

Habitat Seen and Imagined:

The Living Bridge: A Study in Lightness

Paul Endres

Assistant Professor IIT, SE, FAIA

Susan Conger-Austin

Studio Professor IIT, AIA

“When I’m working with materials it’s not just the leaf or the stone it’s the processes that are behind them that are important. That’s what I’m trying to understand, not a single isolated object but nature as a whole”
Andy Goldsworthy, artist

Studio Brief

Employing the concept of “lightness” as a strategy, the studio will attempt to use the least amount of material to provide maximum benefit to achieve a new typology for collective housing within an urban setting. This fall, the studio will focus on the potential of a material – wood – and in particular, bamboo, to discover how “the invention of form coincides with the invention of the building process.”¹

The urban setting will be in Miami, Florida, a city of contrasts. On one end, there are landscape ecologies, ranging from the Everglades to the dense hammocks to Biscayne Bay and the beaches. These natural and distinct environments are mixed, and at times, subsumed by the rapid growth and densification of the city and its infrastructure. In addition to the winter playground resort setting, there is a cultural uniqueness, which sets Miami apart from any other city in the United States. Beginning in the late 1950’s with the influx of immigrants from Cuba, populations from the Caribbean islands, and Central and South America have moved to or invested in the City, spawning a transnational character. But for all this diversity, dynamism and international wealth, the city of Miami is ranked among the nation’s poorest. Challenges to renew and redevelop the inner city are ongoing. This is why Miami is a perfect incubator for the studio’s exploration to transform the urban habitat.

In our continuing quest to study lightness, students will consider the creation of a living landform, one that is sustainable as the metropolis matures. Investigation will be undertaken to evaluate the scale of the population versus the building and the **potential of living on and within a bridge**. Over the course of this semester, we will define conditions that make a space desirable, both physically and emotionally, creating a community. Approaches to the infrastructural requirements need to capture both a humanistic position and organizational hypotheses. New systems will enable new forms of building instead of the building informing systems.

In the production of a material-based city form, students will investigate what it means to design in a world of ever expanding population and diminishing resources. Embracing the embodiment of lightness in the crafting of space will be our goal.

¹Rafael Moneo from his discussion of the origin of architectural form in the work of Antonio Gaudi)

Project / Site



The studio will create a hybrid-housing proposal engaging both culture and infrastructure that will spark dialogue on long term growth and sustainable development in the city of Miami. Building upon the research to be completed this fall, the studio will also explore both the present and future transportation systems.

The project site is situated on the waterfront and adjacent land surrounding the bay between Miami's downtown and the keys of Brickell and Virginia.

Knowledge / Expertise

While this studio is specific in the material resolution, the cultural engagement of this project is not. Students will define approaches to the infrastructural requirements needed to capture both a humanistic position and organizational hypotheses. Questions to be answered in addition to the production of a material-based city form include but are not limited to:

- What are the conditions that define quality of life?
- What defines "lightness"?
- What are the qualities that make a space desirable, both physical and emotionally?
- How is "sustainable" defined?
- What are my responsibilities as an architect?

Schedule

The studio will consist of individual desk critiques, group discussions, lectures and formal reviews with outside critics/professionals. 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. The studio will meet three times a week – MWF beginning at 2 pm in Crown Hall unless specified by the professors.

Weeks 1-5: (IN GROUPS)

Research planning strategies/case studies of structural form for bridge architecture. Research properties of bamboo and biomass produced with construction of such a structure.

In addition to the case studies, models to be considered are:

- Le Corbusier Villa Radieuse,
- Frank Lloyd Wright's Broadacre city
- Daniel Burnham, White City, Burnham Plan
- Frederick Law Olmstead, Park-City Beautiful
- Ebenezer Howard, Garden Cities of Tomorrow
- Buckminster Fuller, Cloud Nine, The Floating City
- MVRDV, Seoul Skygarden
- Kenzo Tange, Tokyo Bay

Week 7: FIELD TRIP TO MIAMI

Weeks 8-15: (After midterm) Groups of 2-3

Who will occupy this bridge? Development of Dwelling.

Assumptions:

Development of scenarios/stories: Ethnicity, gender, myth, demographics, etc.

