

STUDIO 2029

Speculating Speed and the High Speed Rail



It's a done deal.

With the support of California voters and the federal Recovery Act, construction on the high-speed rail began in 2012, and groundbreaking is expected this year.

Recent advancements in the budget and business plan have secured ongoing state funding and move the project forward with certainty.

Given this civic act of visionary will and its planned completion date of 2029, how might architecture engage with this impending linear infrastructure?

Can Architecture be treated as leading or alongside infrastructure rather than an after thought?

How can Architecture galvanize projects around big ideas and capture new value for public space and infrastructure?

The term BIG here may be interpreted in many ways and scales; is it an accumulation of small installations—or something of a tremendous infrastructural dimension and scope?

Could issues of Energy, Ecology, Economics and Urbanization together with Movement and Mobility be our framework for thinking about Architecture and infrastructure at this site?

What would you propose for Architecture to partner with here?

STUDIO AGENDA

In this studio we will identify issues, imagine strategies, think up new programs, and create designs to be enacted on this 800-mile long zone proposed to connect California's major regions along a single line of rail.

The agenda of this studio is to produce possible real proposals, both formal and programmatic, for the inevitable arrival of the High Speed Rail (HSR). The HSR and a selection of stations along the densely desolate space of the rail line will be our site. The class will analyze this complex and extra-large-scale physical environment through many trajectories: political, cultural, economic, historical, technological, geological and topographical. Given the challenge of large-scale infrastructural construction with regard to political, social, economic and ecological issues; we will look to develop proposals beyond the mere accommodation of vehicular traffic.

CONTEXT / HISTORY

Transportation has always shaped cities—historically water-based, and in the 20th century automobile and airport based. What will shape and extend our urban and extra-urban areas in the 21st Century?

With globalism's acceleration and the corresponding dwindling supply of resources, namely peak oil, what will the dominant mode of transportation be to sustain this process? Today's "instant age" is heavily dependent on the rapid movement of people (travel), goods (shipping), and information. In the U.S., trade and manufacturing abroad along with consumer demand brought about by globalism have significantly contributed to negative development in the form of urban sprawl, and the ad-hoc re-centering of urban areas as more open space is absorbed by the shipping industrial complex, transportation systems, and housing.

Trains

High Speed Train travel has been actively pursued and implemented in Europe and Asia, and continues to be the major mode of travel. Originally initiated by California Senate Continuing Resolution 6 and Proposition 1A, California is engaged in the planning and public approval stages to install an inland high-speed rail (220 mph) from San Francisco to LA (500 miles in 2 hours and 40 minutes) and eventually beyond to Sacramento and San Diego. Construction is planned to be complete in 2029, and will occur incrementally to ensure that each section provides independent utility prior to finishing the statewide system.

High-speed rail travel is limited by the constraints inherent to its implementation: the land. Issues such as rights-of-way—acquisition by imminent domain of privately owned land and great distances to be connected (800 miles and 24 stations)—challenge the installation of this infrastructure.

With a project of this scale, what are the unique opportunities for alternative power generation, cultural production and urbanization that may catalyze? Can these systems synthesize sustainable development and revitalize our existing urban centers? California's population continues to grow at accelerating rates each year. Most of this new growth must go into existing urban areas, but consider how these areas might change if growth were also to occur adjacent to high-speed rail.

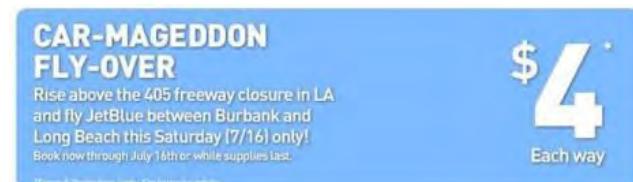
Planes and Automobiles

In order to sustain California's increasing population, transportation networks—whether in the form of rail, roads, or airports—must grow. Without high-speed rail, to build similar capacity with the existing system would require 2,326 new lane miles of highways, 115 new airport gates, and four new airport runways.

Challenging the publicly subsidized mega-project approach are other programs that envision new methods for short distance travel utilizing the country's current airport and highway infrastructure. Super light, safe, fuel-efficient jet taxis with a 1200 mile range may threaten the current organizational "hub and spoke" arrangement of the airline industry, utilizing the some 19,700 small airports in the US instead of the 503 currently offering commercial service. Autonomous Vehicles similar to "Stanley," as developed by Google and Stanford University or those being implemented in Foster's Masdar City, may soon offer driverless service to and from destinations utilizing existing roadways. Programmable vehicles could offer network-like transportation systems allowing flexibility and individualized on-demand public transit.

Both automobile and airplane based transit suggest a flexible, individualistic approach to the same need. Both are also dependent on fossil fuels and are significantly less efficient per passenger than rail travel, especially in the long-term. Could government incentives to inspire innovation in these fields overtake and render obsolete the behemoth rail-based infrastructural project?

Are these systems more reflective of the US's dominant ideology and easier to implement on a cultural, economic level than the systems modeled on European or Asian prototypes? In utilizing existing infrastructure, rather than conceiving anew, are we selling out our future to reuse what is fundamentally problematic? Are there clever methods of reuse that anticipate architecture and figure into the evolution of those systems? Is freight more than pedestrian travel likely to shape the urbanisms of the future in the globalized "instant age"? At the core, what unique new hybrids and social arrangements are suggested by these potential future systems?



"Car-mageddon" – July, 2011, Jet Blue's promotion to ease traffic within Los Angeles during freeway construction.

STUDIO FORMAT

Through comprehensive research, case studies, and design investigations, we will work to explore how the various systems of vehicular infrastructure, ecology, and architecture can be integrated in innovative ways.

Some key questions and issues are:

Infrastructural: What modes of transportation can the HSR carry and serve? How can this linear infrastructure physically carry, connect, and combine various types of industry (tourism, cargo, commerce, entertainment, culture) in innovative ways?

Site: How do the various regions along the 800-mile stretch differ, and what do these differences offer and require of your designs. Consider demographics, land use, terrain, industry, etc. To realize the full benefits of the high-speed rail, good planning at stations must drive other types of development nearby.

Energy + Sustainability: Energy and sustainability issues are essential components and leading concerns for the Studio and the studio projects. In order to take seriously this imperative, we will work closely with the environmental engineers and structural engineers at critical points in the semester to test your ideas.

2029: The first phase of construction is planned for completion by 2029. Designs should project what life will be like in this near future scenario. Speculate changes in lifestyles and social behaviors, and envision how your designs may impact California's growing population.

STUDIO STRUCTURE

Design work will progress concurrently with the research. Students will work individually or in teams to develop programs and site strategies at specific station locations in order to formulate their proposed architectural project. Each project will be developed as a thesis, and thus is defended and argued for at critical points during the semester.

Students will begin by critically mapping the length of the HSR through demographic, infrastructural, and commuting data, and will make assumptions projecting how things may change by 2029 and beyond. **The studio is required to enroll in Juan Saldarriaga's GIS Visual Studies course in order to effectively benefit from this cartographic investigation.**

The studio will make a physical site model and installation format within which projects will be conceptualized, developed, and presented throughout the semester.

By midterm, each student or team will select a specific station location to test their proposed strategy. This selected area of study will be developed as a detailed architectural proposal, adapting the standards of a proto-typical European HSR station.

For the Final Review, students will present their site strategy, the production of a scenario, and the detailed development of their test site at an architectural scale using drawings, models, mock-ups, and large-scale sections.

Travel: The studio will travel to Sacramento and San Francisco California October 2-6.

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Columbia University GSAPP

Fall 2014

Bernard Tschumi

Advanced Studio

TAs: Bart-Jan Polman (bpolman@tschumi.com), Jerome Hafner (jhaferd@tschumi.com), Dora Felekou (dfelekou@tschumi.com)

Elements and Concepts

What is architecture? Is it an idea, a sequence of spaces, a montage of attractions, a material whirl, a supplement? Is it made of a finite number of elements (twelve, fifteen, or less, or more, as described in an important exhibition at this year's Venice Biennale)? This semester intends to investigate such a fundamental question. We know many beautiful examples of architecture without windows, walls, roofs, or corridors. From the "Architecture without Architects" of Rudofsky to Terragni's Danteum, from the Infinite Space of Kiesler to the domes of Buckminster Fuller, from the Aviary of Cedric Price to Nox Water pavilions, there are many architectures that carefully bypass such elements. We also know of very mediocre buildings that have plenty of windows, walls, roofs, and corridors which most people would probably never qualify as architecture. So what is the difference between architecture and just a building?

What about another history of Architecture made of (in no particular order) Meyerhold's Biomechanical Stage, Robert Wiene's Cabinet of Doctor Caligari, Schwitters' Merzbau, Pichler and Hollein's Absolute Architecture, Constant's New Babylon, Archizoom's No -Stop City, Günther Günschel's concrete shells, Eladio Dieste's brick works, Gordon Matta-Clark's Baroque, Site's Forrest Building, Raimond Abraham's Houses, Coop Himmelblau's Open House, and Philippe Rahm's Atmospheric Houses?

And what about architecture without human culture: Termite hills, ant colonies, beaver dams or bird's nests?

In this year's studio we will make it our agenda to investigate the design of an architecture without windows, walls, roofs or corridors etc. Students will be strongly encouraged to find ways to go beyond using them, in a creative, responsible, sustainable, and forward-looking way.

Parts 1 and 2, Short Intro Exercises (3-4 weeks, presentation Sept. 24th or Oct. 1st)

15 elements were defined as fundamentals at the current Biennale: Floor, Wall, Ceiling, Roof, Door, Window, Façade, Balcony, Corridor, Fireplace, Toilet, Stair, Escalator, Elevator and Ramp. But is this a full set of all the elements that architecture consists of? What about columns and beams, for example, or, as Reinhold Martin suggested, ground or real estate? Your task in the first part of this studio will be to define which other potential fundamental elements are missing from the list, and prepare arguments for your new addition(s). Students will also be asked to identify existing projects that are not using any of the fundamentals defined in the Biennale.

For this second part of the exercise we will ask you to design a project by using only one Biennale fundamental element of architecture, and that will be given to you by lottery. Using any of the other 14 fundamentals will not be allowed for this exercise.

Part 3 (8-9 weeks)

We will ask you to design a project with a specific program, but with the constraint that you are not allowed to use any of the historical elements at all but only those elements you will have found and considered fundamentals. We hope that any difficulty you may encounter will lead you to the discovery of other unprecedented elements.

Site/Program

The site for your project will be located within one urban block 200'x600'x200' in Manhattan. Students will work in pairs determined by lottery or by preference. Individual building programs will be selected among the following:

The program(s) will be as follows and will be determined by lottery:

1. A Elemental Library
2. A Elemental Hotel
3. A Elemental Clinic
4. A Elemental Museum
5. A Elemental Brothel
6. A Elemental Cemetery

Dates

Intro: Friday September 5th 2pm (Ware Lounge)

Presentation exercise 1: Wednesday September 24th

Mid review date: Friday October 17th 1pm – 7pm

Final Presentation date: Wednesday Dec. 3th

All reviews will be held in Ware Lounge unless otherwise noted.



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REVOTING APARTMENTS

Breakfast, sleeping, body building, moving,
being entertained and raised, as globalised
urbanism

A SWEET HOME URBANISM Advanced Design Studio · GSAPP Fall 2014

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1

THE WORLD WIDE APARTMENT REGIME

Apartments have become the ultimate architecture of globalised urbanisms. If there is one single architectural device that shapes the contemporary bodies, consumptions, displacements and reproductions of the global networks of power is urban apartment it is the apartment. In cities as New York, London or Seoul apartments are leading the evolution of urban fabrics in the same way that infrastructures, public space or corporative buildings did in the past.

Urban apartments, defined as insular infrastructures of island-Bulthaup-like kitchens, on continuous wooden floors, with glassed views on blue skies and environmental events framed by stereotyped urban features; secured and entertained; and inhabited by prosperous, internationally demarcated citizens; are fostering and becoming the symptoms of both the way the World's social layering evolves, and the World's potential for geographical integration. But they are also the evidence of how architecture has mainly engaged with a very reductive, and intensively disputed, notion of the global that excludes an important part of the techno-social experiments developed in the last decades (*cosmopolitics, mondialisation, local communities movement, commons, production-consumption-multivalence, community or infrastructurally-based caring*, just to name a few).

The aim of the studio is to explore the potential for the apartments urbanism to become the vehicle to bring diversity, inclusivity and complexity to globalized urbanisms. And the potential for alternative visions of global domesticity to gain relevance by associating with the World-Wide-Apartment-Regime.

2

SWEET HOME URBANISM STUDIO DEALING WITH APARTMENTS: What will we do?

Step1

ACCOUNTING WHAT THE WORLD-WIDE-APARTMENT-LIVING IS CONSTITUTED OF

The studio will draw the way basic daily situations as having breakfast, working out or kids being taken cared are provided by the apartments material constitutions. These situations will be described in all their mobilized scales, from the use of infrastructures, land or farming (for food or energy production for instance), to the media experimenting of life references (from Sex and the City to GIRLS for instance), to the actual scale of interiors interaction. The drawing work will be based on a number of fieldwork visits and meetings with professionals that will be shared by all members of the studio.

Step2

ACCOUNTING FOR THE WAY THE WORL-WIDE-APARTMENT-LIVING IS POLEMIZED BY A NUMBER OF ARCHITECTURAL TRADITIONS

The performance and material constitution of the apartments life will be confronted to a number of architectural traditions. How would the apartments' networks evolve iwhen forced to include the local-production sensitivity? What about including the a-whole-life-lasting-home tradition? The studio instructors will introduced and fully explained more that 30 ARCHITECTURAL TRADITIONS SO FAR DISREGARDED BY THE APARTMENTS NETWORKS THAT COULD HELP INCLUDING VARIATIONS IN THE ECONOMIES, CULTURAL VALUE, SOCIAL CAPITAL, POLITICAL EFECTIVENESS AND TECHNOLOGICAL COMPLEXITY IN THE WORLD WIDE APARTMENTS REGIME.

Step3

INVENT AND PATENT

Each member of the studio will develop a number of inventions to introduced transformations in the World Wide Apartments Regime. Inventions will be developed and documented as patents of multiple applying potential.

Step4

Patents will be applied in the transformation of the World Wide Apartments Regime, developed and communicated by a single 3d modeling.

RETURN | Architecture, Biology, and Computation in the Circular Economy

Critic: David Benjamin

OVERVIEW

Cities and buildings have always been **living, breathing organisms**. But the design of architecture typically emphasizes structures that are inert, monotone, and solitary.

The **Circular Economy** is an emerging framework for a new era of design. This framework is based on an ecosystem with two types of nutrients: **biological nutrients** that are designed to circulate without unhealthy waste products, and **technical nutrients** that are designed to circulate at high quality without material impact. The Circular Economy incorporates the concepts of **resilience, anti-fragility, and industrial ecology**. It involves **open source** scientific projects and solutions that are healthy in terms of environment, finance, and society.

This framework is not about regressing to an old version of nature. It is about inventing a **new nature**.

In this context, our studio will work on reinventing design ecosystems, global supply chains, financial performance metrics, and **the way we design and manufacture everything**.

Over the course of the semester, we will work on **multiple scales simultaneously**. We will design **rules rather than fixed forms**. We will anticipate and **welcome rapid change, shifting forces, unknowable crises, and uncertainty**.

THE CENTURY OF BIOLOGY

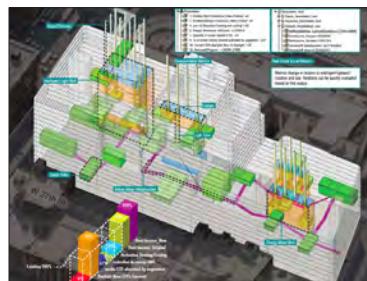
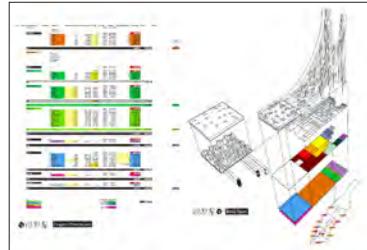
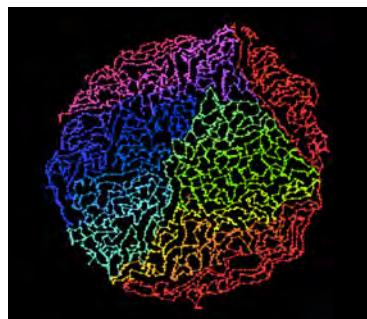
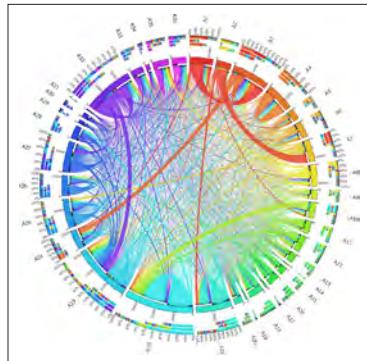
If the Twentieth Century was the Century of Physics, then the Twenty-First Century is the Century of Biology. Biological technologies are advancing exponentially. In the past ten years, it has become possible to image living systems in new ways, to **create computer models of biological cells**, to cut and paste DNA, and to calibrate and combine functions such as **growth, movement, sensing, deposition, regeneration, and self-healing** into novel organisms.

Our studio will interrogate these new biological technologies, combine them with next-generation technologies of computation and engineering, and create new building materials, a **new method of bio-design**, and new architecture that is resilient, revolutionary, and circular.

For our exploration of biological systems, we will work closely with world-leading stem cell biologist Ali Brivanlou and his laboratory at Rockefeller University. Ali will teach a custom workshop for our studio and he will lead students in **hands-on laboratory experiments utilizing some of these latest biological technologies**.

DESIGN AND COMPUTING

Recent advances in **cloud computing, digital simulation, and data science** offer new design tools for the Century of Biology and the Circular Economy. In this



Images (top to bottom): Diagram of Circular Economy in Portugal (via MM & Random Thought); Tadpole embryo development (Ali Brivanlou Lab); Data visualization of bacterial colony growth (Columbia Advanced Data Visualization Project, Danil Nagy); Pre-Circular Economy Global Supply Chain; Exploration of design space through program data (Benjamin Proof Studio, Troy Therrien); Design dashboard metrics (CBIP Studio, Kooho Jung).

studio, we will explore generative geometry, scripting, performance analysis, multi-objective optimization, and biological algorithms.

More specifically, we will push the limits of the specific software packages of Rhino, Grasshopper, Galapagos, and Dynamo. We will also utilize and explore new

custom academic software applications for modeling, simulation, optimization, and data processing.

We will use software to investigate data, to **explore a very wide potential design space**, to minimize our preconceptions, to avoid relying on old rules of thumb, and to derive unexpected high-performing results. For our purposes, computation will not be about achieving cold-blooded efficiency—but rather it will be about **enhancing our creativity**.

Yet while this studio will explore new frontiers of design and computing, no prior experience is necessary.

LIVING FACTORIES

In the Circular Economy, flows of raw materials and energy are composed to create healthy ecosystems.

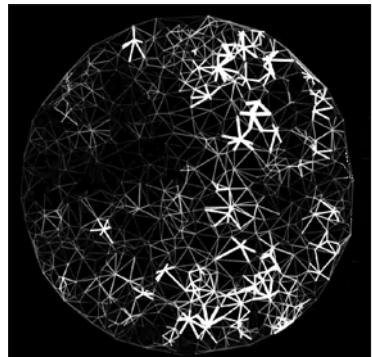
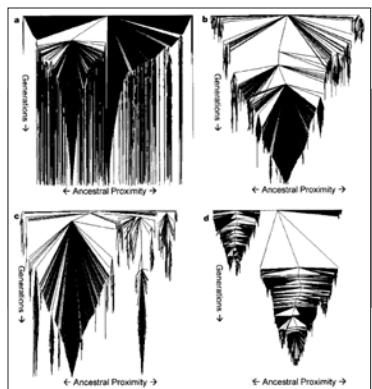
One inspiring example is mycelium-based materials that are grown from waste. This “**low-tech biotech**” approach makes use of agricultural byproducts and living organisms to produce useful objects. The process starts by mixing together chopped-up corn stalks and mycelium and placing them in a mold of any shape. In five days the mixture grows into a solid object. The physical object is similar to Styrofoam, but it involves almost no waste, no energy required for manufacturing, and no carbon emissions. In addition, the object is completely biodegradable. Styrofoam and other petroleum-based plastics take hundreds or thousands of years to decompose. Mycelium material returns to earth in 60 days. Petroleum-based plastics are linear. Mycelium material is circular.

