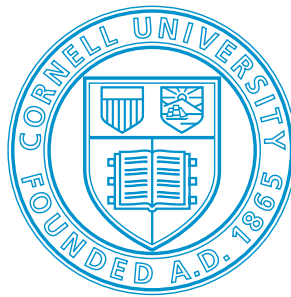


COLLEGE OF ARCHITECTURE, ART & PLANNING  
DEPARTMENT OF ARCHITECTURE

FALL 2016  
OPTION STUDIOS



# Option Studio - Slow Building

## Syllabus

Semester:	Fall 2016
Course:	Option Studio
Location:	AAP
Class Hours:	Monday, Wednesday, Friday 12:20-16:30
Instructor:	Rubén Alcolea / ralcolea@unav.es
Office Hours:	Scheduled by appointment



Palacio Zarauz, Getaria

## I. Rationale

The option studio will discuss some of the main issues of Architecture within the context of the evolution of human culture through time, as well as strongly related to the culture of gastronomy. The emerging 'Slow Food' culture fights against the rushed consumerism and trivial food consumption, and supports that humans deserve more than just feeding, so it relates food culture with sensorial perception.

## II. Course Aims

The aim of the studio is to work closely to the everlasting, in opposition to very temporary or perishable exercises of architecture, but without refusing the strength of contemporary formalizations. The project should deal with the idea of Architecture acquiring its personality through time and considering its enduring for more than just a few years or decades. Acknowledgement that the built environment is a persisting artifact of culture should be approached with consciousness and respect but also with ambition and poetry. In that context, the concept of aging in architecture becomes capital, and the project should react in terms of now, future and, why not, forever. Dealing with existing buildings, ancient or recent, is one of the major concerns in historical and modern cities, and any opportunity to reuse existing spaces should be approached by architects with courage and respect, and coherently defined in terms of structure and materiality.

