three dimensionally. Students will learn how to develop and coordinate the many tools—drawings, text, graphics, models, verbal presentation—at their disposal in developing a consistent message about their project design.

### STUDIO FORMAT

Students will start the semester with a short (one week) group research project to establish design criteria and to obtain an understanding of the various forces that will influence the design of the project. Students will then embark on the design of the project by first establishing the conceptual framework of the project, which will then be developed in architectural terms. In the second half of the semester, the studio will focus on materiality and tectonics, as it relates to the building concept. Studio time will consist of desk crits and group pin-ups; there will be one field trip to a community center in Chicago. There will be a midterm review and a final review with outside critics.



## **Manufactured Housing Thomas Roszak Studio**

### INTRODUCTION

The focus of the studio will be manufactured housing in the context of a single-family home. Many of the housing industry's current construction methods are 50 to 100 years old. We will look at the existing state of pre-manufactured housing, and look for inspiration from transfer technologies from auto, aircraft, and other industries. How can housing be transformed in both aesthetic and manufacturing terms? Students will have a choice to explore either panelized (wall and floor panel components) or modular (factory finished modules) construction.

### THE PROJECT

The studio project will be a 6,000 sq. ft. single-family home located on one acre in Northfield, IL. Each student's project will be unique and will be designed to be environmentally effective. Emphasis in the studio will be on architectural quality, construction process, building energy, customization and the connection of pieces. The studio will also utilize outside expertise from various industries to help steer the direction of the work in terms of design, method, and cost. Each student will design a building, study and describe the construction methods, create renderings or animation, and build both 1:1 and 1:100 study models.

### STUDIO FORMAT

The studio will be primarily based on individual and group critiques as the work progresses. The studio will include field trips, presentations, required readings and two charettes. Students will create a research summary report about transfer technology from the auto, aircraft or other industries. A final oral presentation will be required as well as submittal in digital and paper format of all work at all stages, including sketches, photos, and model photos. A compendium of the students' studio work will be published in an iPhoto Book.



## High-Eco-Tech Werner Sobek Studio

### INTRODUCTION

The studio will teach a fundamental understanding of all green aspects to be considered in the design of a building and the rigorous integration of those aspects into the architectural and structural design.

### THE PROJECT

The advanced studio consists of two parts. In the first part, which will take about three-four weeks, we collect the basic data and requirements needed for the design of advanced sustainable buildings. Groups of two students each will research topics like photovoltaic, geothermal, recycling, heatpipe technologies, advanced façade technologies, and energy storage. The data, as well as background explanations, will be presented by the students in the studio and will also be stored in an electronic database called "The IIT Sustainability and Material Database," which will be provided by Werner Sobek. The database is subject to continuous further development and will be accessible to the students of the studio.

The second and main part of the studio deals with the design of a habitat ("residential") in the Chicago area for six persons of three generations: two kids, two parents, two grandparents. The student may pick the site or synthesize one. The discussion of the urban context is only of secondary interest in the context of this studio since we put all the attention on the problem of how to interweave rigorous sustainability aspects with architectural, structural and façade design.

### STUDIO FORMAT

The collection of data, requirements, codes and regulations which will take place in the first part of the studio will be orally presented and finally documented in the database. The building design itself will be done first on the basis of sketches and simple models. Final presentation includes a model (scale 1:100), drawings showing plans, elevations and details, structural system, and sustainability concepts. The materials which constitute the building's appearance, like carpets, exposed structures, and walls, should be presented as well by using a material box or a material case.



## **Space Problem** **Arthur Takeuchi Studio**

### INTRODUCTION

The Space Problem course at IIT shifts the study of architecture to the study of space itself, that is, the void contained within. It deals with a new type of space different from all previous types that has its genesis in the development of steel skeleton construction. This development made possible the free dispositions of walls that were previously almost always confined to positions necessary for the support of horizontal framing systems. Freed of this role, walls could become lightweight partitions or screens that could be freely placed anywhere within the space enclosed by the structure. The possibilities for new artistic expression that were vaguely suggested in the formative phases of the technical achievement now emerged in clearer form. Instead of compartmentalized segments of space as in traditional buildings, space now became an ensemble of freely articulated space segments, open, transparent and flowing.