In a broader sense, this demonstrates how **living organisms can become healthy factories**. Energy consumption can be reduced. Manufacturing waste can be nearly eliminated. Equipment from Industrial Revolution-era manufacturing can be retired. And **new objects, buildings, and cities can be imagined**.

For our work with material ecosystems, we will visit the research and manufacturing facilities of pioneering mycelium materials start-up, Ecovative Design. We will learn from the latest R&D and collaborate with Ecovative on new possibilities for the future.

INNOVATION LAB AND PILOT FACTORY IN CAMPINAS, BRAZIL

While biotechnology and computation is thriving in typical sites of world-changing innovation such as Silicon Valley, it is also growing roots in less expected locations such as interior Brazil. Due to Brazil’s advanced ethanol infrastructure, its recent investment in biotechnology, and its abundant land resources, the country is



Images (top to bottom): Bacteria growth (Eshel Ben-Jacob); Evolutionary computation (Hod Lipson, Computational Synthesis Lab at Cornell); Multi-material 3D print of new composite sheet (Bio Computation, The Living); Mycelium growth (Ecovative Design); Data visualization of animated hair (Columbia Advanced Data Visualization Project, Danil Nagy, Eitan Grinspun, David Benjamin).

poised to lead the world in clean biofuel, as well as related new manufacturing processes such as growing building materials.

Campinas, Brazil is home of the perfect biological machine for converting light and carbon dioxide into the energy source for this revolution: sugarcane. We will follow the **new frontier of biology** to Campinas, where several biotechnology start-ups have already established outposts. We will apply our explorations to the design of a **pilot factory and technology showcase building** for Ecovative Design in partnership with the government's São Paulo Research Foundation (FAPESP). Like other high-profile corporate buildings from recent history—from Eero Saarinen's IBM Watson Research Center to Norman Foster's proposed Apple Computer Headquarters—our building will serve functional goals for new work and production processes, and it will be an icon for new technologies and their corresponding corporate and political interests.

How should this building for the Circular Economy work? How should it integrate the latest clean and precise high technology of DNA with the ancient and dirty low technology of agriculture? How should it balance physical and cultural production? How should it showcase the latest innovations in biological manufacturing? What should be its public image? In the Circular Economy, what should be returned? And what is the return?

Over the course of the semester, we will apply all of our best biology, computing, and imagination to the design of innovative and viable building proposals.

COLLABORATORS

The studio will work with several organizations and companies outside of the School that are personally invested in our method and proposals. Our collaborators will include:

Ali Brivanlou (Lab of Stem Cell Biology, Rockefeller University)

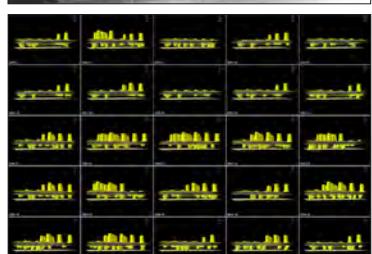
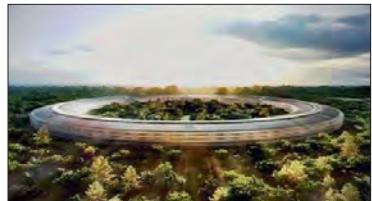
Eben Bayer (Founder and CEO, Ecovative)

Ian Keough (Principal Design Strategist and Inventor of Dynamo, Autodesk)

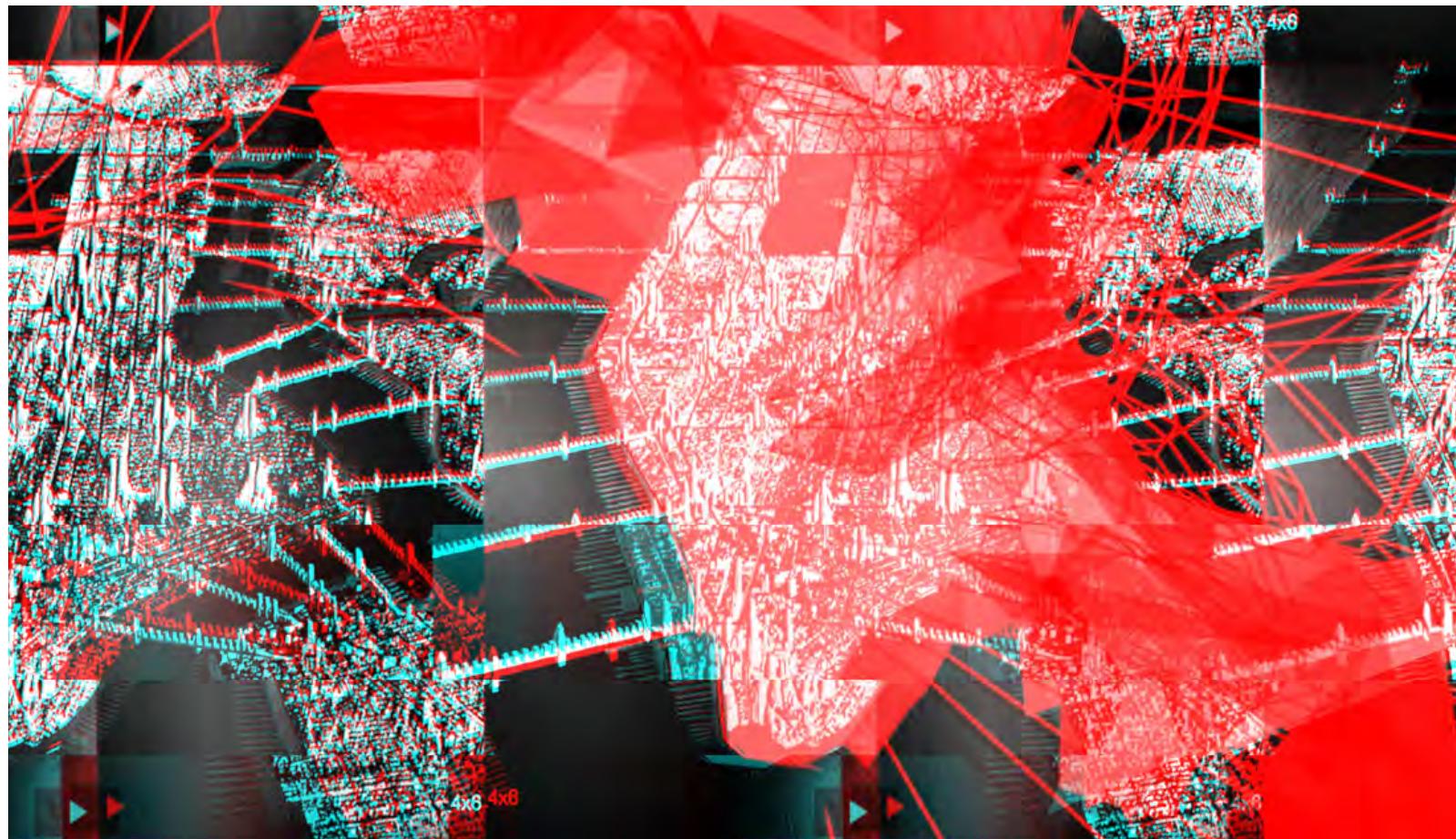
Hod Lipson (Professor of Aerospace Engineering, Cornell University)

Chas Peppers (Associate, Woods Bagot)

Michael Reed (Designer, Blue Sky Studios, and Professor of CS, Columbia)



Images (top to bottom): Campinas, Brazil; Same; Biotechnology lab using yeast as factories for biofuel (Amyris); Apple Computer Headquarters (Foster and Partners); IBM Watson Research Center (Eero Saarinen); Matrix of design solutions (Benjamin Proof Studio, John Locke).



**GSAPP Columbia University Fall 2014
Advanced Studio V, Section 005**

Habitable Bridge – Project Brief

Mega-cityification/Habitable Superbridge:
A Vision for Manhattan's Future

Critic:
Markus Dochantschi

TA:
Vahan Misakyan

Among the cities of the world, Manhattan has established its position as a Global Mega City. It is safe to assume that New York City will grow substantially in the next 50 years. While the city has been growing vertically, this studio will explore horizontal growth—connecting Manhattan to the neighbouring boroughs through a habitable “Superbridge.” Rather than functioning simply to connect two points for vehicular or pedestrian traffic, the bridge can act as a “super infrastructure”—to host residential, commercial, industrial, cultural, recreational, or religious spaces. The bridge will be connecting, intensifying, and possibly activating two very different neighborhoods.

Background and Context:

The habitable bridge as an occurrence and a result of urban densification in old European cities, has been the subject of conceptual inquiry for many recent and contemporary architects. Yet, it was not often recognized as a typology of a building in its own right, in that, rarely there were made any attempts to rethink the habitable bridge as a spatial construct that is more than the sum of its constituent elements. Is it simply an infrastructure that is colonized by the architectural program found in our cities? In our time, what does it mean to think of a structure that fuses e.g. programs of habitation and transportation, while bridging across an obstacle, two or perhaps more than two unconnected places?

In Europe, habitable bridges were common between the 12th and 17th century. These functioned as multi-programmed structures, hosting markets, homes and sometimes even chapels. Concentrations of economic or societal transactions closer/across the bridges would catalyze a range of program-occurrences densely packed on and around these bridges. Hence, the habitable bridge would reflect the complexity of dense urbanization of that period.

Currently, urban densification is observed as ubiquitous tendency around the globe, accompanied by the concentration of resources in cities. New York City and Manhattan as an established archetype of a dense urbanization is also expected to be included in this growth.

Manhattan as a place that is most connected globally is not connected well enough to its immediate neighborhood. In fact, the most recent large scale infrastructural intervention linking Manhattan to its boroughs was in 1950, with the accomplishment of the Battery Park Tunnel. In recent years, there have been several project activating the river frontage of Manhattan, but there has been no attempt to connect urban fabric on a large scale.

NYC and Manhattan, where the ideas of connection, densification and diversity are defining contextual characters, where the streams of natural and man-made affairs can create any number of obstacles, becomes a unique location to exercise this typology.

Studio Summary:

The studio will be tasked to select a location for the Superbridge, define the suggested program, and design a bridge; which will aim to effect on Manhattan's identity locally and globally.

Studio Research trips:

Each student will be tasked to research the existing urban fabric on the river front, analyze the infrastructural system connecting them, and develop a strategy to connect them. We will use data collected by the City of New York to develop a master planning methodology to inform the design for the Superbridge.

Studio Project:

The goal will be to develop a Superbridge: establishing new neighborhoods, enhancing the existing neighborhoods, and setting an example as a social, cultural, fiscal, and environmental sustainable design.

Taking the DNA from each side, the students will create a new fabric for the bridge.

The Superbridge will/can offer recreational, educational, and cultural facilities to all five boroughs. Special consideration will be given to environmental issues.

Site:

Students will select their own location for the Superbridge. The bridge will have to connect to Manhattan and while being infrastructural, the bridge does not have to solely serve as means of transportation. The students will select and establish the program for the Superbridge. It will be encouraged to think of the bridge as a mini-city, setting an example as a net zero self sufficient environment with a focus on social, fiscal, cultural, and environmental sustainability.

Phase 1: 2 weeks

In the first phase of the studio, we will dive directly into developing a master plan for a new habitable bridge typology. This methodology will equip the studio to create a new, perhaps ideal, urban DNA. We will look at the relationship between urban planning tools such as FAR, building height, street width, setbacks, etc., and the urban landscapes these create. We will visualize, concretize and test the results of different permutations of these rules with digital models and rapid prototyped physical models and animations. We will question the standard urban planning tools and, when necessary, create new tools and methodologies for ordering urban fabric and to formalize an architectural platform for a "bridge city".

Phase 2: 2 weeks

The studio will come together and collaborate on a single set of integrated planning concepts that form a cohesive master-planning proposal, with an emphasis on conceptual clarity and specific goals. This proposal will take abstract ideas for the previous phase and test them. Zoning, infrastructure, new traffic patterns and models, and connectivity to the two riverfronts will be organized and defined in preparation for the final phase.

Phase 3: 10 weeks

In the third phase of the studio, we will break up the bridge into smaller parcels and the focus will be the implementation of goals developed in the first two phases at an architectural scale. The designs will be somewhere between the scale of a neighborhood and a building. They will be developed in detail and goals will be tested against the specifics of the site and context. Again, modeling and animations will be used to simulate and analyze the architectural proposal.

The emphasis will be on the creation of a fully developed architectural scheme. We will invite environmental, civil, and structural engineering consultants, as well as representatives from large New York real estate developers (The RELATED Company), shopping mall operators (Westfield), and housing experts (HP New York).

Program: Phase 1 & 2:

The ambition is to design a Superbridge, which will become the home, workplace, and recreational place to millions of people. Using the above tools, the task will be to hyper-program the bridge and to curate a society with varying income levels, multiple religions, and opposing political beliefs. It will create a symbiosis between work and recreational spaces, between cultural and educational facilities, and between environmentally sustainable models and smart building systems. Diverse programming will be fundamental to its sustainable long-term development, while being situated in the Hudson or East River.

Schedule:

2 weeks abstract programming and massing

2 weeks developing structural/transport/social/environmental/etc. goals

2 weeks placement of program and massing.

Midterm Review (outlining findings, goals/ massing model studies)

4 weeks design: designing a typology and "building"

2 weeks final presentation preparation

Final Review (animations, models, renderings & floor plans)

Studio Research List:

- Population growth
- Development Strategies
- Mobility
- Community engagement & incremental growth
- Cultural, religious and social cohesion
- Spatial DNA of community and city
- Economic stability & asset mapping
- Global exchanges and tourism
- Availability and access to public space
- Urban narratives and memory
- Changing demographics and immigration
- New technologies and associated livelihoods
- Infrastructure and economic inter-dependence
- Waste management
- Climate and ecology, especially flooding protection

Planning Considerations:

- What is the relationship between Manhattan and the neighboring boroughs?
- How can existing urban fabric change, if connected to new urban fabric?
- How can we gather, document, and analyze a city's spatial, cultural, social, economic, and political DNA and manipulated it through addition and connection?
- Using this DNA, how can we enhance the found potential, and isolate the gaps in function without destroying the DNA itself?
- What possibilities exist for Manhattan? Can the transformation of Manhattan provide models for other countries?

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Victor Gruen, "Cityscape and Landscape," *Arts and Architecture* 72 (September, 1955), 18-19, 36.

Welter, Volker, "Talking Squares—Grids and Grilles as an Architectural Tools for Analysis and Communication", in Team 10 between Modernity and the Everyday, ed. Dirk van den Heuvel and Gijs de Waal (Delft: Technische Universiteit, 2004), pp. 181-189

Columbia University GSAPP
Fall 2014
Advanced Studio V
Lise Anne Couture TA: Bika Rebek

TEMPORARY – THE NEW PERMANENT **Pop-up City 2.0**

The Proposition

This semester the studio will explore the architectural potentials of accommodating the temporary and the provisional within a building that is also stable and permanent. – but rather than create “Flex” space we will aim to generate “Flux” space.

Instead of intervening within the agnosticism of universal space or succumbing to the straight jacket of conventional modularity of long span structures, we propose to explore an activated architecture where new types spaces and spatial relationships, both interior and urban, are enabled by formal strategies comprised of moving elements, dynamic structure, variability of enclosure and shifting porosity.

While our research will include examining relevant precedents such as Mies' concepts for Universal Space, the work of OMA, Archigram and Tschumi' among others, it is Cedric Price's Fun Palace first proposed in 1961 as a vast cybernetic and interactive cultural complex that will be our most significant reference.

Our revisiting of the concepts and architecture of the Fun Palace as an icon of 20th century architecture is intended not only to provide inspiration for the studio but also to provoke a comparison and critique for our own updated 21st c. concepts and proposals for Pop-up City 2.0.

A Primer

In 1999 a savvy California marketing group called Vacant conceived of a new marketing strategy for both new and established retail brands by capitalizing on the consumer desire for the novel, the spontaneous, the limited edition, and the exclusive by making temporary use of available and underutilized real estate.

Vacant's conception of the Pop-up Shop to provide an affordable and short term opportunity to fledgling enterprises and to enable entrepreneurs to test the product, the market, the demographic and/or the location has now become a permanent fixture of retailing strategy relying on what trend watchers have identified as a collective desire for “Massclusivity” and “Planned Spontaneity”.

While the original idea was based on the short term availability of vacant storefronts it soon evolved to include freestanding transformable structures including readymade shipping containers. Due to their provisional nature these were often installed in public spaces, unconventional locations or even derelict sites. Serving as temporary catalysts they also provided the opportunity to simultaneously exploit the potential of specific urban conditions and create new forms of engagement with communities or diverse audiences.

Over the past decade the Pop-up concept that has given way to Pop-up shops in airports, hotels and suburban shopping malls. While the freestanding shipping container once selected for its sustainable attributes as a reusable and recyclable unit as well as for its portability, scale and modularity, has now not only become ubiquitous but also a cliché.

Today, mega brands such as Starbucks have adopted the shipping container as a marketing

device that serves to signify the brand's purported allegiance with an environmentally conscious consumer demographic while expanding its market share through its new concept Container Architecture 'drive thru's'. At a larger scale developers have also latched on to the shipping container aesthetic of improvised collective Pop-up communities in order to attract a certain demographic or 'community' of creative and entrepreneurial tenants.

An example of this is the new "SuperPier" under development on the Hudson River in Manhattan. Inside the 6 story high, 560,000 sq. ft. existing pier structure a new Pop-up environment is planned with over 450 stacked shipping containers called "Incuboxes". These neutral re-purposed containers once deployed in the interest of experimentation and alternatives to the status quo retail space, have become a commodified signifier that has tethered the mutable and the temporary to a fixed and static position.

The Potential

With failure comes opportunity. Unfortunately the SuperPier's fixed arrangement of "Incuboxes" and "Anchor" spaces has come to resemble the shopping mall it purports to supplant, while the modular container that was once an enabling showcase for creative temporary ventures has not only become a cliché but has now 'boxed in' the potential for more innovative spatial occupancies and configurations.

The positive take away from the SuperPier model resides in the recognition that Pop-up "culture" has not only evolved to include Pop-ups of all kinds: from Pop-up restaurants & bars to Pop-up pools, cinemas, museums, libraries, galleries etc. but that the "clustering" of different types of Pop-up programs is the logical next step and one that has the most relevance here in terms of architecture and urbanism.

The Premise

The premise for the studio is based on identifying and tapping into the value of clustering the provisional and the temporary. Pop-up City 2.0 is a new type of cultural complex that hosts of an ever changing panoply of temporary programs and events. The cluster of simultaneous and overlapping provisional programs including leisure activities, entertainment, events, exhibitions, performances, commerce and various combinations of all of the above and more, are intended to serve a broad demographic, create a new community of active participants all the while activating its surroundings and local context. While in many respects the convergence of these programs have affinities with the Fun Palace, it also recalls the Happenings and guerilla tactics of 1970's that have continued to evolve today into the practice of temporary public art installations in non-traditional locations and the colonizing of provocative urban sites. In this case our site is a derelict urban block along an underutilized area of the waterfront in a resurgent Red Hook in Brooklyn.

The Proposal

The studio will embrace the concept of a dynamic architecture as the key concept for their proposals for a Pop-up City 2.0. The intention is to not only generate variable and unique spaces but also new spatial relationships that foster collective engagement and bridge architecture and urbanism through strategies that intelligently, systematically and methodically transform the Permanent to create the Temporary.

Studio Schedule Key Dates

First meeting: 09/05 at 2pm, Avery 300

Research and conceptual introductory exercise 1-3 weeks

Mid-term review: 10/20 1-7pm, Ware lounge

Final review: 12/8 1-7pm, Ware lounge

"The contention is that architects, more efficiently than intellectuals and scholars, can resist the devastating violence generated by the confrontation of religion, state and society [Din (religion), Dunya (world), Dawla (state) - the three major concepts developed in classical Arabic thought] at a greater scale than all societies and cultures in history have achieved thus far. This means that all important architectural achievements contribute either to strengthening the dominant ideology in any given historical tradition and political order, or to creating a breakthrough in the inherited, imposed system of values and beliefs." Mohammed Arkoun

Introduction

One of the fastest growing religions today, Islam is projected to be the biggest religion by 2025. With a demographic explosion and an expanding demand for religious buildings, the mosque was poised to become a new space for architectural experimentation and advancement. Yet when it comes to its contemporary architectural manifestation, a paradox reveals itself: though being bottom heavy population (more youth than elders), the mosque is subject to less innovation than the church which represents a top heavy Christianity.