# Havana After Nature

Urban Hinterlands and Architecture as Environmental Infrastructure

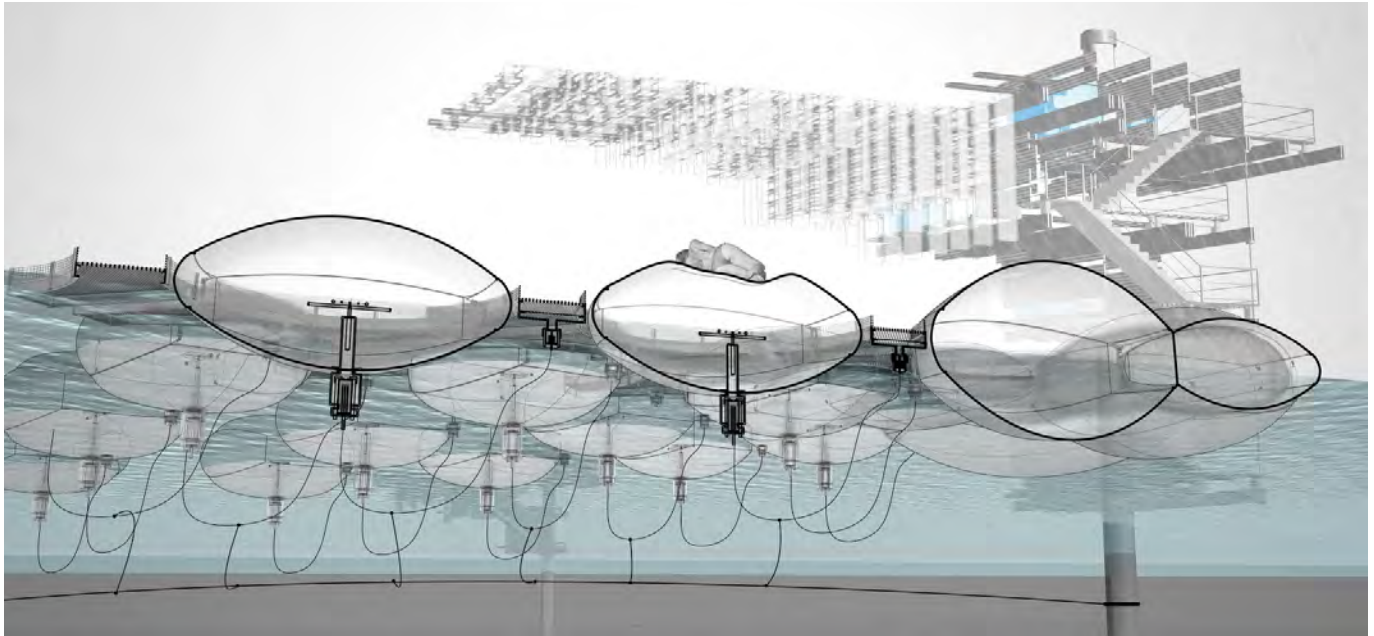


Liudmila and Nelson, *Absolute Revolution* series, 2005

This studio will investigate the city of Havana, with specific focus on the problem of the environmental legacy of socialism. The environmental consequences of the transformation of Havana as a function of its revolutionary socialist formation in 1959 has received little attention as a specifically architectural problem. The urban topography is more typically understood in architecture from the perspective of its colonial heritage embodied in La Habana Vieja, the monumental context of the Plaza de la Revolución, iconic modernist projects such as the incomplete Instituto Superior de Arte, or romantic impressions of the Malecón sea wall. Cuba post-1959 was fundamentally an insular-urban project, in the sense that the rhetorical, architectural motif of utopia became a political project for the island as a whole in the ideological construction of the socialist state. This socialist construction involved the literal transformation of the city of Havana as a material infrastructure, even if this condition is understood negatively, in the form of urban-infrastructure neglect. Alongside the more typically imagined city, we find a complex social housing network, tied to an industrial hinterland comprising thermoelectric plants, oil refineries, distilleries, chemical plants, and in general an industrial topography as part of the total urban infrastructure. This studio is developed in parallel with the Mellon Expanded Practice Seminar, "Cuba as Project: Urban, Political, and Environmental Transformations of the Island", co-taught by Tao DuFour and Tom McEnaney.

# HYBRID INFRASTRUCTURES

EMERGENT TECHNOLOGIES FOR A SELF-SUFFICIENT CITY



Half of the world's population lives within 60 km of the sea, and three quarters of all large cities are situated on the coast. Due to climate change, water is breaching the established boundaries of coastal cities and threatening to transform the urban habitat, architecture and constructed landscapes. Furthermore, it has recently been predicted that New York City is likely to experience a 500 year flood every 25 years, so it is imperative that we rethink the city's built environment and its relationship with water. This studio will envision an optimistic future of a Self-Sufficient New York City engaging "Hybrid Infrastructures", machines that thrive on renewable resources and aggregate to create an infrastructural landscape from which new public spaces emerge. These mechanisms' territories expand at incremental rates, propagate along the shoreline, and are distributed at strategic nodes of exchange, from which we will imagine a renewed landscape that floats, bridges, migrates and expands. We will reconstruct the complex relationship between water and people. A productive and autonomous Self-Sufficient City is born that converts natural resources into clean energy, redistributes its own waste, and reinvents its transportation system to reduce its carbon footprint.

## COASTAL STRATEGIES

We will design environments on the coast or on the water, buildings that have the ability to withstand or adapt to fluctuating water levels informed by one of three strategies. 1) Defend. We will consider the first strategy in the form of defensive barriers: engineered structures in the form of levees, walls and aqueducts. These mechanisms reduce coastal flood vulnerability by prevention. 2) Retreat. We will examine the possibility of withdrawing from the rising water levels in the form of elevated structures: highways, rails and stairs. This strategy is an elevation change; a shift away from the water. 3) Adapt. This strategy invites the water to enter the urban landscape - encouraging architecture, landscape, people and communities to acclimate to the geo-morphologically transformed condition. The results are "soft infrastructures", flexible and mutable structures that adapt to the rising sea level, offering opportunities to experience and understand aquatic ecosystems in symbiotic coexistence.

The studio is inspired by mcdowellespinosa's project entitled "Water Fuel: What if the World Ran on Water?". We wondered how a major change in climate would affect available resources, and how a technological advancement could respond and produce a radical shift in how we live. The project exploits rational necessity, examined to the point of absurdity for a possible future: a hydrogen-fueled scooter network for Manhattan.