- Family
- Single person
- Elderly
- Student
- Combination

Project a shared city as it relates to:

- Infrastructure,
- Circulation systems,
- climatic control,
- energy issues,
- Commerce,
- Recreation,
- Culture,
- Institutional governance

Deliverables:

Create a program that embodies the potential of living on and within a bridge.

Develop a concept to express the promise that living in a city of tomorrow will bring.

Final Deliverables

Creation of large-scale city model with bridge/housing concept,
Scale model of a dwelling
Diagrams/graphic analysis of the city
Section perspectives through city
Section, plan, 3d drawings

ATTENDANCE POLICY

The studio provides a working environment that thrives on group interaction, dialogue and a sharing of ideas with classmates. In order to foster a sense of community, as well as to support one's personal development, students are strongly encouraged to work within the assigned studio space rather than in isolation. Work away from the assigned studio space is allowed (model shop, computer lab) as long as it is communicated to the Professor. If a student is unable to attend class, notification must be sent via email or text prior to the class. No person will be absent from any presentations. Missing more than three classes without notification will result in a failing grade for the class.

GRADING POLICY

A: excellent work
B: above average work
C: average work
D: below average work or late/incomplete
E: Failed work; late or incomplete

Criteria for evaluation includes:

Architectural quality of work

Depth and rigor of the design process (investigation, development) and

Effort (participation in class, fulfillment of assignments and attendance)

AMERICANS WITH DISABILITIES (ADA):

Reasonable accommodations will be made for students with documented disabilities. In order to receive accommodations, students must go through the Center for Disability Resources office. The Center for Disability Resources (CDR) is located in Life Sciences Room 218, telephone 312 567.5744 or disabilities@iit.edu.

CV

Paul Endres SE FAIA LEED APBD+C

Professor Paul Endres is the Founder/Principal of Endrestudio, a multi-disciplinary, research-based design practice located in California and Illinois.

Licensed as both an Architect and Structural Engineer, he has won numerous awards, including the American Institute of Steel Construction National Award (2014), Structural Engineers of America Award of Excellence (2013), Creative Achievement Award for American College Schools of Architecture (2015), Museum of Modern Art (New York) P.S.1: Young Architects Program (2007) and Custom Home Design Award (2014)

In 2009-2010, Professor Endres was the Illinois Institute of Technology Morgenstern Chair and in that same year, was elevated to a Fellow in the American Institute of Architects (FAIA).

Other Awards/Publications

2016 Cloud Studio First Prize (with Professor Susan Conger-Austin)

2014 Finalist for Adobe Bridge Competition Palo Alto, CA

2010 Finalist for Providence Pedestrian Bridge Competition Providence, RI

2007 Carnegie Museum of Art (Pittsburgh, PA): West End Bridge Competition

2015 "Evolution of an Iconic Dome in San Diego" SEI Structures Conference, Portland, OR

2013 Paul Endres "Temporary Reticulated Structure at PS1." International Congress of Structure and Architecture

2006 "West End Bridge", International Bridge Conference, Pittsburgh, PA

Susan Conger-Austin AIA

Professor Susan Conger-Austin is both an educator and practicing architect. As principal of S. Conger Architects LLC, she has worked on institutional, commercial and residential projects. Her teaching approach derives directly from her career in professional practice, both adhering to the same process, standards, and methodology. Currently, one of her projects (in collaboration with Strawn+Sierralta) is in the *50 Designers/50 Ideas/50 Wards* exhibit at the Chicago Architecture Foundation. Prior to starting her firm, Susan was a Studio Head and Associate Partner in the Chicago office of Skidmore Owings & Merrill, working on large scale commercial projects throughout the United States and Europe.

Since 2000, Susan has collaborated with numerous universities and faculty throughout the world in various educational workshops, seminars and exchanges. As a Fulbright Specialist Scholar, Susan taught in Chile and has been an invited participant to an international design workshop in Santiago, Chile for the past several years. In addition, she lectures at the Escola da Cidade, Sao Paulo, Brazil, in their post-graduate seminars focused on urban issues within Brazil and the United States.

Professor Conger-Austin received her Masters in Architecture degree at Princeton University and her Bachelor of Arts degree in economics and art history at Stanford University.