In past Islamic societies, the mosque as a place of worship has always been closely assimilated with the daily life of the Muslim community. The social functions of earlier mosques were numerous and essential; and the mosque's physical integration in the urban fabric made it a place of cultural exchanges and not merely a space of worship.

Religion provided a global unified and unifying system of beliefs for all faiths and the mosque had a clear social and spiritual basis.

Following the decline of the Ottoman Empire (last protector of Islamic dynasty), the Western Colonial project imposed a new secular social and political order in the Middle East. The newly born nation-states soon after established their physical presence with the import and use of western modern aesthetics and ideology. Yet the mosque, when sponsored by the state, became a symbol of the political power, isolated and isolating, less concerned with the spiritual contemplation of the communities it was supposed to serve. The continuous and steady secularization introduced by modernity eroded the role of religion (and consequently the mosque) as a source of meaning for human existence. Unlike the encounter and assimilation of modernity in Western nations, the historical rupture in the Arab and Islamic world did not substitute the decaying of the religious beliefs with an internal meaningful alternative.

Today the loss of legitimacy and unravelling of the Party-Nation-States we witness in the Middle East, fueled by decades of Western support and interventionism, is the natural continuation of this historical phenomenon. The reactionary rise of religious extremism to fill the void (with little interest in religious intellectual thinking) is solely driven by a distorted nostalgia for a distant past. The mosque became a political sanctuary while its role as a place for debating social and religious issues had long dissipated.

In this breakdown of the system of beliefs and the present ideological confusions, the mosque as a building type stands today, to be relevant neither to Muslim tradition, nor to modern life and culture.

To affirm the claim that Islam is inherently unable to separate politics (State) and religion, however, is historically and theologically inaccurate as demonstrated by early Islamic periods. Up to the 11th Century, Humanist pluralist culture (in Science, Art, Literature, Economic systems) had flourished in the Islamic urban milieu of Iraq and Iran, where religions were understood as collection of cultures and not as separate dogmas. This 'modern' way of thinking and the wealth of knowledge it produced eventually fed into the rise of the Humanism of the Renaissance and amplified the reason of the Enlightenment in the western cultures.

Given this rich historical framework and with the ongoing conflicting visions in Muslim societies, a need to re-imagine and reinvent the mosque role and typology becomes ever more important.

The Typology

In Classical Islamic thought there are two opposing concepts that are concerned with the dissemination of religious knowledge: the first is Taqlid (the strict reproduction of orthodox teaching) and the second is Ijtihad (the personal intellectual endeavor to seek new original solutions for new problems). In the Architectural production of mosques, Taqlid had set the ground for a pure imitation of the seminal historical forms of that building type. Ijtihad, less tolerated in the dominant traditional Islamic thinking today, would instead open a space for interpretation and experimentation. The studio is to address the archetype of the mosque within Ijtihad mental framework:

No specific archetype for the mosque was ever dictated in the Islamic Religious texts. The first mosque, that of the Prophet Mohammad in Medina (KSA) in the 7th Century, is assumed to have been a simple rectangular structure, with a palm tree as shade for the worshippers who prayed in parallel lines. The main known components of the mosque (dome, minaret, mihrab, and courtyard) are not intrinsically Islamic (especially if one understands Islamic cultural production as a continuation and a mutation of other cultures and civilizations). Instead these features are arbitrary, sometimes appropriated forms that were made sacred by collective functions over time and hence can be changeable and re-interpreted based on contemporary thoughts. On another level, gender separation for instance, deeply entrenched in the architecture of the mosque (and the Islamic public space), follows a similar devolving history and hence can be challenged as well.

On the Urban level, modern and emerging cities in the Middle East offer a desolate urbanism that lacks the traditional and essential physical cohesion of the mosque to its own surrounding. The mosque today has to adapt and transform this urban dilemma by either rejecting its centrality to a given site and context or accepting its physical autonomy while achieving its extension into the communities it serves by other means.

The Program

Unlike the church, the mosque has historically demonstrated the potential to combine and switch in-between a secular and a religious function without losing its sacred qualities. From the two possible translations of the word Mosque into Arabic (*Jamee* or *Masjid*), a difference is emphasized between the Mosque as a community center (*Jamee*, place of gathering) and the Mosque as a purely praying facility (*Masjid*, place of prostration). Given the need to reinvent the role of the mosque in contemporary society, students will be asked to research and formulate programs that could be added to its religious function. A new hybrid and contemporary **expanded** understanding of its program should be put forward; one that redefines the mosque beyond its current limitation to liturgical functions to become more attuned to the functional needs and spiritual desires of contemporary societies.

The City

Istanbul was the capital of the last Islamic, Ottoman Empire that spread from Southern Europe to North Africa over a period of six centuries. Following its decline and eventual defeat in WWI, a new state of Turkey emerged as one of the first Muslim societies with a strong secular foundation. For almost a century religion has been rendered invisible by the secular state in its operations – in education, culture, economy etc. Parallel to the ‘religious revivalism’ in the region, the conservative Islamic class of turkey – aspiring middle class - is currently becoming more visible. This has produced a shift in the political landscape that still needs to find its proper and critical religious architectural representation.

Geographically, Istanbul is split by the Bosphorous strait into two parts, onto two continents. On the European side peninsula, south of the Golden Horn, stands the hilly old Ottoman city with its majestic silhouette of domes and minarets, yet depressed by the weight of its own history. To the North and the East, the modern city (since the 1950s), is still expanding to absorb the rising middle class, while it continues to struggle to find its own urban identity.

Between the East and the West, tradition and modernity, Secularization and Islam-ization, Istanbul offers itself as an ideal ground for this architectural experiment.

Field Trip: Istanbul

A trip to Istanbul, accompanied by the Critics, will be conducted early in the semester. In addition to visiting seminal selected buildings and mosques, we will conduct a series of meeting with key figures and scholars in collaboration with Studio X, Istanbul. Multiple potential sites have been identified in the city, which will be further examined and selected from, during the trip.

Mosque Suggested Built Up Area: 7500 m2 – detailed program to be supplied at a later stage

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7. Ihsan Fethi, 'The Mosque Today', in: Sherban Cantacuzino (ed.), *Architecture in Continuity: Building in the Islamic World Today* (New York, 1985)
8. Renata Holod and Hasan-Uddin Khan, *The Contemporary Mosque: Architects, Clients, and Designs since the 1950s* (New York: Rizzoli, 1997)
9. Nader Ardalan, 'The Visual Language of Symbolic Form: A Preliminary Study of Mosque Architecture', in: Jonathan G Katz (ed.), *Architecture as Symbol and Self-Identity* (Philadelphia: Aga Khan Award for Architecture, 1980)
10. Gulru Necipoglu, 'Introduction' in *The Age of Sinan: Architectural culture in the Ottoman Empire*. Reaktion Books 2010
11. Orhan Pamuk, *Istanbul, Memories and the City*. Vintage; Reprint edition 2006'
12. Sibel Bozdogan, *Modernism and Nation Building: Turkish Architectural Culture in the Early Republic*

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The Urban Imaginary Project

Barcelona's Moveable Feast: a Post-Crash Urban Imaginary

Columbia University GSAPP, Advance Studio

Fall 2014, Mondays, Wednesdays and Fridays 2:00-6:00 PM

Critic: Cristina Goberna (cg2322@columbia.edu)

Teacher Assistant: Andres Mecera (aem2220@columbia.edu)

Imaginaries are historical constructions defined by the interactions of subjects in society...and the set of values, institutions, laws and symbols that are common to a particular social group.¹

Jean-Paul Sartre



Architectural Agonism. The Construction of Urban Imaginaries

This studio belongs to a collection of courses that explore the potential of *Agonism* to opening unexpected paths for the identification, confrontation and discussion of current polemics in architecture. It takes architecture as a *Semi-Autonomous* field, studying not only its disciplinary advances but also their reverberation in society at large. It vindicates the role of the architect as a *Public Intellectual*, that is, a designer that participates in the public debates that shape the city, someone able to risk his or her own position by questioning institutions, received ideas or the general status quo.

The Urban Imaginary Project studies the construction of the desired idea of cities that their inhabitants consciously produce—through their urban configuration, policies, disciplinary discourse and certain architectural typologies—before and after relevant events in history such as revolutions, wars, openings to the market or economic crashes among others. The concept of *The Imaginary* has been studied by authors like Jean-Paul Sartre, Michel Foucault or Cornelius Castoriadis. Charles Taylor defines *Modern Social Imaginaries* as “the ways people imagine their social existence, how they fit together with each other, how things go on between them and their fellows, the expectations that are normally met, and the deeper normative notions and images that underline these expectations”². Yet if we talk about *Urban Imaginaries* we could say that they are the construction of the chosen idea of cities that their inhabitants intentionally produce, a system conformed by social relations, architectural operations, urban policies and the ideology behind them.

¹ Sartre, Jean-Paul, *L'Imaginaire: Psychologie Phénoménologique de l'Imagination*, Paris: Gallimard, 1940.

² Taylor, Charles, *Modern Social Imaginaries*, Duke University Press, Durham, 2004

Spain, a Post-Crash Urban Imaginary

In few places the 2008 financial crisis hit harder than in Spain. A country whose architectural quality is highly recognized and was the pioneer in often questionable city branding by star-architects —Frank Gehry's Guggenheim Museum, the Museum of Contemporary Art in Barcelona by Richard Meier, The City of Culture in Santiago de Compostela by Peter Eisenman etc.—needs to reinvent its *Urban Imaginary* model. A country with one of the most complete architectural professional educational systems sees a whole generation looking for opportunities abroad. A land with a deep tradition in the design of public space, can barely fund it any longer. A place, with the best quality housing projects and the lowest kind of speculative real state products has thousands of empty dwellings and an intense social drama of foreclosures. However, as Spain seems to drown in its worst economic crisis since its civil war, it is lately the focus of attention given that it seems it has turned its architectural and urban problems in opportunities for reinvention.

Barcelona is the perfect example of a city that has constantly reinvented itself through diverse *Urban Imaginaries*. These images were executed though big scale events as the 1929 World Fair (the modern city), 1992 Olympics (the sports city), 2004 Universal Forum of Cultures (the culturally diverse city) or long term operations as the construction of a fake gothic quarter (medieval city), the recuperation of the *Barceloneta* neighborhood (the seaside city). Yet, the imaginary of Barcelona that might remain in our subconscious is that of a city driven by culture, pleasure and a celebratory spirit.

Barcelona Party Scene, Controversies and Possibilities

In times of economic depression there are two things that flourish: the party scene and the banks. Following the tradition of decadent hedonism after a crash that other cities encountered in the past as Berlin in the 20's or New York in the 70's, Barcelona's parties are in excellent shape: From the past cafes, absinthe dens, cabarets, prostitution houses, dance halls or music halls to the recent rooftop parties, transvestite shows, bars, cocktail places, electronic music festivals or the ancient traditional seasonal festivities of fire, music and street theatre. The popularity of celebratory spaces contrast with its bad reputation among politicians and designers. Never a typology of spaces have been as ignored by architecture as loved by the public, who inhabit them with a fanatic sense of amusement. Yet, the scale of the Barcelona's *Fiesta Scene* its jeopardizing its image. There are current constant street demonstrations in the city against the drunk tourism that's fills its most popular neighborhoods. The citizens are finally rebelling against the official Urban Imaginary created by the government.

An International Consulting Agency of Secret Agents Infiltrated in Barcelona's Party Scene

This studio will operate as an international urban consulting agency, that is, as a group of experts or independent observers able to deliver a diagnosis and potential future *Urban Imaginary* based in urban configurations, programmatic strategies and architectural operations.

We will travel to Barcelona and briefly to Madrid during the third week of September. Our base of operations will be in MAIO headquarters in Gracia neighborhood: An architectural office, gallery and soon research center and the editors of the magazine *Quaderns de Arquitectura i Urbanismo*. Our daily schedule will include field work at night, group studio, work, the *Party Lecture Series* with Santiago Cirugeda (*Urban Recipes*, Sevila), Ivan Lopez Munera (art historian, journalist and curator, Madrid and New York), Pol Eteve (Architectural Association, London), Daniel Fernandez Pascual (Cooking Sections, London and OfficeUS, Biennale de Venezia), Urtzi Grau (Director of Master of Advance Architectural Design UTS, Sydney and Co-Director of Fake Industries Architectural Agonism, New York), MAIO (Barcelona), AIXOPLUC (Reus) among others; visits to specific actors in the reinvention of the architectural practice after the crash (Ethel Baraona, PKMN, Zuloark etc...) and *Vermut Interviews Series* with different guests with roles in the construction of Barceona's Party Urban Imaginary.

Critical Pedagogy. Collaboration versus Competition

This studio will work with a methodology based in Critical Pedagogy and in the idea of **less competition and more collaboration** between its participants. The students will be trained to develop independent critical skills and work agonistically, that is, taking radical positions and defending them with their designs, graphically, orally and in the general construction of strong and well-studied arguments. Approximately once a week the class will celebrate pedagogical experimental sessions that will include: acting workshops, a wide range of time constrained games/exercises, exhibitions of their work, dates with a wide range of books, excursions to architecture and art galleries, lectures, debates etc. The students will develop in parallel and with the same intensity their designs, a personal research in architectural representation, exhibition design skills, model making, oral presentation abilities, the construction of arguments and how to become a critic in an architectural jury.

The students that are interested in this studio should quickly investigate if they require a visa in order to travel to Spain, and in that case, if it is possible for them to acquire it in approximately one week and a half. In the next page you will find a list of nationalities that do NOT require a visa to enter Spain.

IF YOUR
HOME COUNTRY
IS NOT IN THIS LIST,
YOU **WILL NEED** A VISA
TO GO TO SPAIN:

A ALBANIA ANDORRA ANTIGUA AND BARBUDA ARGENTINA AUSTRALIA AUSTRIA	E EL SALVADOR ESTONIA	J JAPAN	S SAINT KITTS AND NEVIS SAN MARINO SERBIA SEYCHELLES SINGAPORE SLOVAKIA SLOVENIA SPAIN SOUTH KOREA SWEDEN SWITZERLAND
B BAHAMAS BARBADOS BELGIUM BOSNIA AND HERZEGOVINA BULGARIA BRAZIL BRUNEI DARUSSALAM	F FINLAND FRANCE	M MACAU MACEDONIA MALAYSIA MALTA MAURITIUS MEXICO MOLDOVA MONACO MONTENEGRO	T TAIWAN
C CANADA CHILE COSTA RICA CROATIA CYPRUS CZECH REPUBLIC	G GERMANY GREECE GUATEMALA	N NEW ZEALAND NETHERLANDS NICARAGUA NORWAY	U UNITED KINGDOM URUGUAY USA
D DENMARK	H HONDURAS HONG KONG HUNGARY	P PANAMA PARAGUAY POLAND PORTUGAL	V VATICAN CITY VENEZUELA
	I ICELAND IRELAND ISRAEL ITALY	R ROMANIA	
	L LATVIA LITHUANIA LUXEMBOURG		

Working Space: Frank Stella's Norton Lectures

An Architectural Turning Point

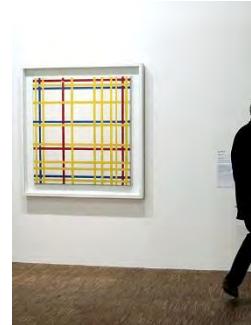
Fall 2014 / Advanced Architectural Design Studio
Michael Bell, Professor of Architecture, Columbia University
Andrew Maier, Studio Assistant Critic, Technology Workshops

"What Leonardo does, as no one else could do, is to spin off the shadows of modeling, creating a sense of atmospheric softness that gives way in turn to a kind of magical sculptural impressinism. The result is a pictorial "rounding" of space that paves the way for Caravaggio and becomes, at the same time, part of our basic spatial vocabulary for judging great painting." Frank Stella, **Working Space**

Arid-Plasticity



Working Space: Our studio will take a series of lectures given as the Charles Eliot Norton Lectures by the painter Frank Stella at Harvard University in 1983-84 as the outset for our work. The series of six lectures were compiled and presented as the book **Working Space** in 1986. Stella's lectures had a strong relationship to architecture and to a mechanics of pictoriality, that while noted at the time as potentials for architecture design, were also countered widely by a seemingly more dominant realization of architecture by way of linguistics. Stella was exploring a way to achieve a pictorial plasticity in painting (*again* and in new ways) after modernism's gradual and seeming total flattening or compressing of pictorial space. Part of what was so powerful in the book's timbre and detail was the immediacy in the analysis of other painters—and a kind of authority of tone that came from Stella's own practice. On Mondrian, for example, and the painting **New York City**, Stella saw a total eradication of a bodily plasticity: *"It is here that Mondrian rattles the bones of human configuration for the last time; it is here that the white rectangle steps out of the background landscape into its own space."* Stella's own work was presented in the book—from his own early student experiments in a flattening of space (and figure) to his then newest quasi-sculptural paintings. He orbited back toward the Renaissance and as far forward as urban graffiti looking at ways in which painting begat a more palpable and occupy-able plasticity—a place for a body that was itself plastic. The palpable way space was described had, it seems, been lost in architectural criticism of the time—in its place a series of techniques often based in image or figure but rarely material or space. Stella's descriptions of space resonated, however, with a quality in cities at that time—a blankness and flatness of experience that architectural theorist were beginning to describe as “*terrain vague*”—a space where the presence of a person was real, but hardly acknowledged in the no-man's land of near abandoned spaces between building as isolated *capital-instruments*. Ignasi de Solà-Morales work on the term *terrain vague* arrives concurrent to Stella's lectures; Mike Davis “City of Quartz” is published eight years later. Davis' reading of the political mechanics that created and sustained an anomie of the street level experience in Los Angeles were never related to Stella's work but together, Stella (Working Space) and Davis with Solà-Morales provide a sense of painting and architecture diagnosing an arid yet barely plastic urban life where the dissipative quality of space needed but could not (as yet) sustain a new plastic direction. This space was shored up by plastic spatial tropes, literal policing and intimation of real and implied surveillance. If Stella seemed to be describing this aridity and trying to create something new from it—in part by going back into history and bringing forward a renewed and transformed mechanics of the plastic (see the passage re. Leonardo above) he also conflated it with his own experiments in flatness. His work traced a vivid “hot-blooded” structure that was simultaneously laced with emptiness as it was literally becoming spatial and quasi-architecture, quasi-sculpture. The work seemed to have a kind of evaporative quality—plastic and plasticity drained away at the same time. Stella had a path into a NEW plastic architecture that seemed to not have been understood by architects--this is our beginning.