CORNELL UNIVERSITY AAP DEPARTMENT OF ARCHITECTURE

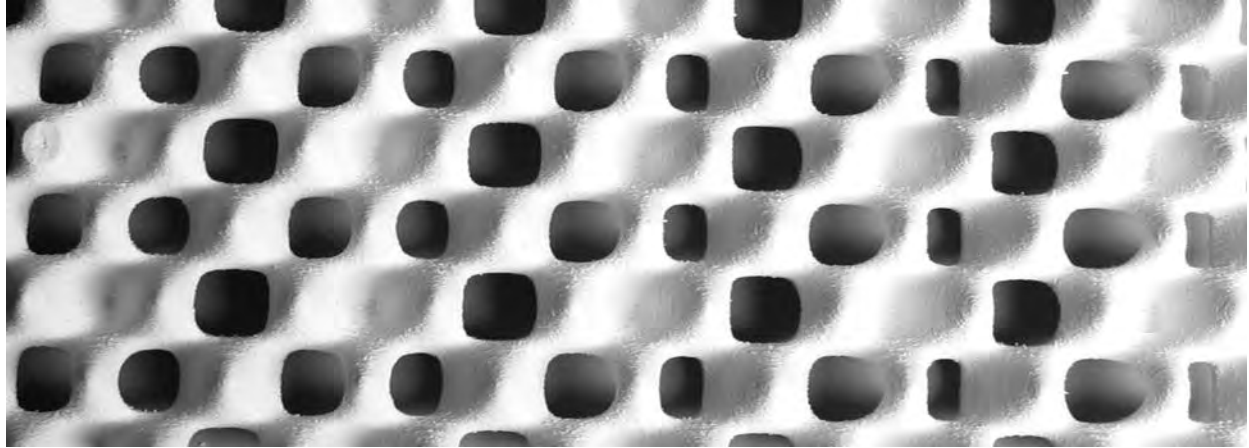
FALL 2016 OPTION STUDIO

Schedule: M, W, F 12:20-4:25pm

Instructor: Leslie Lok (wl136@cornell.edu)

## FABRIC URBANISM

### STRATEGIES FOR URBAN MAT-HOUSING AND FABRICATION



#### I. Studio Description

Negotiating between scales of architecture, infrastructure, and urban landscape, the studio seeks to develop concepts of mat-organization in order to speculate about, identify, construct, and design alternate modes of housing in systems of urban fabric. In contrary to the unvarying modernist residential towers arrayed in contemporary Chinese urbanized cityscapes, *fabric* presents opportunities for interconnected organizations of circulation, program, massing, and infrastructure. In her seminal essay *How to Recognize and Read Mat-Building* from 1974, Alison Smithson described mat-buildings as "close-knit patterns of neutral collectives open to growth and changes" analogous to urban formations characterized by an interplay of horizontal part to whole relationships in an ever malleable city fabric. The studio is interested in re-visiting fabric as an architectural and urban strategy, allowing for the development of high-density, mid-rise, mixed-use, and close-knit mat housing systems.

Digital processes will be used in both the design and *fabrication* of urban fabric. Experimentation with digital and parametric tools enables designing for (and within) a complex set of organizational, structural, programmatic, and urban requirements, as well as foster the development of both systemic and idiosyncratic architectural qualities at various scales. The studio provides an opportunity to explore mat building systems in an expanded scale and context, addressing form and morphology in digital design. In this scenario, organizational strategies cannot be seen as isolated from strategies of making. Specific material systems and industrial scale digital fabrication methods will be investigated and expanded upon to advance large scale building construction processes. The studio will tie urban morphological studies to material research in wood, concrete, and steel and explore fabrication methods such as CNC-milling, precast concrete, laser cutting, cast iron, and 3d-printing among others. Iterative testing and making, analysis of precedents, conducting material studies, and integration of digital design processes are imperative to the studio's design and research process. Introductory workshops to familiarize students with necessary software and fabrication tools will be given throughout the semester.

There will be an organized studio trip to the site of investigation in Hangzhou, China. Hangzhou's urban growth has rendered it an archetype of the contemporary Chinese city. The complex site is wedged between an expanding field of housing towers and the natural landscape of surrounding hills. It is overlaid with a set of idiosyncratic conditions resulting from its topography, historical and archeological layers, pressures from tourism, and various forms of existing small scale residential fabric. The studio trip includes visits to the site of investigation in Hangzhou, the China Academy of Art, building industry facilities, local housing typologies in both Shanghai and Hangzhou, as well as lectures on Hangzhou's urban development and various other exchanges with local institutions and architects.