### THE PROJECT

This studio studies the space at IIT's Crown Hall and along with the study of space is the study of materials, their expressive qualities and their role in defining and enhancing space. Parallel to the development of technology and architecture has been the equally revolutionary development of new forms of paintings and sculpture and the question of how these should relate to architecture. The space problem is an advanced study of architecture and the phenomenon of space, its language and grammar.

### STUDIO FORMAT

The study consists of two parts, the first being a series of exercises to train the eye and make clear the rudiments of space, its formation and syntactical articulation, the second: the application of basic spatial principles to the solution of a comprehensive project encompassing functional, and other programmatic requirements. These studies will be conducted primarily in three dimensions through a series of one-on-one critiques. Analyses of historically important projects and reading assignments will supplement the main coursework.

## **Environmental Contextualism: The Façade as Communicator** **Ross Wimer Studio**

### INTRODUCTION

Often the massing of large architectural projects has been specifically defined by a client's program, site or zoning requirements before the design process begins. The challenge of this sort of opportunity is to allow the building to communicate through its surface expression rather than spatial or formal means. A particularly significant expression is one that responds to environmental conditions.

### THE PROJECT

This design studio will focus on the design of a series of high-rise buildings that form a large community in Dubai. Unlike many developments in that city which tend to be comprised of isolated monumental buildings accessed by automobile, this community is designed to form a pedestrian oriented urban fabric served by mass transit. In addition, the towers within the development will conform to new, highly restrictive environmental standards.

### STUDIO FORMAT

The massing and plans for these buildings will be provided to the studio. Each student will then design a skin for the building, with the goal that at the end of the semester large-scale prototypes of the building envelope will be built. The first week of the term the studio will engage in research. The site, context, and Gulf environment will be investigated. The second week of the term will be an intensive high-rise design and engineering workshop. Structural, mechanical, and environmental engineering for high-rise towers will be the focus. Architectural space planning for condominiums, exterior wall systems, and core design will also be covered. By the end of the workshop a specific site within the district and a program will be selected by each student. Student work will be developed through a series of desk crits, pin-ups and reviews. SOM design, technical, engineering and digital design staff will provide a broad spectrum experience to the critiques.

## **Corporate Visitor Center for the Boeing Company in Chicago David Woodhouse Studio**

### INTRODUCTION

Architecture shapes experience. We build what we are. We are what we build. But how should we shape architecture to shape this experience? This studio will examine a contemporary project typology—the corporate visitor center—which is characterized by the singularity and intensity of the experience it provides. We will define this experience and then explore the various resources we can use—the pragmatic contingencies of program and utility, site and climate, tectonics and craft; the promptings of our memories and intuitions; and our study of the past, involvement in the present and hopes for the future—to create an architecture that will shape this experience from the largest conceptual level to the smallest physical detail.

### THE PROJECT

Corporate visitor center is a building type that is intended to reflect a corporation's image of itself to the general public. The project is a 25,000 sq. ft. facility (containing exhibition space, a restaurant, café, and a store for the sale of corporate merchandise and collectibles, and support offices) for the Boeing Company. Boeing has customers in more than 90 countries around the world and is one of the largest U.S. exporters in terms of sales. The site is the public plaza at 2 S Riverside Plaza (Daily News Building, Holabird & Root, 1929) immediately south of Boeing's corporate headquarters at 100 N Riverside Drive (Ralph Johnson, Perkins & Will, 1990) and across the Chicago River from the Civic Opera House Building (Graham, Anderson, Probst & White, 1929). The visitor center must be lifted above this prominent waterside public space so that 90% of its area remains unobstructed at the plaza level.

### STUDIO FORMAT

In the early stages of the project, the studio will be organized as a group (or as several smaller groups) for research, case studies, site investigation and field trips which will identify a shared conceptual framework to be used by all students and to verify a common space program to be used for all projects. Once this important foundation has been laid, the emphasis will shift to one-on-one desk crits and meetings between the student and the professor as each student's own concepts are identified, researched, assessed and developed. Throughout, the goal will be to instill a creative process that is consistent and controlled while the work created is fresh and surprising.