City of Quartz



Mike Davis

Author of Ecstasy of Power
WITH PHOTOGRAPHS BY ROBERT MARKOV



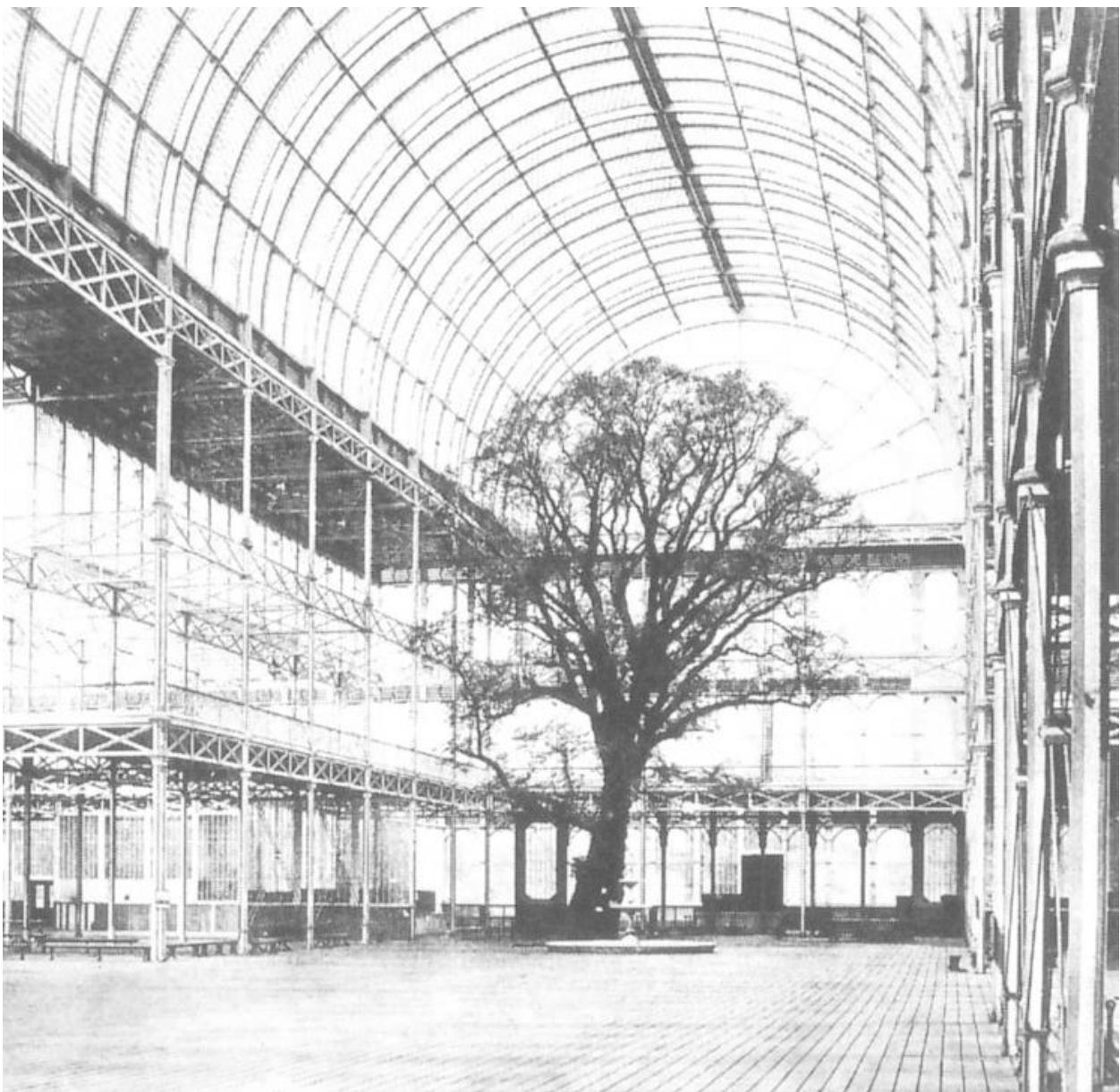
is published eight years later. Davis' reading of the political mechanics that created and sustained an anomie of the street level experience in Los Angeles were never related to Stella's work but together, Stella (Working Space) and Davis with Solà-Morales provide a sense of painting and architecture diagnosing an arid yet barely plastic urban life where the dissipative quality of space needed but could not (as yet) sustain a new plastic direction. This space was shored up by plastic spatial tropes, literal policing and intimation of real and implied surveillance. If Stella seemed to be describing this aridity and trying to create something new from it—in part by going back into history and bringing forward a renewed and transformed mechanics of the plastic (see the passage re. Leonardo above) he also conflated it with his own experiments in flatness. His work traced a vivid “hot-blooded” structure that was simultaneously laced with emptiness as it was literally becoming spatial and quasi-architecture, quasi-sculpture. The work seemed to have a kind of evaporative quality—plastic and plasticity drained away at the same time. Stella had a path into a NEW plastic architecture that seemed to not have been understood by architects--this is our beginning.



Architecture: Working Space

Our studio will work from and into **Working Space** and add to this important study in the practice of art and practice of history/criticism a component of our field's material/spatial history. Instead of beginning with a *site*, with a *program* or even with a *city* in particular we will begin with a historical prototype of architecture that hopefully can instigate a new program, a new site

or a new sensibility. Like Stella we will cast our focus back into history and jump forward again to our moment. The studio will explore a moment in architectural history when architecture's most essential means of material, of structure and of enclosure fused with a social and progressive technical agenda—and in effect altered how we see ourselves in relation to the world by re-framing our relation to inside and outside; to nature but also to science and money. Our first case study (of three) will focus on the iron (and later steel) and *glass pavilions* of the 19th century. We will seek to re-define essential aspects of architecture's plastic and material history; to remobilize them towards a new reading of techniques that we often see as intrinsically architectural.



Case Study 1

Joseph Paxton, Crystal Palace, London, Iron and Glass, 1850-51

Before Site, Before Program

Preceding program and overt function the *glass pavillion* has long served as a technical instrument—a work of architecture for which function was not expected or demanded yet which was understood to serve as a barometer of progress. In the 19th Century such buildings were manifest as progressive technical achievements—worthy of investment (by government) and understood to be signifiers of progress and indeed of a dominance over nature. But today as we look at technical achievement in architecture we seem to measure it against valuations as forms of investment and money. Technical methods allow control or optimized relations to money—to investment—as the final horizon. Our studio will investigate a twentieth and twenty-first century version of the *glass pavillion* and imagine new potentials for this technology's relation to natural surrounding—to nature—in a building that will initially have no function, no overt program other than to situate itself in a natural environment. Our two case studies are not quite what they seem, however, and we will study their mechanics and their materiality and attempt to see their implications in parallel fields of structural/thermal concepts. During the semester our work will evolve from analysis to proposal and from siteless to sited.

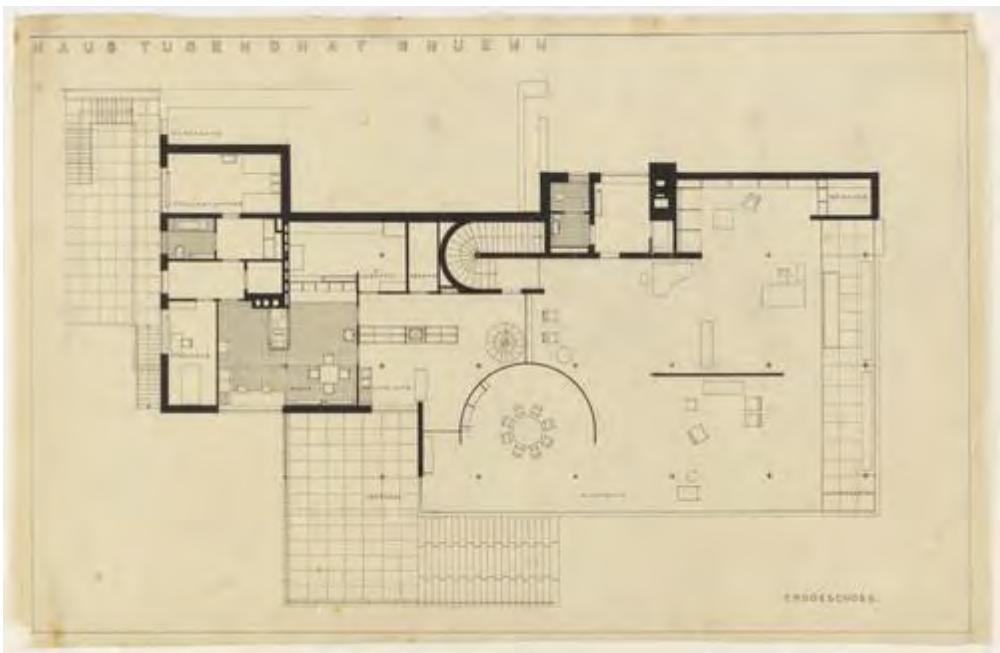
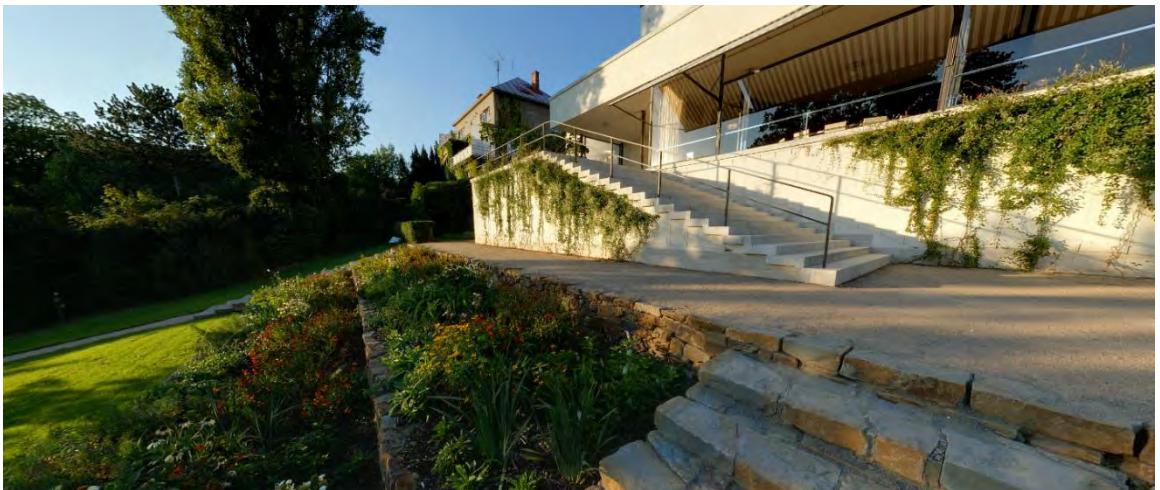
The studio will include guest lectures and a great deal of reading and analytical work. We will also have the support for a recent graduate. Andrew Maier is working on glass structures at Robert Heintges Associates. Andrew Maier studied with Zachary Kostura and myself and also was a member CBIP while at Columbia. We will also make use of the four volumes from the Columbia Conference on Architecture, Engineering and Materials. We anticipate a working meeting with the artist Frank Stella. We will either meet with or SKYPE with Edwin Chan, partner at Gehry Partners, and project architect of one our case studies.

Case Studies: Inside Out / Material Weight / Material Experience.

Case Study 2

20th Century: Mies van der Rohe, Tugendaht House, Brno, Czech Republic, 1930: A winter garden or solarium inside the house can be seen in the background of the photograph. <http://www.tugendhat.eu/>





Plan Drawing: Mies van der Rohe, The Museum of Modern Art, 1928, Ink and Pencil on Paper

Case Study 3:

21st Century: Frank O. Gehry Associate, Louis Vuitton Foundation for Creation, Opening 2014.
<http://www.fondationlouisvuitton.fr/>



Source: Foundation Louis Vuitton website: "The Fondation Louis Vuitton will open its doors in Paris in 2014. This extraordinary space for art and culture was conceived by architect Frank Gehry as a vessel whose sails soar amidst the trees of the Bois de Boulogne. The building's construction represents unprecedented technological challenges. The building counts twelve immense glass sails, joining a longstanding tradition of glass architecture in Paris, including the Grand Palais. Frank Gehry also drew inspiration from the Palais d'Hiver and the Palmarium, two glass and steel structures that graced the Jardin 'Acclimatation' in the 19th century, bringing Parisians opportunities for discovery and elegant promenades."



The Foundation for Creation under construction: glue-lam beams span long distances canted to one side. Requiring support from immense steel struts, the network of structure is both pushing upwards and collapsing back to earth. The workers use cables form exaggerated diagrams of the glue-lam tendency to sag. Why are they canted to their sides?





A6850x Advanced Studio 5 / Urban Ecology Studio
Richard Plunz, Architecture Critic; Patricia Culligan, Engineering Critic; Kevin Lê, Adjunct Faculty

Pier 26, New York: The Climatarium of To-morrow



INTRODUCTION

CLIMATARIUM (n.). A public hall comprising devices for presenting global and localized interrelationships between climate and society; and for simulation of future effects on same; for purpose of furthering scientific understanding, public instruction, and measures for climate resilience.

NB: for New York City comprising variants on estuarium and urbanarium concepts as relates to climate change.

Analyzing the hard facts and conventions of science for its time, science fiction has always envisioned the role of society in relation to what could remain of what we know as Earth. In *The Drowned World* (1962), J.G. Ballard imagines a post-apocalyptic and unrecognizable London. *The Sea and the Summer* (1988) by George Turner seeks to understand the dynamic forces of climate change, unemployment due to exponential automation, the dissolution of Melbourne's monetary system and a division of society segregated by the rich and poor. More contemporarily, *The Day After Tomorrow* (2004) by Roland Emmerich depicts the global cooling and dawns on the era of a new ice age and, in certain depictions, New York City is covered in snow up to the torch-height of the Statue of Liberty. In short, many of these novels and cinematic films may be understood as a manifesto to the urgency for consideration towards social and environmental issues within the metropole. How can we design for a city that relies heavily on the foresight of what is to be expected in the future? For instance, in response to global warming, the melting of snow and ice has increased the global mean seal level, flagging cities to revisit their waterfront guidelines.

In October 2012, Hurricane Sandy reminded us of the impacts of climate related disasters, expedited the City's Special Initiative for Rebuilding and Recovery (SIRR) and resulted in fund allocation, both Federal and State agencies, to establish programs like *Rebuild By Design*, *New York Rising*, and the Science and Resilience Institute in Jamaica Bay.

The Climatarium studio framework encourages a critical investigation and re-interpretation of climatic forces in densely urban cities; and the increasing roles of data, mobility and access as facilitators of sustainable urban form and lifestyle. The studio offers flexibility in the various lenses through which participants can examine the challenges of sustainable urbanization. The specificities of the studio site will be used as a foundation for developing design proposals that can address climatic challenges faced world-over in post-traumatic urban typologies in need of improved resilience.

STUDIO PROGRAM

At a literary level, our programmatic query is already being explored by numerous writers from Bill McKibben with *The End of Nature* (1990) to Elizabeth Kolbert with *The Sixth Extinction* (2013). Thus, in a sense, the Climatarium reflects a present day merging of the worlds of science and science fiction around the challenge of visioning for a general public the mechanisms and consequences of our changing global ecosystem. In this task it will integrate on-going scientific research in the natural sciences with its counterpart in the social sciences. Particular emphasis will be on metropolitan ecological change within the context of our urbanizing planet; and specifically within the local context of New York City. Programmatic approaches to this challenge will be developed by each student and/or team. As designers we will be concerned with the spatial container, programmatic elements and sequence for this public explication, on Pier 26 in Tribeca.

STUDIO SITE

Context Situated on the Hudson River in New York City, Pier 26 is located at the far west end of North Moore Street in Tribeca and is accessible by foot, automobile, subway, bus or bicycle. The Tribeca section of Hudson River Park extends 1.5 miles from Canal Street to Chambers Street and includes Piers 25 and 26, as well as ten acres of open land and seven acres of recreational amenities to date. Currently nearing completion in this area is a new boathouse/restaurant building on the eastern end of Pier 26, expected to open in 2014. Within short walking distance is a hub of new public space development, most prominently related to the High Line, which has spun off new residential and cultural activity, as well as new business enterprise including the new headquarters for Google. The Climatarium can be considered a companion node to the nearby new Whitney Museum designed by Renzo Piano.

Notably, both the Hudson River Park and its urban hinterland suffered considerable damage from Hurricane Sandy. Remediative redesign of the Park and the design of the new Whitney had to be revised due to damage to the construction site. The Climatarium site itself will serve as learning laboratory relative to urban climate change impacts.

STUDIO PROJECT CONSIDERATIONS

Each student/team will be required to produce a detailed spatial and programmatic design for the Climatarium on Pier 26. Integral to this product will be consideration of its public space function within the context of Tribeca and Lower Manhattan. Apart normative **graphic representation**, a scale **physical model** of the Pier design will be integral to the project development and final presentation. Design considerations will include:

- Natural science and environmental policy topics focusing on the broader environment, such as how climate change, sustainability, renewable energy and nonpoint-source pollution impact the urban and estuarine systems and the boundary between.
- Integration of science and research activities with an education and outreach mission aimed at reaching a diverse audience including both the general public (including walk-in visitors) and organized school and other groups.
- An operationally self-sufficient spatial container that integrates an emerging national emphasis on the resilient built environment

Given the prominence of initiatives on the future of Pier 26, the studio will entail presentations with representatives of the various public interests involved; and your work will have a life beyond the end of the semester.

STUDIO ORGANIZATION

Urban Ecology Studio: This year's studio is the tenth in a series that explores collaboration between GSAPP Architecture students and students in the School of Engineering and Applied Science. This year, seven advanced students in engineering will work with seven M.Arch / AAD students on the Climatarium project. The Architecture students will have primary responsibility for a building scale proposal; and the engineering and planning students for advanced environmental research. Both come together in the programming assumptions. It is anticipated that multi-disciplinary exchanges will continue throughout the semester and that the work of both sides will come together in an exhibition and publication.

SUPPORTING RESOURCES

The Studio will be supported by resources provided by the Earth Institute at Columbia University via the Earth Institute's Urban Design Lab.

CLIENTS and COLLABORATORS

- Hudson River Park Trust
- New York Department of Environmental Conservation (NYSDEC)
- New York Department of State (NYSDOS)
- Earth Institute Lamont Doherty Earth Observatory

FIRST DAYS

Friday, Sept 5: 2pm, **First Meeting**, 300 Avery

Monday, Sept 8: Site Visit to **Pier 26, Whitney Museum, High Line**

Instructor: Marc Tsurumaki
Asst. Instructor: Cyrus Peñarroyo

Paradoxical Efficiencies

Efficiency and Exorbitance in Architecture

Introduction

"It is obvious that the utilitarian role of an object never completely justifies its form, ... that the object always exceeds its instrumentality. Thus is it possible to discover in every object an irrational residue..."

-Caillois

Efficiency regulates architecture in a multiplicity of forms – witness net to gross ratio's, fast track construction, the aesthetics of the minimal, net zero buildings, life cycle costing, and mass pre-fabrication to name just a few. There is structural efficiency, spatial efficiency, economic efficiency, energy efficiency, material efficiency, efficiency of construction and so on. Efficiency is seen as a moral imperative. Efficiency is a requisite precondition of good design. Efficiency is ingrained in the language of architectural discourse. Efficiency even defines production in the architectural studio – how much work in how little time.

More and more, instead of less is more, we want more from less. And perhaps this is as it should be in a world increasingly defined by a sustained crisis of scarcity – of economic, environmental, material and human resources. However, it is necessary to ask whether a positivist application of efficiency –more often driven by the ruthlessness of market forces than principles of enlightened stewardship –too often results in an unquestioned privileging of the quantitative over the qualitative. If efficiency is the overriding imperative in a contemporary culture predicated on the bottom line -on ever faster and cheaper- then what is lost and what is gained in the exchange? Whereas the Taylorization of labor and mass production –two of the formative innovations of industrial culture at the outset of the twentieth century- were once considered unambiguous advancements, they also reveal the double-edged nature of efficiency. The streamlining of workplace flows which promised to minimize drudgery often compounded it -necessitating new forms of control and surveillance and devaluing the skill of the individual worker. At the same time, the rise of industrialized production stimulated the consumption of a proliferating array of disposable goods, magnifying the depletion of resources and the generation of waste.

But what if efficiency itself was interpreted as a paradox? If efficiency entails the coupling of any maximum to any minimum, then how might a reconsideration of efficiency become conceptually generative rather than restrictive? This studio will be driven by a critical re-evaluation of notions of efficiency in architecture – recognizing that every efficiency paradoxically implies a corresponding excess, exorbitance or waste. Efficiency of movement implies a surplus of circulation, optimization of daylight might generate a superabundance of apertures, efficiency of structural footprint might create an extreme density of structural members and so forth. This coupling of efficiency to its opposite creates a fertile contradiction -an irrational residue- that can be used to hijack a narrow functionalist conception of efficiency. In an era of performance-driven optimization, we will pursue extreme, perverse, or satirical efficiencies as a means of generating new programmatic and spatial opportunities. If the value of architecture exists to the precise degree that it transcends the strictly utilitarian, then we will seek to turn efficiency against itself, to the point where it generates a productive exorbitance.