Cornell University / Department of Architecture  
ARCH 4101/4102/5101/7912 Option Studio  
Mona Mahall, Visiting Assistant Professor  
Fall / 2016



### **Dark Rooms**

Exhibitions are 1:1 projects, not just places of passive representations, but spaces of active relationships, able to establish new connections between objects, ideas, and positions. They exist as a field of architectural design, reflection, and speculation, including talks, panels, workshops, field trips, screenings, music events, and publications. Exhibitions help us explore the agencies of architecture, as a cultural discipline within broader social, political, and institutional contexts. They are platforms to question present and future boundaries, capacities, and methodologies of the discipline. The studio will evolve as such a platform, allowing us to put the topic of dark rooms up for open and critical (re-)evaluation and to experiment with a series of exhibition formats and events throughout the semester. Co-conceptualized, designed, and implemented by students, the series of shows will provide not just the possibility to question the conventional architecture of the white cube, but also to construct lenses through which dark rooms can show themselves as alternative forms of architecture, architectural methodologies, and epistemologies. The objective is to set up, on three days in the semester, three diverse and dark architecture shows. Our objective is to re-conceive of dark rooms as what they have originally been: performative structures (structures with specific temporalities), there for potentially more complicated and difficult, as well as more improvised and playful encounters. As such, they resonate with political, social, and cultural concepts of opacity and darkness that will be discussed in the elective course.

# DESIGN PLAN 3.0

**Design + Play / Design + Empathy / Design + Possibilities / Design + Desires & Fears /**  
A Cornell Architecture Option Studio

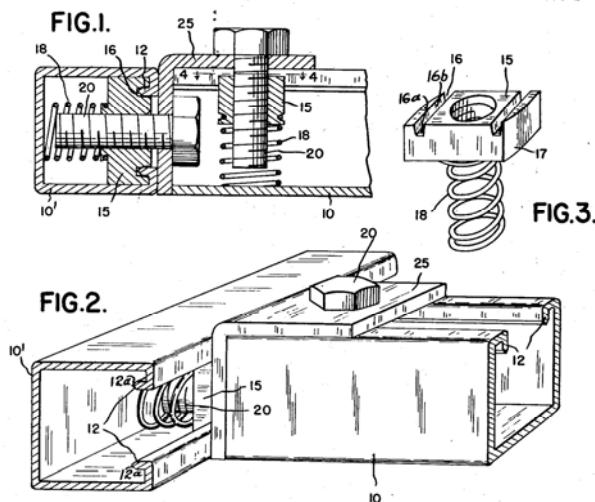


Left: page from UNHCR/NRC Camp Management Toolkit, 2008-2015



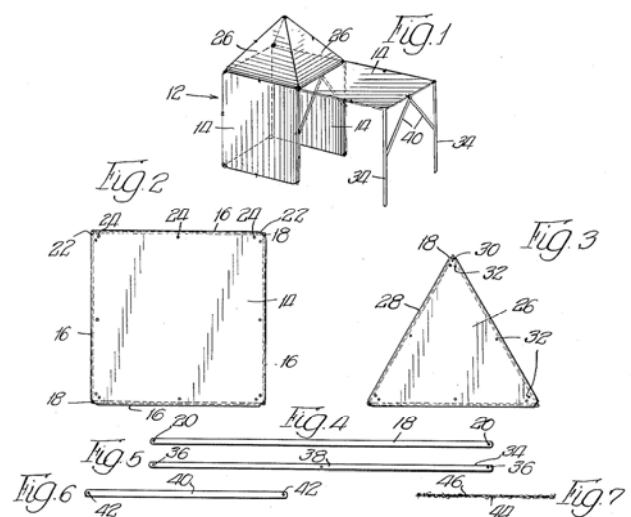
Right: front cover of Erector Set Building Toy, circa 1930

April 4, 1944. C. W. ATTWOOD 2,345,650  
SKELETONIZED STRUCTURE.  
Filed Oct. 12, 1940 2 Sheets-Sheet 1



Left: Unistrut patent for basic "skeletonized structure", April 4, 1944

Oct. 4, 1955 C. EAMES 2,719,384  
BUILDING TOY  
Filed Oct. 20, 1951



Right: Charles Eames, patent for building toy, October 4, 1955

The joy of play, tinkering and invention within limited physical parameters is at the basis of this studio. Children play with construction sets for the sheer pleasure of making, especially after all the pre-set models have been explored, and something new and unique emerges from the same set pieces. Design Plan studio will seek to reignite this sensation in people making buildings. We will partner with Unistrut (dubbed "Erector set for adults"), the designer and maker of the famous quick-assembly system – a full scale construction set. Unistrut system is now used primarily for supporting mechanical equipment in buildings; but through its nearly 90-year existence the system has been made into furniture, interior assemblies and even independent structures; and now the company is looking for other possibilities. The Unistrut catalogues contain over 20,000 pieces that the studio will explore physically and virtually. The goal is to see what the system can do beyond its prescribed intent, but still using set (and potentially, modified) pieces.