Background:

An early critique of efficiency can be found in William Stanley Jevons 'The Coal Question', published in 1865 as an evaluation of Britain's burgeoning coal-based iron industry. Jevons contended that, contrary to intuition, an increase in technological efficiency (of fuel consumption for example) results not in decreased use of resources but the exact opposite: as economy of use drives supply up and cost down, demand is stimulated, resulting in an increased depletion of resources and canceling out any savings achieved by the initial efficiency. The Jevons paradox, as it is now known to contemporary economists, can be found in a wide variety of disparate phenomenon. For example, over the course of the last 20 years the efficiency of air conditioning equipment in the United States has improved by nearly 30%. However, rather than reducing consumption, energy use for cooling has nearly doubled over that same time period. Today, despite ever more stringent energy codes we use more electricity to air condition our buildings than the sum total of all electrical use in 1955 before cheap, readily-available cooling became prevalent. At a minimum, such phenomena call into question a simplistic understanding of efficiency as an unalloyed virtue and point to the wider chain of relations that impact its real effects.

At least since the emergence of modernism however, the valorization of efficiency within architecture has been pervasive: from Mies' famous dictum to Le Corbusier's *machines for living in*, from the aesthetics of structural optimization to the streamlining of transportation flows in the multi-layered networks of contemporary cities. Principles of efficiency gradually permeated every scale and facet of architectural production, encompassing both the standardization of the American building industry in the aftermath of World War II as well as the application of scientific management principles to the intimate of spaces of the home. Designed as part of a social housing complex in Weimar era Germany – the Frankfurt kitchen, to give one example, was not only pre-fabricated to speed production, but utilized time and motion studies to minimize wasted movement in the preparation of meals. As the architecture of efficiency infiltrated home and workplace alike, it also became emblematic of the alienating effects of an increasingly technocratic environment (and satirized in films like Tati's *Mon Oncle* and *Playtime* in which efficiency run amok generates a range of irrational effects and absurd situations). In architecture, a counter position to what Cedric Price termed the 'dreary Bauhaus logic' of doctrinaire modernism emerged in the work of groups like Archigram, who – without rejecting efficiency as a critical parameter- pushed it to radical extremes in projects like Plug-In City, the Auto Environments projects, and the Instant City. In stark contrast to dystopian images of mechanization, here technological efficiencies were deployed in the service of new urban pleasures and liberating social effects.

Today, we see a resurgence in ideas of efficiency as new forms of advanced computation promise the optimization of performance as a driver of architectural form. Mass customization and bespoke manufacturing processes seek to further speed and individualize production – potentially increasing temporal and material economies. Meanwhile, the focus on sustainability reasserts the ethical necessity of conserving resources and minimizing energy consumption – spawning an entire architectural sub-industry predicated on new standards of environmental efficiency. At the same time, the bulk of building is subject to the draconian demands of market driven economic formulas- generating a taxonomy of efficient building types – from micro-hotels to big box stores, from automated parking structures to just-in-time distribution centers – typically outside of the purview of architects. This studio will examine the multiple forms that efficiency takes in contemporary architecture, analyzing its role in current practices in order to generate alternative tactics and speculations. These speculations will take the form of precise architectural proposals. Manhattan, as a metropolis whose form is frequently credited to the demands of efficiency, will provide the physical site for these investigations.

Process:

An example of the unpredictable consequences of efficiency can be found in Invernizzi's Villa Girasole, built just outside of Verona in 1935. A simple imperative – to maximize the house's exposure to daylight – produces an intricate series of rational decisions resulting in an exorbitant, if not illogical whole. In order to maintain optimal solar orientation during the course of the day, the house rotates on a massive landscape turntable supported by fifteen train wheels and powered by a series of low horsepower motors. This mechanical contrivance – imminently logical given the initial premise – triggers a series of repurcussive effects: the house is split in two – a spinning machine-like top over a solid masonry base- connected by a revolving circular stair and elevator core which combines vertical ascent and rotational motion. In the rotating portion of the house, commonplace domestic features are distorted according to the demands of mobility – plumbing is connected to tanks slung from the underbelly of the house, while storage, furniture and cabinetry are built into the walls, and the mirrored plan needed to balance loading generates redundant, mirror-image rooms. Conventional distinctions between front, back and side yards no longer apply as the house continually changes its relation to the surrounding landscape. Doors may open onto different locations at different times of day and the sun can rise and fall in the same window, freezing shadows and warping the perception of time. Beyond the explicit intent of its creators, Villa Girasole demonstrates the pursuit of rational trajectories extrapolated to the point that they render up a productive excess - a precipitate of paradoxical effects.

While taking seriously the conservation of economic and environmental resources that underwrite contemporary impulses toward efficiency – we will examine the potential latent in a more nuanced and problematized understanding of efficiency as paradox. Examining it's multiple forms: temporal, spatial, material, economic, etc. and drawing from a range of programmatic types (office, hotel, parking lot, library...)- the student will derive a logic which frames a proposal regarding the pairing of efficiency/inefficiency as a generative principal. In these speculations, efficiency will be shadowed by its opposite in the form of the excessive, the residual, the superfluous and the wasteful. Rather than seeking the elimination of these negative terms, we will attempt to leverage them as productive grounds for rethinking dominant narratives of optimization. Through the rigorous application of imagination, the underlying logics of the project will be both amplified and diverted, catalyzing unforeseen couplings of form and program, function and inhabitation. Operating opportunistically within the legislations and logics of efficiency, these tactics will open up new, imaginative potentials inside the rationalized spaces of contemporary systems.

Pandora, Pandora, Pandora

The House for Pandora

Yehuda E. Safran

With: Juan Francisco Garcés

On his flight to Chandigarh, the future capital of the Punjab (1951) Le Corbusier reads Georges Bataille La Part Maudite inscribed to him by the author, published a year earlier and read by no more than 40 readers at the time, his reading inspired L.C. to write on p.92:

'Corbu has been accepted by assholes, and for the other, he is a king. This unselfish practice of painting is unflagging sacrifice, a gift of time, patience, Love expecting no material reward (except for modern merchants). This sowing in the wind is for unknown people. One day, before or after my death they will say thank you. It is too late for so many setbacks in life. No matter: what matters is the key to happiness.'

As my friend Philippe Duboy proposed long ago, this reading inspired the "Open Hand" and the "Poem of the Right Angle" not to mention the exuberant colors of the sun.

This Advanced Studio embraces LC's understanding that architecture is the practice of a gift above all. Not only in Potlatch sense of North American Indians who were prepared to sacrifice all for the sake of rank and posterity, but as the way to fulfill one's vocation, one's love of architecture.

Our site is Alphabet City. Writers, poets, artists and jazz musicians together with drug addicts and homeless made this part of Manhattan an island within. We proposed Pandora House as a place of hedonistic cult. We will develop a new typology to provide a social condenser, not in the Constructivist sense that was still in the shadow of production and utilitarian view of mankind, but in an expanded sense of Bataille's earlier, pre WWII writings, as in Vision of Excess, The Notion of Expenditure.

Erasmus in the 16th century translated 'Vase' or 'Jar' in the Greek text of Hesiod's Théogeny, retelling the myth of Pandora, as 'Box' thus coining the expression: Pandora Box.

Pandora, (all gifts) she who was fabricated by Hephaestus to furnish mankind with a feminine counterpart was at the same time, with her curiosity a curse. Indeed, in the original myth no sooner she is invited into the household of Prometheus' brother she opened the cover of the Jar half buried in the earth, and illness and misfortune spread on earth. Only 'hope' which was at the bottom of the heap remains inside as Pandora closed the cover again, too soon.

The misogyny in Hesiod's tale is unmistakable. Feminists see it as one more parry in the patriarchy's war against the feminine. Hesiod likely revised an earlier goddess myth, in which the first woman arrived bearing a jar that held not evil, but the feminine mysteries, powers associated with intuition, dream, and prophecy, as well as the unconscious and the fertile unknown. Early fertility goddesses were the matrix from which all life sprang. But in patriarchal pantheons, they were stripped of their fullness and splintered into multiple goddesses with lesser powers. We are interested in the best possible reading of her as the source of all possible gifts.

We will examine a great number of prototypes illustrating a so-called "hedonistic" program, from the Villa of Mysteries in Pompeii to Fun Palace in East London and recent Spa by Frank Gehry in Spain, Peter Zumthor in Switzerland and Steven Holl in Austria (Loisium) and France; In order to invent and shape an unprecedented prototype for the future, engaging all our inalienable gifts; the gift of pain and pleasure, the gift of language, the gift of a rational insight, the gift of color, among many other gifts.

We are inviting artists who live in Alpha Beth City or connected with the 'Gift' issue.

Alphabet City. New York

17.VII.14

Karla Maria Rothstein, critic
Aya Maceda, TA and David Zhai, DA

IN-finity. *Democratizing Death*

Architecture is a transformative practice. We engage immersively with physical and intellectual substance, framed by conceptual position and argument, in order to imagine the future and catalyze change. Urban and social fabrics are intertwined and fluid. This implicit dynamic interdependence enables architecture to ignite social-progress via the strategic introduction of new structures and patterns which influence awareness and engagement with the metropolis.



Strongest evidence of water on Mars, by NASA Mars Reconnaissance Orbiter 2011

In an interlaced process—analyzing, envisioning, listening, leading, and testing—architects instigate evolution in the city, and adjust how society is shaped by the urban environment. *Considered through lenses of civic space and dignity, projects in this studio will engage intimate and universal issues—including the inevitable finitude of our biological existence—and the associated spatial, social and political delineations that accompany mortality.*

MORTALITY and the METROPOLIS.

Shaping the future of how cities accommodate the mortal remains of their residents is the focus of Columbia GSAPP DeathLab and this advanced research and design studio, the 4th in a current series on mortality and the metropolis. The dead will always outnumber the living. With over 7 billion humans currently alive on earth, and after centuries of ritualized burial, our cities are facing a predicament of extinguishing cemetery space as increasing urban populations continue to exceed the infrastructural means of the metropolis.

By multiple metrics, the practice of individual burial in perpetuity is logically unsustainable. In our increasingly dense world, the environmental toll of traditional burial and cremation calls for innovative procedures and new relationships to corporeal disposition. And while existing cemetery territories serve a passive role in metropolitan ecologies, these sacred lands are socially marginalized and psychically and spatially repressed from the experience of most inhabitants.

Far from macabre, we see the future of how urban society will deal with death as a highly pertinent and potent territory for sensible, respectful, and radical transformation.

Architecture has the potential to frame both existence and absence. Accepting the indeterminate and inevitable aspects of mortality, projects will tangibly engage life's materiality intertwined with an implicit immateriality of memory. Proposals for *future urban spaces of remembrance will negotiate diverse pressures—environmental, political, economic, social, cultural, religious, technological, personal—to craft civic spaces and phenomena with the capacity to meaningfully alter urban public perception, space, and infrastructure.*

STUDIO ADVISORS

We engage diverse advisors to stimulate thinking and awareness—both ours and theirs. Projects will craft and hone critical positions throughout the semester. Work must be legible to both architects and experts from a broad array of disciplines. At appropriate times, in addition to our architecture colleagues, studio reviews and working sessions will be joined by the following:

Kartik Chandran, PhD. microbiologist, environmental engineer

Studying microbial communities in natural and engineered systems. Currently running lab-scale fermentation processes on Columbia's campus, Kartik's practical knowledge related to biological fermentation, decomposition, water cycles, and the conversion of waste to energy facilitates our aspiration to explore the strategic application of microbial communities to accelerate biotransformation, particularly related to the disposition of human remains and the future of urban ecology.

Jennifer Preston, sustainability expert

Currently working on sustainable building projects in NYC and Senegal, and a member of AIANY Committee on the environment. Jennifer's expertise encompasses critical sensitivity to human perception and a commitment to building judiciously resilient futures.

Mark C. Taylor, PhD. philosopher-theologian

Chair, Columbia University Dpt of Religion, cultural critic, and author on subjects ranging from visual arts to nanotechnology. Mark's lucid analysis and cultural critique instigate discourse and design invention to engage philosophical contention and theology.

Christina Staudt, PhD. end-of-life coach

Art-historian and chair of the Columbia University Seminar on Death, Christina is co-founder of the Westchester End of Life Coalition and a hospice volunteer working with patients in their last days of life and their families. Her research and scholarly interests center on the interplay of death and community.

Chelsea J. Dowell, historic preservationist

Manager of Programs at Green-Wood Cemetery Historic Fund and has worked in programming at the Museum at Eldridge Street on the Lower East Side. At Green-Wood, Chelsea uses living history, design education, and public programming to advocate for the continued and modern use of historic spaces.

TBD, real estate finance analyst

Columbia School of Engineering and Applied Science

Carlos Menchaca, NYC Council member District 38

Prior to becoming a City Council member, Menchaca received his master's in urban planning from the Robert F. Wagner Graduate School of Public Service at NYU and worked for Brooklyn Borough President Marty Markowitz as capital budget and policy coordinator.

TEMPORALITY

Possessing the certainty that individually we will not endure, students will design with an awareness of the sometime alchemical qualities of light, seasons, and time, in pursuit of urban architectures that embody the evanescence of snow. *We will explore mutability over permanence.* While an increasing portion of the western population elects to scatter cremated remains, the burial plot, mausoleum or niche “in perpetuity” has been for nearly two centuries the prevailing expectation in the US. As if to denounce our mortal impermanence, a slab of stone was set to endure in our absence.

Temporal anti-monuments have a long tradition in the realm of art installations. Most recently in Kara Walker’s “A Subtlety,” an 80’ long haunting sphinx-like woman enveloped in 30 tons of sugar presided over a grand industrial shed for just two months prior to the Domino factory being torn down to make way for 2,200 new condos on the Williamsburg waterfront.

A transient, crystalline presence confronting dark shadows of dysfunction related to race, ego, and power.

Ephemeral art works like Judy Chicago’s “Atmospheres”—dissolving sculptural environments—made, discretely from tons of dry ice, or the fleeting presence of fireworks and smoke bombs; or Robert Smithson’s Spiral Jetty—a coil of rock extending into the Great Salt Lake, disappearing and reappearing in the veils of nature, celebrate life’s temporal indeterminacy.

Buddhist sand mandalas are impermanent and unreproducible. Meticulously crafted of colored crushed stone powder, they are almost immediately ritually disrupted, gathered and released into moving water. They serve as meditative metaphors for the impermanence of material life.

DEATH+ [Secular Sacred]

The roles of spiritual space, places that inspire awe and facilitate reflection in the urban everyday, are evolving beyond prescribed monumental doctrine and preconception. Architecture, through the crafting of material place and the shaping of immaterial phenomena, has the capacity to catalyze this socio-cultural evolution. Projects will courageously engage the resonance of the loss of individual life, while fundamentally *celebrating architecture’s larger capacity to both inspire and recast our civilization.*

Contrary to an implicit “setting apart” of the Sacred, our work and research aims to (re)integrate civic sanctuaries into the fabric of the metropolis. Notions of sacred as related to the body, in particular the corpse, are evolving. Medical uses of organ donation and full body anatomical research are now widely accepted by most religions.

Programming will evolve and be amplified relative to students’ conceptual intent. Projects will be broadly understood as alternatives to traditional, segregated urban cemeteries, engaging methods of disposition that accelerate natural biological decomposition, and modes of remembrance that appreciate the fluctuations of human memory. With approximately 1,000 deaths per week in NYC, current environmental, logistic, and social imperatives require alternative mortuary practices. While “natural burial” is a sensible alternative in contexts where adequate open space is available to be conserved, it does not address the predicament of many contemporary cities unless one overlooks the environmental costs of refrigeration and transport, and the social cost of displacing spaces of death from the quotidian existence of the living. Contending with and honoring our dead locally is a challenge that merits both intellectual and creative attention.

GRAFTING

Architecture is discursive, revisiting the past and stealthily disrupting the present to project futures that cannot be wholly predicted. Grafting implies working inventively with what exists to create something new. It assumes we conceive of the city and our work as comprised of living, resilient, transforming, and interconnected ‘bodies.’

Spaces of death will be engaged as part of the essential ecosystem of the city. We will operate at the edges of existing urban cemeteries, giving shape and texture to new civic spaces and the landscapes that join them in the larger tapestry of the city. The spiritual and the quotidian exist in parallel space and time, one inserted into the other.

Projects will engage in programmatic and typological grafting, strategically interpreting constraints of existing structures while adding new content to transform prevailing patterns and situations. Through an interplay of adaptive interactions of anatomies, new roles and definitions will inform innovative “organisms,” without nostalgia or prejudice.

Seeming incompatibility is not necessarily negative. Friction induces evolution. The studio will mix things that seem to belong together - with some that don't.

SYNERGY

Work throughout the semester will be prolific and provocative. The studio environment thrives on affiliative, open-ended, mutually beneficial relationships. Collaboration helps build momentum and cope with stress.

Clear, complex thinking generates innovation. No single tool, expertise, logic, nor deductive, linear process is sufficient to engage the complex needs and opportunities of the metropolis. *Individual research will cross-pollinate and collectively compound to inform team vision and propositions.* The studio will operate synergistically, instigating critical dialogue among diverse perspectives to constructively provoke trajectories and challenge intuitions.

DIALOGUE and LEGIBILITY

Architecture is an agent of change. We have a mandate to produce both increased knowledge and responsible socio-spatial possibility, increasing awareness both personally and politically, educating not only ourselves, but also the public. Projects will problematize, articulate, mobilize, and motivate.

The studio will conduct frequent internal debates and critical discussions. To better understand and translate the complex context in which we are operating and to instigate our thinking, we will engage an array of relevant advisors, with guest critique from disciplines as diverse as theology, philosophy, thanatology, biology, environmental engineering, business, hospice, and sustainability. Toward that end, work must be highly legible. Graphics and language must be both elegant and eloquent, reflecting both the passion in your work and the intelligence of the argument in which you are invested. *Legibility will require the invention of forms of representation that emerge from and inform critical conceptual positions.*

CONSEQUENCE

Work in this studio will be informed by critical, conceptual positioning in relation to tangible constraints and consequences. Scales and degrees of transformation will range from the perception of a single individual to a global shift in perspective. Projects will speculate on their potential implications relative to individuals, material properties, structures of organization, the city, and the world. Work will include a means to measure and evaluate consequence, summoning real-world perceptions and tangible engagement with ways in which spaces may actually be experienced.

We will analyze how diverse rituals, underlying doctrines and collective understandings of death impact the built environment and experience of the city, and how *reframing relationships to our finite existence* might instigate new readings and exchanges among the sacred and profane realms of our lives, to inform meaningful, future-thinking alternatives.

The scope of this semester is an opportunity to shape both your experience and understanding of place and memory, and catalyze public imagination of future possibility. While dealing with virtual lives and social networks after death is increasingly discussed (including Facebook's "If I die" posthumous-preparation, and Twitter_LIVESON accounts), *this studio is about physical, urban place-making, experimenting with tectonic structure and phenomena, and crafting spaces that engage and augment human, urban, and natural ecologies*. We will optimistically engage death, dying, and memorialization intertwined with life, living and the future.

SITE(s) *"Whereas the beautiful is limited, the sublime is limitless, so that the mind in the presence of the sublime, attempting to imagine what it cannot, has pain in the failure but pleasure in contemplating the immensity of the attempt"* – Immanuel Kant, *Critique of Pure Reason*

Manhattan was once home to nearly one hundred active graveyards. During the 19th century, increasing land values and fears that decomposing cadavers were producing an unhealthy "miasma" instigated the relocation of New York's dead to Brooklyn, Queens and peripheries further afield. Today, Trinity Church Cemetery in Washington Heights is the only location in Manhattan with available burial plots.

Beliefs about and approaches to death, dying, and remembrance have changed over time. *The urban cemetery was once a social destination.* For example, in the decades after its establishment in 1838 as one of America's first rural cemeteries, Green-Wood in Brooklyn attracted half a million visitors a year, rivaling Niagara Falls as the country's then-greatest tourist attraction. Commanding 478 bucolic acres, this historic landscape is almost identical in size to nearby Prospect Park, and greater than half the size of Central Park. Founded in an era where cemeteries offered the primary open space within the chaotic, congested city, Green-Wood pre-dates both Prospect and Central Park, and was designed with picturesque carriage routes and promenading vistas looking out to New York harbor - clearly meant for the pleasure of the living. Its diverse topography was formed by glacial moraines, including Battle Hill, the highest point in Brooklyn. Today, relatively few people seek out a trip to the cemetery—but when re-conceived as civic topographies—new urban infrastructures of mortality could stimulate substantive change.

The present trustees of Green-Wood are bravely expanding the public mission of the cemetery, engaging diverse and sometimes controversial programming. The cemetery now serves as repository for both human and material belongings of the deceased, with new areas of the cemetery designed for culturally specific rituals. While the Rules of Green-Wood Cemetery explicitly forbid jogging, biking, and eating, when large portions of nearby Prospect Park were closed during President Obama's Fall 2013 visit, the cemetery made a rare exception to allow joggers to run on their hallowed grounds. On Summer Saturday mornings they host a series of serene outdoor yoga classes followed by breakfast amidst the tombs overlooking the Manhattan skyline. There is an annual whiskey tour, dance performances, concerts and cocktails in its chapel and catacombs. *Things are changing in the cemetery.*

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12. Mark C Taylor, *After God*. University of Chicago, 2007
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5. George Kubler, *The Shape of Time: Remarks on the History of Things*. Yale University Press, 1962
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7. Mayor's Office of Environmental Remediation (OER). <http://www.nyc.gov/html/oer/html/home/home.shtml>
(The New York City Brownfield Cleanup Program was officially launched on August 5, 2010. This program is the first municipally-run brownfield cleanup program in the nation.)
8. NYC Brownfield Partnership. <http://www.brownfieldnyc.org/>
(NFP resource for the private sector's better understand and navigation of Brownfield processes for re-developing idle land)
9. You Are The City. <http://www.youarethecity.com/>
(Working with soil scientists at Brooklyn College, Cornell University, and Lyndon State College of Vermont to make sure that FIELD LAB and FIELD GUIDE are up-to-date with the latest phytoremediation and soil contamination research and knowledge, that all information in the field guide is accurate and fact-based, and that field lab experiments are useful and beneficial.)
10. The Cloisters. Washington Heights, Fort Tryon Park, 99 Margaret Corbin Drive.
(Parts of five medieval French cloisters and gardens reassembled to house medieval European art.)

11. *The Earth Room* by Walter De Maria, DIA Art Foundation, SOHO, 1977.
 (250 cubic yards of earth, 3,600 square feet of floor space 22 inch depth of material, Total weight of sculpture: 280,000 lbs.)
12. *Hart Island*, Bronx NY. 101 acres, about a million bodies are buried — the homeless, the poor, the stillborn, the unidentified and the unclaimed. The island is said to be home to the largest active potter's field in America.... controlled by the city's Department of Correction. The burials (up to 1,500 a year) are performed by inmates from Rikers Island who are paid 50 cents an hour. Common graves, 70 feet long hold about 150 adults each; plots for babies hold a thousand stillborn fetuses and infants interred in miniature coffins

Energy Technologies

1. Prof. Kartik Chandran's Fermentation Laboratory, Columbia University (see Advisors page 2)
 employs multidisciplinary strategies to study microbial communities in natural and engineered systems, guided by the ultimate vision that gaining a better understanding of these communities will allow us to fully harness their power towards waste treatment, bioenergy, anti-microbial therapies and ultimately contribute to improved environmental and public health.
2. Prof. Bruce Logan, Ph.D.
 Director, Hydrogen Energy (H2E) Center & Engineering Energy & Environmental Institute (E3I)
 Penn State University Logan lab - development of new bioelectrochemical technologies for achieving an energy sustainable water infrastructure. Logan and his collaborators have invented a method for sustainable hydrogen production using microbial electrolysis cells (MECs); improved direct bioelectricity generation by several orders of magnitude in microbial fuel cells (MFCs).

Death

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13. Mortality, the first European journal of death studies. Glennys Howarth Founding-Editor
14. G. Howarth & O. Leaman, eds., *Encyclopedia of Death and Dying*, London: Routledge, 2001
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17. 9-11 Memorial. <http://www.911memorial.org/take-virtual-visit1>

18. Cremation Association of North America (CANA)
19. Funeral Consumers Alliance. Joshua Slocum, executive director
20. American Funeral Director magazine. Ed Defort, managing editor

Analysis / Thinking

1. Stan Allen, *Notations and diagrams: Mapping the Intangible in Practice: Architecture, Technique and Representation.* London: Routledge, 2009
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Essays on "lightness," "quickness," "exactitude," "visibility," and "multiplicity."
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4. Katie Davis, *Memory Map*, in Katharine Harmon [ed] *You Are Here: Personal Geographies and Other Maps of the Imagination*, PAP, 2003
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"Map making means ignoring everything in the world but the one thing being mapped"

Inspiration

1. Alastair Mackie (Sculptor creating spheres out of mouse skulls, panels out of wasp heads and fabric out of owl sick; alternative taxidermy as a canvas for art)
2. Tara Donavon <http://www.acegallery.net/artistmenu.php?Artist=8>
(Installation art employing multitudes of everyday manufactured materials which transcend themselves to explore the phenomenological effects of infinity; monograph by Monacelli Press)
3. Anish Kapoor. <http://www.anishkapoor.com/>
(Sculptor investigating surfaces, materials, and proportions. Often massive and simultaneously enigmatic or immaterial)
4. Andy Warhol. <http://www.guggenheim.org/new-york/collections/collection-online/showfull/piece/?search=Orange%20Disaster%235&page=&f=Title&object=74.2118>
(Commercial pop artist critically engaging issues of seriality, death and disaster)
5. Damien Hirst, butterfly series. <http://www.gagosian.com/exhibitions/beverly-hills-2007-02-damien-hirst/>
(Controversial works challenging ideas about existence; calling into question our awareness and convictions about the boundaries that separate desire and fear, life and death, reason and faith, love and hate. In his art, Hirst uses the tools and iconography of science and religion, creating sculptures and paintings whose beauty and intensity offer the viewer insight into art that transcends our familiar understanding of those domains.)
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KARLA MARIA ROTHSTEIN, critic

Karla Rothstein has taught design studios at all levels in the GSAPP for the past 17 years and is also the director of GSAPP's transdisciplinary Deathlab (www.deathlab.org). She is a registered architect, International Associate AIA, and the Design Director at Latent Productions, an architectural practice operating at the nexus of design, real estate, and research (<http://latentnyc.com/capacity/4/>). In 2011, based on her professional and academic work related to spaces of death and memory, Karla was appointed as a member of Columbia's University-wide Interdisciplinary Seminar on Death. Content she presented at the seminar's 2012 Conference, addressing the contentious and evolving environment of death studies in the 21st century served as the basis for her chapter in Our Changing Journey to the End: Reshaping Death, Dying, and Grief in America, an anthology of academic writings which was released by Praeger in 2013. Supported as a Jacob Javits Fellow in Fine Arts from 1988–1992, a William Kinne Traveling Fellow in 1992, and a NYFA recipient in 2000, Rothstein's professional and academic work has been featured and/or exhibited at Storefront for Art and Architecture, Rensselaer Polytechnic Institute, Barnard College, Columbia University, Van Alen Institute, Max Protetch Gallery, the Center for Architecture, architizer.com, Gizmodo, Architecture magazine, Casabella, and The New York Times. Most recently Latent Productions received a 2014 AIANY Honor Award for Runner&Stone, a bakery-bar-restaurant in Gowanus NY, and their concrete Belly Blocks, cast into flour sacks emptied by the baker, were a finalist in Architizer's A+ Awards, Architecture + Materials. Rothstein's first single-family house is included in Kenneth Frampton's American Masterworks 2nd edition, Rizzoli 2008.

(<http://latentnyc.com/projects/>)

AYA MACEDA, ta

Aya is an architect with extensive professional experience from Australia and South East Asia specializing in residential architecture and projects dedicated to the enhancement of the public domain. An MS AAD graduate from GSAPP and a former student of Karla Rothstein, Aya was the recipient of the Percival and Naomi Goodman Fellowship, Award for Excellence in Design and the Lucille Smyser Lowenfish Memorial Prize. Aya is currently working on post-disaster school rebuilding in the Philippines, a flexible live-work housing model and residential projects at actLAB (www.actlabnyc.com), and contributing to Australian publication Habitus.



The Life of Buildings

Design for Adaptation in Tokyo

Fall 2014
Advanced Architecture Studio V
A4105

C-LAB

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I. Introduction

The agenda of this studio is to create buildings that are adaptable. The studio exercise will involve developing the building's form and surfaces so that the building has lasting value well beyond its original use. Its form will not be neutral, but highly specific in its figuration, size, and level of articulation so that it can house future, unanticipated programs. As Aldo Rossi observed—noting the project under Sixtus V to turn the Coliseum into a wool mill and workers' housing—a building can be inhabited well beyond its initial use, with each new use a testament to the formal considerations made by its designers when it was first conceived. When designed in this way, the form accommodates its first intended use and hosts future functions that exceed the imagination of its creators.

It's become a commonplace idea in contemporary architecture that social and technological shifts occur at fast pace, and that in comparison the process of building is slow. Architecture's longstanding value of having permanence, is paradoxically recast as sluggishness, the idea is that the pace of change has outstripped architecture's capacity to adapt, and thus rendered it unresponsive if not irrelevant to an ever accelerating society. This claim inverts the value associated with permanence, but without questioning the assumption that buildings are more or less static.

But buildings aren't (that) static. As any New Yorker knows from walking under this city's ubiquitous construction sheds, cities and their buildings are continuously in flux—shedding layers of material, exfoliating technologies, embedding new pipes and conduits, absorbing energy and radiating waste, all the while making incremental shifts to align with the imperatives that are a part of every building issuing from domains as diverse as finance, décor, technology, habits, demographics. A building is a fiction, its apparent static objecthood an optical illusion resulting from the fact that its structure and façade (lifespan: 50+ years) are slower to change than the arrangement of its furniture (5 days), its interior partitions (5 years), and its services (15 years). Perhaps surprisingly, over the life of a building, the greatest capital expenditure will not be the structure, but rather the internal space plan, which is constantly under construction. Buildings are complex dynamic assemblies of material, economic, and social products, each with specific cycles of production, use, decay, and disposal. From the moment a building is 'completed', the synchronicity of these lifecycles begins to break apart: the economy contracts, tenants shrink and grow, not-so-old gypsum is torn down and new gyp goes up, last year's monitors have dark spots and are replaced, the plastic in the blinds decays from ultraviolet light and...

So buildings aren't slow. But finance is: it can take decades to assemble the combination of capital and parcels of land required to build a tower in an urban center, an investment that needs to be amortized over several subsequent decades. During the life of a building, its component systems, materials, and the organizations that occupy it will need to change at coordinated moments in time to ensure the viability of the whole. Adapting becomes a key operation. The more adaptable a building is, the more likely these moments are to occur, and the more likely it is to remain suitable to its users and valuable to its owners over time.

In the studio, we will produce dynamic models for how a building form can respond over a long lifespan to various material, technological, and use cycles. We will also consider the economic implications of adaptability, and how buildings can accommodate structural changes in supply and demand. These dynamic building prototypes will take into account their adaptations to specific, anticipated trends within the next 20-30 years (which we'll call situated adaptability), as well as possess an additional adaptive capacity in excess of predictable events (which we'll call broad adaptability), in order for the building to maintain its value over a 100-year lifespan, well beyond the limits of our projections.

Life cycle and adaptability

Thinking about life cycle doesn't mean specifying long-lasting materials or component systems. Rather, it concerns the social and economic viability of the building, which means not only a long life, but also adaptability to changing preferences, uses, and associated management operations. It requires formal design decisions that will have great impacts on the operating costs and energy use of the building. It necessitates an approach to the building construction as a forward-compatible assembly, comprised of a series of interdependent material and technological layers with different schedules of replacement. Finally, it means designing a form and its spaces so they accommodate changes in program, yet have some logic about it's massing, figuration, and dimensions that reduces capital costs associated with each conversion. Decisions in each of these areas –form, forward-compatibility, and program – affect cyclical capital costs over the building's lifespan. While many of these decisions attempt to manage necessarily unknowable future external circumstances, we assert that there is an inherent capacity for adaptation in buildings that is critical to the design exercise of this studio.

II. Development Context

Tokyo in Transition

The site will be in central Tokyo, a city whose markets, buildings, and population are changing at a pace not experienced by the world's largest metropolis since its post-war rebirth in the late 1940s.

Tokyo's rapid transformation is driven in part by Japan's unprecedented demographic shift, with an aging population and low birth rates resulting in an overall population decline at the national level. Yet, while Japan's population declines, Tokyo's population is projected to increase and diversify. The increased densification of Tokyo's inner wards is radically undoing decades of suburban and rural dispersal.¹ At the same time, labor and social institutions are changing in response to globalization pressures and consumer preferences. The direct and indirect impacts of this larger societal transition on the design and management of buildings – and the urban environment – have yet to be fully reckoned with.

¹ Tokyo is anticipated to house 30% of the nation's people by 2035, as the rest of the country's population declines (Statistics Bureau of Japan, 2011).

As preferences of Tokyo workers and residents are shifting, so too are the requirements for commercial, residential, retail, and institutional design and development. Specific to these programs, as CURE's related research indicates, there will be further corporate relocations to Tokyo in the search for talent and aggregate economies. At the same time, a greater percentage of workers will be employed in tertiary industries which are expanding the traditional notion of the workplace. Meanwhile, household composition in Tokyo is evolving, with a greater diversity of household size and structure. Most importantly, real estate consumer preference research suggests that inner Tokyo is quickly dominating spatial and typological preferences among a diverse group of households. We also know that these workers and residents are consuming in different ways in the face of online retail, limited inventory strategies and the decline of the traditional retailers. Parallel changes in healthcare, childcare, education and other programs have been observed as dependent institutions of residents and workers. The shift in composition and related urban amenities and services will also transform because of Japan's aging society, with roughly a third of Tokyo's residents over the age of 65 by 2035. However, this aging trend, as a percentage of the whole, is anticipated to level off soon thereafter. Taken together, these influences have led to a great deal of uncertainty in the planning and design of buildings in Tokyo's inner wards.

The market economies of Japan and Tokyo represent similar variability in potential or probable outcomes. Some argue that the decline in productivity, absent a more robust increase in real immigration, is setting the country up for an economic bust. Others argue that assets, including real estate, are grossly undervalued and that greater inflation is just around the horizon. The historic low levels of inflation, even contextualized with relatively low capital costs, have in recent decades made Tokyo real estate uncompetitive for global institutional capital. In recent years, innovations in investment products have accelerated investment returns, generally through high levels of leverage. Despite these efforts, the extraordinary cost of developing real estate in the face of comparatively low returns has forced the industry to consider the development of extended-life buildings. The extended lifespan of these buildings (i.e., perhaps exceeding a century) is economically desirable because greater or equal returns, in line with global standards, require extended amortization periods. This economic phenomenon is accelerated by (i) limited available land for development; (ii) disproportionate value assigned to the land over the building; and, (iii) comparatively high construction costs, which impose almost equal burdens on development and re-development (i.e., redevelopment is almost as expensive as development because land accounts for a high percentage of the purchase price of lower quality existing buildings). So the challenge for the development of extended-life buildings is to design buildings that can accommodate several capital and physical cycles which can respond to transformative changes in program and use over the course of a century.

Longevity, Risk, and Reward

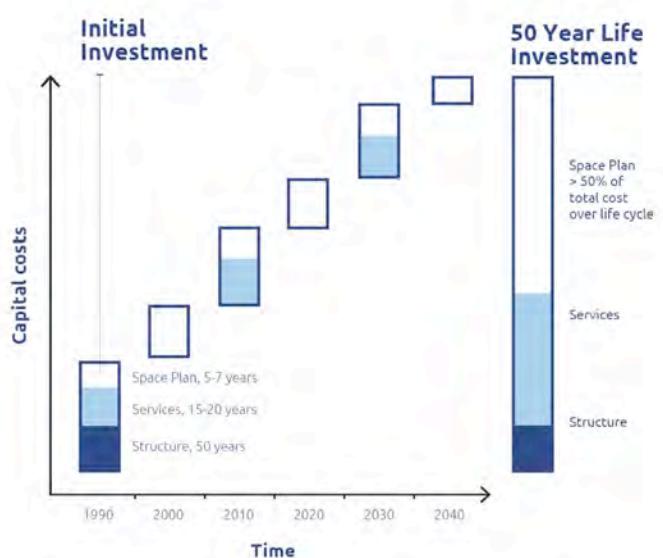
As CURE's background research suggests, the land economics in an environment of low inflation are favorable to buildings whose useful life extends close to a century. As returns on investments are amortized over longer periods for equivalent yields, it has proven to be a disincentive for the redevelopment of existing buildings whose value is disproportionately allocated to land value. Because construction costs and comparatively higher land costs would have to be amortized over the life of the asset based on internationally uncompetitive cap rates, a building with a longer useful life would increase the comparative attractiveness of the assets as investments. While it has been empirically shown that an aging society has a negative influence on land prices, CURE's research suggests that Tokyo will be immune from this downward pricing pressure due to increasing diversification and more varied households. However, the larger proposition for longer useful life buildings assumes that future buildings would be designed to be highly adaptable, in order to accommodate future variability in program as uses evolve with corresponding changes in demography and economy. At the same time, these adaptation measures and strategies must be identified and divided into discrete notions of risk. The management of risk will ultimately be the determinant of the applicability of this studio's work to professional practice.

Each of the studio's building proposals will include design strategies that address the building's life cycle, producing a prototype with built-in adaptability that will greatly extend its useful life, thereby preventing obsolescence and mitigating risk to stakeholders. We will look at life cycle implications for extended-life buildings, considering both environmental and economic sustainability and/or viability, and the relationship between capital and operational expenditures. Our analysis will consider the effects of program, form, and forward-compatibility on the design and management of buildings. Design for adaptability safeguards investment over time, which may promote buildings with higher quality spaces that maintain their value beyond the fluctuating adaptive cycles of various urban systems. Adaptability can enhance the architectural quality, environmental sustainability, and economic security of buildings by reducing risk and consolidating or preserving value in a particular location over many generations. From this perspective, buildings are an investment in the city itself.

III. Design for Adaptation

Adaptation is not just about the flexibility of the building's spaces and uses. Design for adaptability, which is just one facet of adaptation, considers the following categories against the aforementioned criteria:

- Form
- Forward-compatibility
- Program



The renovation and modernization of the services and space plan of a building contribute far more to its lifecycle costs than the structure. Changes to the space plan alone comprise more than 50% of the total capital costs over the lifetime of a building. Diagram by C-Lab, based on a diagram by Frank Duffy in *Work and the City* (London: Black Dog, 2008).

Form

Form provides value to a building over a long timespan, as structure and façade are the slowest elements to change or be replaced. Form effectively locks in design decisions for the entire useful life of the building, and therefore has the greatest effects on the operating costs of the building. The massing of a building, as well as floor-to-floor heights and area-to-perimeter ratios, can increase or decrease operating energy use depending on the balance between energy saved by daylighting versus energy spent on cooling the interior.

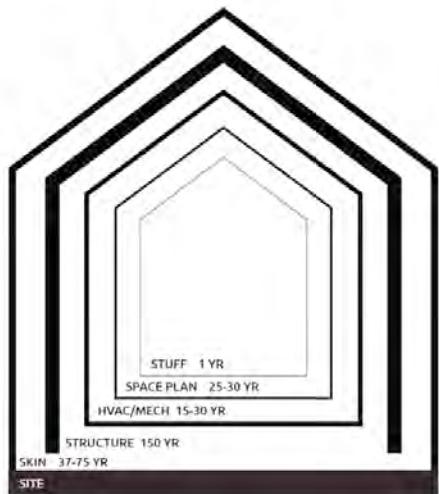
We will develop a form for the building that is novel in its own right, and which offers benefits to the project's operational costs and energy use over its lifespan.

Forward-compatibility

Understanding the lifespans of building materials and systems can help designers and owners plan for future renovation. Buildings are comprised of layers of products and components, each with its cycles of maintenance, decay, and replacement. Design decisions can align the timescales of components, optimizing the useable life of a building and minimizing renovation costs.

Adaptability considers the spatial relationships of building components and the differences in their cycles of replacement and renovation. The layers of envelope, structure, services, technologies, and finishes that comprise a building have very different periods of

replacement. The design work in the studio will attempt to find alignments between the different material cycles, in order to maximize the value of the building over its useable life.



A building is comprised of many layers, each with different timescales for renovation and replacement.

Diagram adapted from "Shearing Layers," Stewart Brand, in *How Buildings Learn: What Happens After They're Built?* New York: Penguin Books, 1995.