# ARCHITECTURAL AQUARELLE

visual representation/theory option studio

ARCH 4101, 5101, 7912

Milstein Plate MWF 12:20-4:25

6 credit units, letter grade

Mark Morris and guests



Premise: For the whole of the 19<sup>th</sup> century and first half of the 20<sup>th</sup> architects relied on watercolor as an important medium of visual representation. Watercolor or aquarelle washes were the only additions to India ink drawing permitted by the École des Beaux-Arts for its Prix de Rome submissions. John Ruskin, an avid watercolorist, studied the stones of Venice through his sable brushes. Le Corbusier was never without his watercolors, first used to great effect during his formative *Voyage d'Orient*. Modern artists like Wassily Kandinsky, Paul Klee, Georgia O'Keeffe, and Gerhard Richter have advanced watercoloring even as architects tended to put theirs away after the 1950s.

Today, architects, like Steven Holl, are rediscovering watercolor as a heuristic device rather than as a purely representational tool. Watercolor relies on compositional planning, layers, dexterity, technique, quickness, and creative management of mistakes; you can't erase or over-paint watercolor as you might with oils or acrylics. Willem de Kooning admitted to fellow artist Nita Engle, "Watercolor is the first and last thing an artist does." She responded, "Because watercolor actually moves on paper, it is the most active of all mediums, almost a performance art." The use of pencil and pen with watercolor is a part of its permissive and messy tradition, extending the drawing culture enjoyed by architects into a world of washes and interplay of line with color. Looking to expand upon this watercolor renaissance in terms of advancing a new design methodology, our studio will examine different methods of *reading* watercolors digitally, finding "spaces" in flat images and deriving models from them; some to be digitally printed.

In collaboration with the American Watercolor Society and a selection of guest critics, this studio will accomplish three things: it will provide basic training for students in the art of watercolor specifically geared for architects, it will introduce design methodologies using watercolor to develop as well as represent architectural ideas, and it will deploy watercoloring in the creation of an architectural project from initial sketches to final renderings and models. Our main assignment will propose a new home for the American Watercolor Society (celebrating its 150<sup>th</sup> anniversary this year) and its sister institution, the famous Salmagundi Arts Club, at the location of their current shared building at 47 Fifth Avenue.

Students will be provided with a watercolor kit, including papers. We will travel to Manhattan to visit the American Watercolor Society and have a special workshop with the celebrated architectural watercolorist [Paola Iacucci](#), founder of the BAU Institute. [Anthony Titus](#), director of foundation studies in architecture at Rensselaer Institute, will join us for a workshop. Titus' interdisciplinary practice fuses painting and architecture in a variety of registers. [Neil Spiller](#), Hawksmoor Chair of Architecture at the University of Greenwich, will offer a talk on digital interpretations of painting and drawing and come for our mid-review. Spiller's work is currently exhibited at the Royal Academy in London.



# Eco-Towers in Extreme Climates

## Arch 4101, 4102, 5101

FALL 2016

Class location: 201 Milstein

Instructor: Jerry Wells Professor  
Mustafa Abadan, Principal SOM visitor



Recent developments in tall towers have included both structural integration and formal explorations, however the next phase of innovation will bring the environmental and performance aspects to this building typology. Rather than attack the challenges of the tall building type from a formal or geometric perspective or a primarily structural focus, this studio will explore and develop environmental strategies as the progenitor of form and organization. While Tall or Super Tall towers may or may not be built in extreme/hostile environments, all of them must respond to extreme conditions generated by their height. The studio will approach tall tower design as an integrated design exercise bringing together issues of siting, architecture, structure, environmental systems, and will have a special focus on sustainability strategies that are applicable in particular to tall buildings. Initially the studio will divide into 3 climactic groups (arctic, desert, and equatorial) where students in each group will collectively analyze, synthesize, and develop strategies appropriate for these ecological conditions. In the second half of the semester the students will apply their understanding of the issues to their own designs on specific sites.