Program

Program and occupancy have profound effects on a building's operating expenses and environmental costs. Operating costs make up, on average, 80-90% of the total lifespan cost of a building. Occupancy levels and program affect energy use and the cost of maintenance, driving up operating expenditures. The design of programmatic relationships not only affects the cost of owning a building, but also its value over its lifetime. The ability of a building to accommodate changes in program determines its long-term value as an asset.

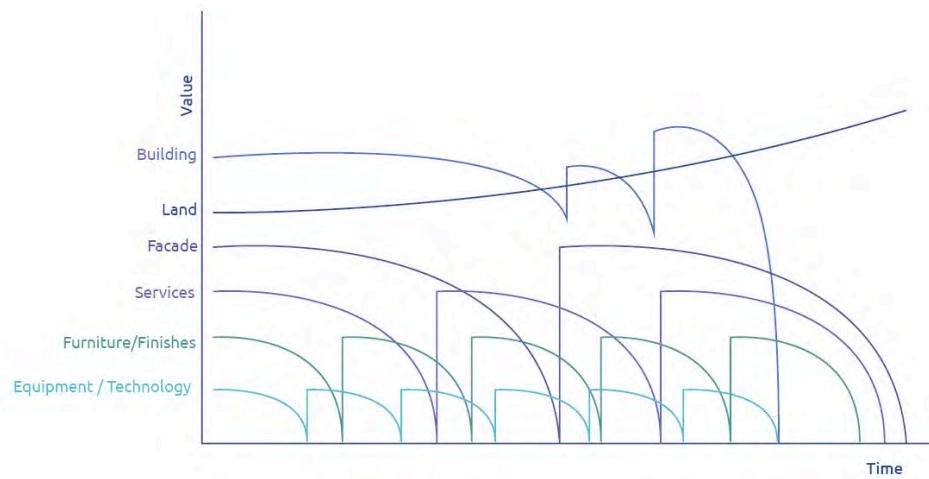
The studio is tasked with researching and contextualizing examples of historic and contemporary buildings that continue to remain highly desirable to tenants after many years of use, in order to understand what allows these buildings to maintain their value despite changes in patterns of occupancy. The studio will consider case studies in New York and Tokyo, as well as in other global cities. Program schemes that result from our study may include new prototypes for the office, retail, and hospitality industries.

Programmatic research will additionally rely on demographic projections produced by Dr. Lance Freeman, Professor of Urban Planning at GSAPP, as interpreted through CURE's estimation of demand. The studio will require students to conceive of a logical phasing from one program to another or from one discrete program to a hybrid future program.

Life Cycle

Form, forward-compatibility, and program come together in the life cycle of the building.

A building's adaptability can be understood through an analysis of its life cycle. If the design of program, form, and forward-compatibility is a means of achieving adaptability, life cycle analysis is the measure of the success of extended lifespan building design.

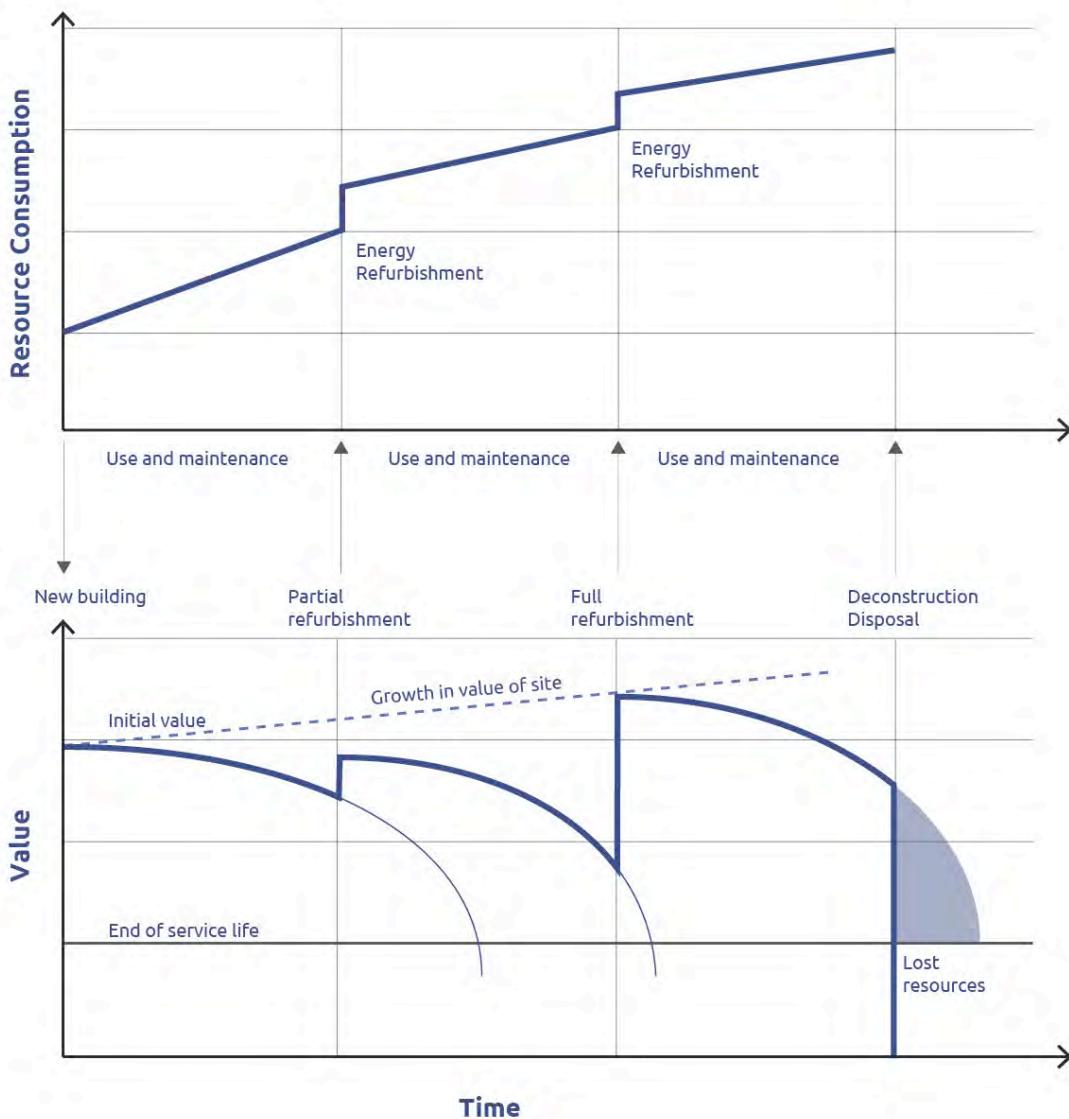


A building's value at any moment is dependent on how the lifecycles of various components align.

Diagram by C-Lab.

Life cycle assessments can be used to evaluate the total energy expenditure of the building over time so the costs of operations can be anticipated during the lifespan of the building, and renovations can be planned accordingly.

Renovations increase resource consumption in the short term, due to the embodied energy they use. But they can decrease total energy consumption over the lifespan of the building, since with each renovation, building systems are often designed to perform with greater efficiency. Renovations can increase the value of the building to keep pace with the growth in value of the site.



Life cycle assessments take into account the service life and replacement cost of building components, as well as the embodied and operating energy used over each period. Diagram by C-Lab, based on diagram from Holger Konig, et al. *A Life Cycle Approach To Buildings. Principles, Calculations, Tools*. Munich: Edition Detail Books, 2010.

The studio will establish cost-estimation benchmarks for modeling life cycling scenarios which may be utilized in the design and programming of the building.

While these calculations will not be entirely comprehensive, they will allow us begin to speculate on iterative variations in program in relation to optimization of form and operations. Likewise, various calculations relating to life cycle can be contextualized against future scenarios wherein greater or lesser degrees of inflation in rents and prices in various programs may limit or promote specific life cycling decisions in terms of recapitalization.

While these calculations may not be entirely useful to the designer, they will provide external rules sets for understanding programmatic experimentation going forward in other facets of the research.

IV. Studio Research Tasks

In order to speculate and explore various outcomes within this research framework the studio will synthesize research and practice within the context of site-specific rules and limitations. Teams of students—each of which will include students from architecture, real estate and planning—are tasked with developing a site-specific scheme which speculates on programs and uses which reflect shifting demands consistent with parallel research efforts which have hypothesized a greater population densification and diversification within central Tokyo, as well as the emerging economic logics for the production of adaptable, extended-life buildings.

The teams will take advantage of their respective backgrounds to develop conceptual schemes which include design, as well as planning, financial, and organizational models. The organizational work-products will include operational and management implications for a diverse or hybridized program. By exploring various levels of service and associated on-the-ground approaches to engaging users, the ambition is for students to develop a business model which is operationalized as a practical matter and not just physical or financial in its manifestation. The financial component of the work will be to outline development models which take into account the life cycle of the assets. These models will be sensitive to various points of recapitalization necessary to accommodate the phasing of multiple programs over the useful life of the building, and will serve as analytical tools for iteratively testing various physical and operational scenarios. These financial models will not only consider internal functions but will also be designed to accommodate analysis based on institutional investment criteria for both domestic and international investors. While the long-term implications of extended-life buildings are not aligned with the probabilistic utility of assumptions of real inflation and interest rates, it will provide a basis for further deliberations within a larger strategy envisioned by the studio teams.

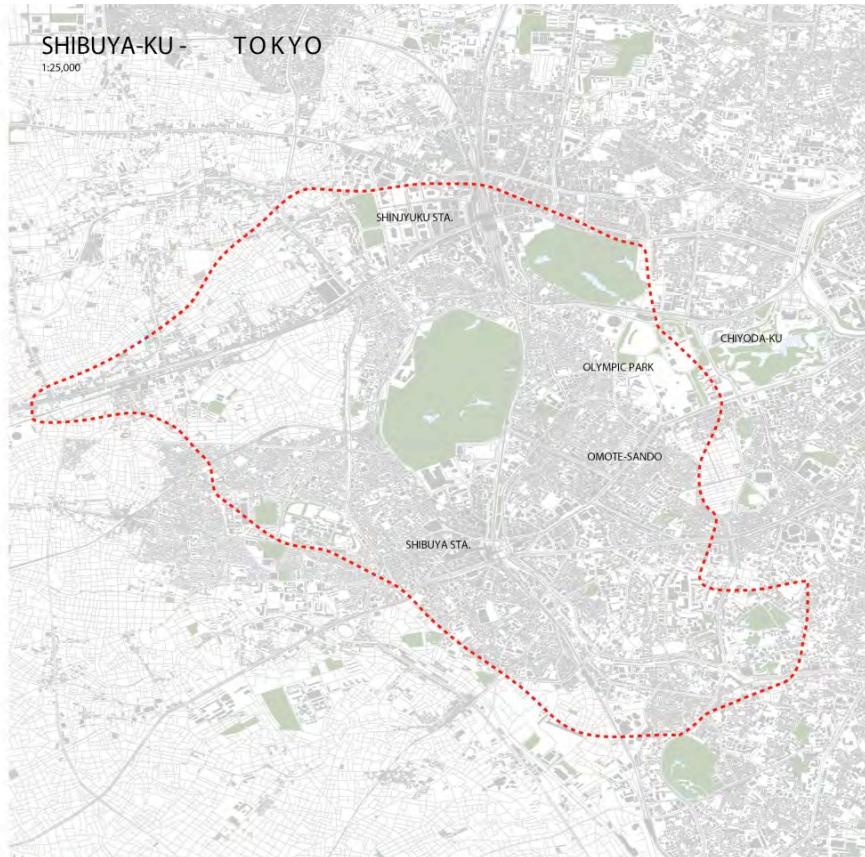
V. Studio Site

To study the implications of adaptation through extended-life buildings in Tokyo, the studio will work on a site in Shibuya, currently housing the department store Tokyu Hands.

The Tokyu Hands site is ideal for studying features that can be later incorporated in a replicable prototype. First, its irregular geometry and size is consistent with: (i) Tokyo's land market which is largely driven by infill; and (ii) an acquisition and development strategy of pursuing sites that have the capacity for mid-scale development in areas that are highly accessible to mass transit. Second, Shibuya represents an ideal urban context for testing design decisions for application to experimental prototypes consistent with the

aforementioned working hypotheses. The Shibuya district is highly visible and accessible to foreign observers and research, and offers a comparative advantage for collecting data sets. The district offers many amenities, from recreation to retail, which are attractive to a variety of different sized and aged households. In addition, the district has one of the oldest residential populations in Tokyo which suggests that area will be ripe for transformation and gentrification. This is particularly true in light of the number of educational institutions within the district. Finally, the district is already in a state of transformation with increasing numbers of office developments which are intuitively taking advantage of the logistical conveniences. As such, the Tokyu Hands site can act as representative test case for the prototypes that the studio will develop.

Through Hulic's sponsorship, the studio will visit Japan in early November. The purpose of the visit will be to re-examine the context of Japanese contemporary architecture and development within which our proposals will be situated.



Joint Studio

The studio is part of a larger pedagogical experiment by C-Lab and CURE to promote cross-disciplinary approaches to research into how Tokyo adapts to unprecedented change. The studio builds upon substantive work developed in parallel tracks of research undertaken by

architecture, urban planning and real estate development faculty. Pairs of architecture students will team up with one RE or UP students from **PLA 6389** and will be asked to design and develop proposals for building prototypes that together include a detailed consideration of design, finance, and management.

VI. Course Schedule

A full schedule will be posted online. Major dates include:

Friday, September 5th: Introduction to Studio²

Week of October 20th: Midterms

Week of November 2nd: Tokyo Trip

Week of December 1st: Final Review

² *Unless otherwise noted, Friday joint sessions are from 2 to 6 p.m. in Fayerweather 200.

Professor: Frederic Levrat
TA: Bo Liu
Theory: Knowledge City
Site: Roosevelt Island New Campus
Program: Density of events - The Campus

Knowledge City : the Campus and the City

If the main “raison d’être” for a city is its production of immaterial information, how does the physical constitution of the city encourage and enhance this non physical production? There is a paradoxical relationship between the build environment and its attempted finality. On the other hand we all accept this condition, as our current experience of the city is a condition of “interface” where the build environment allows us to understand better abstract information. Personal experiences and shared experiences in the city becomes a decoder of the mediated information and Architecture finds a new role as an Interface between the Virtual, Visual and Physical environments.



Where does the Campus End and the City Start?

Most of the urban campuses of New York City are growing rapidly, expanding, in the very competitive real estate market of Manhattan. The campus needs the dense heterogeneous city just as much as the city needs the campus. The semester program is to design a new campus, as a model of a new city. If the city and the campus are undistinguishable, then designing a new campus is designing the microcosm of a new city. The "Univers-city" is an interface between stored knowledge and active users, between the academic campus and the residential city, as well as between the immaterial and the physical. The new campus is the ultimate model of the new urban center, a high density of events, chance encounter and interactions.



Site: Roosevelt Island New Campus

All of the major urban campuses of New York City are currently growing rapidly. In Manhattan, Columbia University is developing a new large campus on 125th street and Broadway, while the School for Visual Arts, City College and Cooper Union are also expanding significantly. NYU has already a fairly large footprint on the East and West Villages, sharing large public spaces such as Washington Square

park with the residential city. Nevertheless, the most ambitious campus development for the city is the new Cornell campus on Roosevelt island. Located at the same time at the center of the city, while disconnected on an island, the Roosevelt island site and program is highly provocative and important for the future of the city.



The SOM master plan is very modest and lack ambition, but I would expect Columbia University students to make a manifesto about a new campus, as if designing the center of a new city.

Program: A campus for the future of the city

The new campus should integrate the experiential nature of the residential dense city with maximum interaction between stored knowledge and active users. Research centers as well as a multi media library, a museum and housing should be integrated to generate the highest possibility of events and interactions in the new Univers-city. Examples of new campuses, inside the city as well as outside of the city are abundant and the studio will be exploring historical examples as well as contemporary examples. In recent development, the notion of

the condensed campus, generating a "knowledge synergy" is expanding from the academic circle to the large corporation. Well known architects, such as Foster, Gehry, Morphosis, etc. are hired by Apple, Google, Novartis, Giant to design their new urban campuses. Circulation, interaction, spatial distribution explore new configurations in these "knowledge aggregation" where private companies and cities invest a lot of energy and resource to generate the optimal environment for the Knowledge production of a XXI century city engine.



Transportation - Interaction - Synergy - Scale

The density of the city is necessary for the urban campus. The modes of transportation between the campus and the city will be enhanced to blur the distinction between the two. The possibilities of the multi layered condition offered by the existing and proposed elevated bridges, cablecar, subway, and other infrastructure network will only enhance the quality and the density of the project. The projects will

address a multiplicity of scales, from the Urban Network strategy to the specific “interface scale”. The Subway, the cable car as well as the network of streets on Manhattan and on Roosevelt Island will be part of the surrounding network.



Architecture as an interface.

The program for the “knowledge city center” is an interface, between stored knowledge – such as written information, digital information – and the human body. It is a mix between an interactive library, a public space, a museum and a coffee shop. Some sort of a cultural Times Square grafted on the Seattle Library and the Pompidou center in a Manhattan residential density; basically, an urban condenser.

The first part of the semester will be oriented toward the different types of urban campuses and interfaces, from public libraries to public squares. The question of the different forms of densities – digital, multimodal, pedestrian, residential and vehicular – will raise the notion of the current formula for a culture of congestion, so well developed and embraced by Manhattan.

The second part of the semester will involve designing the specific building or Network – Auditorium, classrooms, housing, médiathèque, cultural center, café, agora - as well as its relation with the outside

space surrounding it. A special emphasis on the membrane of the envelop, separating/connecting the inside and the outside of different environment and its potential “hypersurface” quality, as a vehicle to transmit and potentially generate information/ knowledge.



Precedents:

Previous Knowledge City Studios, with different sites and programs, have been conducted at Columbia University, Osaka University and Tongji University and generated an important set of data. In addition, I had the chance to organize an international Symposium in Osaka, Japan, on the subject with the participation of Mark Wigley, Beatriz Colomina, Preston Scott Cohen, Fumihiko Maki, Xu Weigo, Takashi Yamaguchi and I. We will be able to analyze their point of view and their lectures.

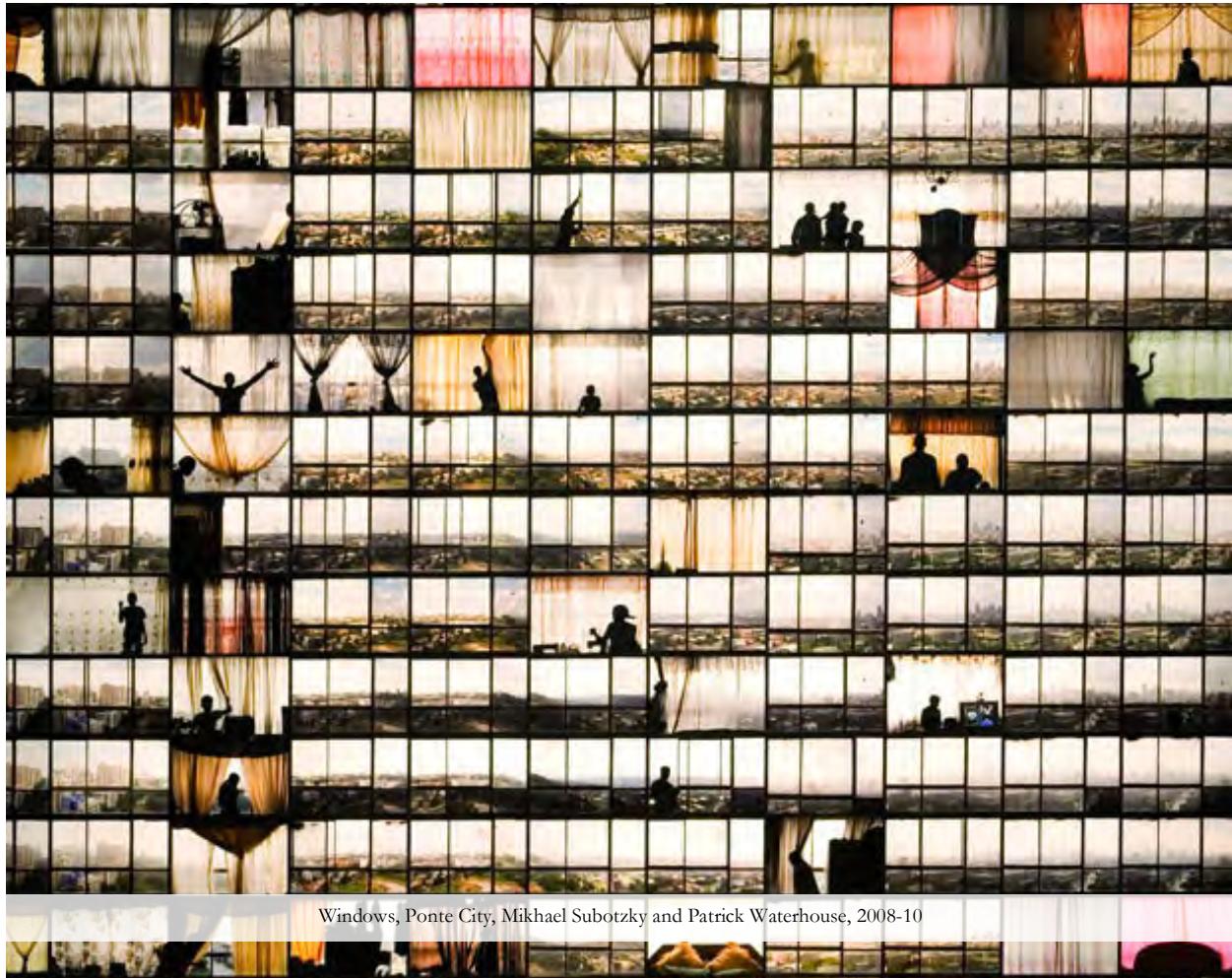


Project references:

Freie University - Berlin - Candilis - Josic - Woods
Columbia University Campus - McKim Mead White
Novartis Campus - Basel - Lampugnani
Apple Campus - Foster& Partners
Le Fresnoy - Bernard Tschumi architects
Giant Campus- Shanghai - Morphosis
Pompidou Center – Paris France – Rogers+Piano
Rolex Learning Center - SANAA
Lausanne EPFL Campus - Zweifel - Strickler
Jussieu Campus - Edouard Albert
Graz Kunsthall – Cook + Fournier
Seattle Library – Rem Koolhaas OMA
Wexner Center for the Arts – Eisenman Architects
Sendai Library – Toyo Ito
Stadt Bibliothek - Hans Sharoun
Aberdeen University Library - Schmidt Hammer
Emerson College -Morphosis
Zayed University Campus - Abu Dhabi
NYU Campus - New York



URBAN FUTURES/FUTURE ARCHITECTURES AFRICA 6.0
Imaging/Imagining the Afro-future City



Can a community whose past has been deliberately rubbed out, and whose energies have been subsequently been consumed by the search for legible traces of its history imagine possible futures?

Mark Dery, "Black to the Future"

Architecture by its very nature is speculative. The process of making architecture conceptualizes ideas, typically in the form of delineations (drawings + models,) that indicate what is possible, what is imaginable for a particular place and time. Modernism's visions of the future, for instance, tethered this imaginary potential to the engines of modernity—technology, democracy, and capitalism. Skeptical of the modernist project's redemptive capacity, Manfredo Tafuri observed of 60s "urban imageability" and "prospective aesthetic" that the creation of multivalent images of the city was an attempt to resolve (albeit a failure) the economic and ideological contradictions of the contemporary city. From the 60s onward McLuhan, Jameson, and cadre critiqued the explosion of images facilitated by the expansion of capitalism at a global scale and the rise of imaging technologies. But with imaging and retrieval technology in everyone's pocket, the production of images has increased exponentially in scale and scope. This increase is further fueled by ever expanding global networks of shared images and video streams. The responsive surface has now become the smart façade, Paul Virilio's overexposed interface has finally made it to zero. Our studio will delve into this contemporary condition to inquire: what is the role of architecture in imaging the city? How might architecture construct a radical imaginary of the city—an Afro-future city? And how can we use this radical imaginary to position architectural critique of existing conditions?



There is a way in which the city itself is very close to animation. Johannesburg is like an animation of a city. That's the first thing to be said about a city that erases itself. William Kentridge, *That which is not Drawn*

Known as Egoli, Joburg, Jozi and a host of other names, the South African city of Johannesburg has been imagined to be many things in its short 100-year history. Built on a river of gold, the natural resources that created its great wealth remained out sight and far below ground. The teeming metropolis above ground became both a plateau of constant erasures and forgetting as well as a terrain of exuberant invention and imagination. The brutal dictates of apartheid law implemented in the spatial planning of the twentieth century city and reinforced by a fortress-style architecture imagined a city that was inhabitable only by white citizens who were buffered by zones of colored residents in order to keep black residents peripheral – spatially, politically and economically, except when their labor was needed to tender the urban machine. Today's post-apartheid Johannesburg imagines itself as the poster child for the neo-liberal multicultural city whose explosive frictions are arbitrated in the jubilant displays of local pride at global sporting events like the World Cup (2010). Recently, Johannesburg's city government imagined and imaged its distinctive skyline as a "World Class African City," however not everyone was persuaded to believe in the brand. A lawsuit from a disgruntled resident charged false advertising given the city's persistent rolling black outs and hi-jacked high-rises. Taking a cue from Afro-futurism, a sci-fi movement that merges of the aesthetic sensibilities of the African diaspora with the emancipatory potential of new technologies, the studio project will follow cyberpunk theorist Mark Dery's charge to "imagine possible futures." The studio project will speculate upon what Johannesburg imagines itself to be in 2115. The 100-year time scale of the projects will enable a speculative images that appropriate the tropes and poetic license of fiction to reimagine Johannesburg and its possible futures.



Johannesburg is a metropolis in the sense used by Max Weber, Georg Simmel, Walter Benjamin, and others, that is, a capitalist formation closely tied to the money economy and individuality, to calculability and fortuitousness. Metropolitan existence here is "displayed" not necessarily through exhibitions or parks, but via an enticing array of consumer labels and products, highways and luminous flows, store windows and huge advertising billboards, new architecture and, more generally, technophilia.

Achille Mbembe and Sarah Nutall, "Writing the World from an African Metropolis"

IMAGING/IMAGINING THE AFRO-FUTURE CITY will pick up the research threads and methods developed by Global Africa Lab (GAL) over the past three years. The first half of the semester the studio will research the spatial, temporal and socio-political dynamics of image creation and circulation. Imaging will be studied at multiple time scales—*past/present/future*. Student teams will study the technologies that produce and the infrastructures that circulate images. The first four-weeks of the studio hosts a workshop whose series of tutorials introduce techniques of data mining, visualization, and spatialization through parametric modeling. With specially developed software for the studio, students will sift through social media feeds of Instagram, Vine, Flickr, Facebook, MXiT, and other relevant resources of image production and circulation. These topological models developed in Rhino with Grasshopper* will allow these systems and phenomena to be studied in temporal magnitudes. These animated parametric models and conventional mappings and diagrams will capture the temporal and spatial dimensions of the inequalities embedded within these systems and networks. This research will be further honed through a weeklong visit to Johannesburg in the fifth week of the semester to engage in further research on project sites. We will hold project reviews and workshops with architects, artists and curators at Studio X. With the rich body of research and the parametric and analogue models as a foundation, the studio will develop for the rest of the semester architectural propositions in the form of videos on six sites that radically imagine Johannesburg in 2115. Students will develop theses on the utopian or dystopian possibilities of the city's architectural and urban futures.

*Note: prior knowledge of these tools is not required; but interest in learning how to use them is mandatory!

ARCHITECTURE | HISTORIC PRESERVATION | JOINT STUDIO FALL 2014

Columbia University Graduate School of Architecture, Planning and Preservation

A4005/A4105 Sect.017 Advanced Architectural Design Studio V Profs. Otero-Pailos | Konyk

OSLO JULY 22



HOYBLOKKE GOVERNMENT BUILDING OSLO AFTER BREIVIK ATTACK, 22 JULY 2011.

OVERVIEW

The Government Building in Oslo Norway was designed by Erling Viksjø (1910-1971) and completed in 1958. Designed in a late modern brutalist style, the "Høyblokk" incorporated sandblasted cast concrete "murals" after designs by the artist Pablo Picasso rendered in a process patented by Viksjø called "Naturbetong". Part of a complex of Government Buildings situated in the heart of Oslo, it housed the Offices of the Prime Minister of Norway among its other functions.

Mid-day on July 22, 2011, a racist, far-right militant, Anders Behring Breivik, drove a truck laden with explosives to the main entrance of the building and walked away. Ten minutes later it exploded, killing eight persons and injuring scores of others, causing enormous damage to the government center. Later it became clear that this first attack was only a diversion; as while emergency response to the horrible scene of the explosion was unfolding, Breivik, posing as a police officer, boarded a ferry to Utøya Island, the site of the Norwegian Labor Party youth camp. Breivik then opened fire on the vacationing youth present, killing 69 adolescents. Like Timothy McVeigh and the Murrah Building in Oklahoma City, it was a case of domestic terrorism aimed at the built symbol of Government, the Høyblokk, combined with a terrifying Columbine-like hunting down of innocent, unsuspecting adolescents on small Utøya Island.

The targeting of symbols of power and governance in the form of significant works of architecture in significant locations in significant cities is a fairly recent phenomenon, one that is reoccurring with disturbing frequency worldwide. Our interest this semester will be the process of what comes next; what is the role of architects and urban designers in the design of an appropriate response? Like the quandary posed by the abrupt destruction of the World Trade Center Twin Towers, Oslo's officials and the larger population has struggled with what to do next. The fact that the Høyblokk survived structurally intact has made this quandary even more difficult. Should it be restored with the previously occupancy of government offices is a show of defiance? Or was this so traumatic an event that a different response is needed, one that veers towards memorialization of the victims and the site?

ARCHITECTURE | HISTORIC PRESERVATION | JOINT STUDIO FALL 2014

Columbia University Graduate School of Architecture, Planning and Preservation

A4005/A4105 Sect.017 Advanced Architectural Design Studio V Profs. Otero-Pailos | Konyk

OSLOJULY22

A Competition for a temporary memorial for the site was held this year and the results can be seen here: <http://www.architecturenorway.no/stories/other-stories/hoyblokka-revisited-2014/>

The schemes have been well received by the residents of Oslo. However, being temporary solutions, the ultimate determination of the final form and nature of the future use of the site is still an active discussion.

The task of the Studio will be to propose the future use for the stabilized structure of Viksjø's Hoyblokke, proposing how to reintegrate it into the life and fabric of today's post-Breivik Oslo. What is the most appropriate next architectural step, incorporating the latest theory of preservation and urban marking of events of major import? Complicating this issue is the existence of significant works by Picasso embedded within the architecture.

The Studio will travel to Oslo the third week of September, visiting the site and meeting with faculty and students of Oslo's AHO, the chief planner of Oslo, as well as members of the planning process for the Government Complex. Students will then propose solutions that incorporate all of these various difficult issues into a proposal for the future of the Hoyblokke Site.

Professor: **Nanako Umemoto**

Teaching Assistants: **Hilary Simon + Neil Cook**

YOKOHAMA REDUX

The occasion of the Yokohama Port Terminal competition in 1995 was a watershed for the discipline in many respects. A new generation of architects and theorists across the globe seized it as a platform to explore emerging modalities in design, design technology, and delivery which would in the ensuing decades become the medium through which and against which much of contemporary practice plays out. To understand this shift is to recognize that Yokohama elicited changes not simply in one architectural register but across almost all of the disciplinary and sub-disciplinary categories that involve the conception and practice of design.

Yokohama came at a threshold moment when design concepts submitted to the jury: from typology to historicist post modernism, to neo-modernism, to deconstruction came up against proponents of fluent geometry, topology, single surface projects, and a host of emerging design models inspired by philosophical concepts of becoming (Deleuze), complexity theory, non-linear dynamics, etc. For this new group architecture would break its venerable pact with ideality and plunge into the material world and the 'real' through alliances with disciplines as disparate yet materially rooted as structural engineering, biology, and network theory. All of this being underwritten and sustained by then emerging technologies of the digital which while not a necessarily a cause of this work certainly made it possible. Finally and crucially, for the purposes of this studio, almost all the practicing proponents of architecture as a speculative discipline either directly or indirectly took part or had a hand in this competition; through word, influence, creative action or deed.

The disciplinary significance of this competition and the built project that ultimately emerged was remarkable in a number of ways. First the very fact that it was a competition meant that it would be possible to premiate and to realize a large scale commission based upon a speculative architectural project by an, as yet, untested partnership afterwards known as Foreign Office Architects (FOA). The work it may be argued did not emerge in a vacuum but, retrospectively, emerged in the confluence of prefiguring projects from OMA on the one hand and the architects, engineers, and theorists working in and between the Architectural Association in London and Columbia University in New York. Yokohama was exemplary because it was among the first in that period to pass the reality test from conception to implementation and in doing so redefined territories for both the speculative projects that followed and their ramifications in practice.

One of the guiding tropes from this period was the notion that architecture should involve itself in models of continuity and coherence: spatial, surface, programmatic, etc. as opposed to models of discreteness and boundedness: objects, collage, disjunction, etc. The power of continuity was that it seemed to apply to radically different approaches to architecture irrespective of ideology. So, for example, a "representational" argument for continuity like that made by FOA insisted that architecture should mirror the zeitgeist. They like Rem Koolhaas argued that since the reach of Neo-Liberal economy respects no regional or national boundaries and identities, so too must the architecture. Thus an ideological reason would govern the choice of models. There were other more formally inclined practices motivated less by rhetoric than effects who would explore the selfsame models because they opened up 'ossified formal categories' available to the discipline and offered a vastly expanded spectrum of formal and organizational possibilities. Similarly the zeitgeist arguments post 9/11, the rise of regional and religious conflicts, etc. has now shifted towards architectural concepts of boundedness, containment, channeling, bubbles (Sloterdijk), objects (Harmon), etc.

This studio will reengage Yokohama with neither nostalgia nor negativity. With the passage of twenty years the 'shake out' has occurred. Following Kipnis' exhortation that we regard the best of the last twenty years not as a history of failure (as Tafuri regarded modernism) but (given realistically what architecture is capable of affecting) a history of success. Indeed it may be argued that some of the best work being done today freely combines models of continuity with those of the discrete; the problem lies not in the models but in the obligation to justify them in purely ideological or representational terms and thus perpetuating the specious argument that continuity and discreteness are mutually opposed categories.

This studio will undertake the Yokohama Port Terminal competition twenty years out based upon the accumulated knowledge gleaned from the salient speculative projects to emerge out of the competition and the subsequent trajectory of those ideas in the field. The work will proceed in three phases. First all students will undertake a formal analysis of a significant entry in the competition. This will involve not only analysis of the project itself but immediate antecedents to the project as well. The second phase involves taking the design principles derived from the analysis and creating a design model that will become the basis for your proposal. This involves a shift from the analytical mode to the projective mode. This model will factor in subsequent developments related to that model over time as shown in projects and design research that followed. The third phase will be the deliberate introduction, at three distinct scales and using three different systems, of discrete programmatic elements into the continuous models analyzed in the previous phases. This final phase brings us to projects and problems that are actively being worked through today. As such they are open ended. Assuming you take this material as seriously as your professional colleagues your successes and failures, will be vital contributions to the field.

Selected material from the studio will be presented next year in symposia at Tokyo University and Princeton University, celebrating the 20th anniversary of the Yokohama Port Terminal Competition and in a planned publication.

PROGRAM

The footprint of the site is 63m x 412m and includes the following program:

• Four shipping berths	
• Departure and arrival hall	2,000 m ²
• C.I.Q (Custom, Immigration, Quarantine)	2,500 m ²
• Cruise Deck	3,000 m ²
• Visitors Deck	4,000 m ²
• Machine rooms and storage	2,500 m ²
• Parking	13,500 m ²
• The Tower	
• Lobby	600 m ²
• Port Service Center	700 m ²
• Offices	8,500 m ²
• Osanbashi Hall	2,000 m ²
• Restaurant / Café	3,000 m ²
	Total 42,300 m²

ASSIGNMENTS

1: CRUDE TYPES: The Original Entries

Research the entries of the 1995 competition. Consider the constraints of footprint, section and program, as well as the deliberate reactions of each competitor, whether layered datum (FOA), shed building comprised of three hinged arches (RUR), or giant sushi (Greg Lynn). Analyzing the original entries, develop several volumetric extractions that reinterpret the projects and their principles.

2: THE VESSEL: The New Universal Space / Space of Ubiquitous Difference

Our initial studies will deal with the solid/void and material composition of specific masses. At this stage, the focus of the explorations will be the patterns of solid, void, color, and opacity in terms of grain, directionality, and orientation. These configurations will become the basis for further transformations that will also be evaluated relative to specific issues of building performance, ie. environmental, transparency, structure, access, and circulation.

Beginning with a reusable mold at least 32"x6"x3", we will produce a series of castings, systematically filling the mold with homogeneous or heterogeneous objects that can be removed after casting. Flexible rubber or plastic components are recommended (spaghetti balloons, inflatables, toys, etc). Each student should produce 3 castings: A repetitive system with inclusions, a completely heterogeneous system (all inclusions), and a composite of the repetitive system & the heterogeneous system.

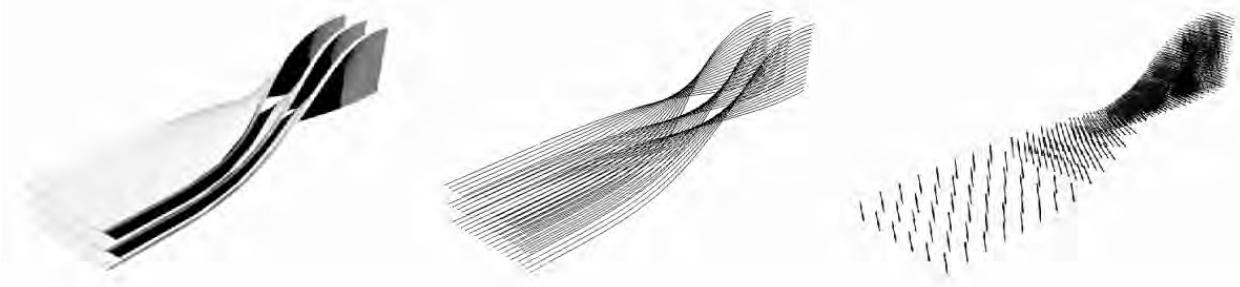
In contrast to the classical tectonic model, where structure, glazing, infill, etc are articulated as assemblies, we will explore the development of a material assemblage or mixture which will locally assume the various roles formerly assigned to a system of tectonics (ie. structure, transparency-opacity, thermal performance etc.) As an entry into this expanded concept of solidity, we will assume that the casting media itself will not be monolithic, but a compound or mixture. This could be through the inclusion of a finer grain material into the mixture that will produce transparency, changes in color, etc. What we are after is a dynamic interaction between the void forms mentioned and the fluid medium which will calculate a fine pattern of organization as it flows around the void forms.

3: THE VOLUME

Taking the geometry of the castings as flexible systems that be deployed at various scales and to varied effect, we will apply the specific forms & logics of the castings to a thickened volume. This will entail consideration of how the systems are scaled, stacked, repeated, chopped, or combined both vertically and horizontally. As opposed to the clear-span tectonic of the volume, we will conceive of the roof, floor, and facade planes as thickened zones that may intersect and overlap to such an extent that the interior volume is expressed as full rather than empty.

4: TECTONIC AND STEREOTOMIC

In *The Four Elements of Architecture*, Gottfried Semper makes a radical distinction between tectonics, an architecture of parts comprising linear matrices, and stereotomy as an assembly of solid units conceived as a solid form. To this point, we have been dealing primarily with stereotomic (solid) models. Aimed at producing a different kind of composite, each model should be re-interpreted tectonically, either in full or in part. For example, some portion of the solid geometries may be maintained as a bone-like structure, while others will be imagined as frame or infill. Surface articulations and actual component divisions may widely diverge. Implicit in this shift toward tectonics are qualitative issues of materiality such as transparency/translucency, polychrome, etc. Work with the application of patterns to develop a logic that could be at once both structural and decorative. Consider three methods of deployment of a unit on your topological model:



Planar

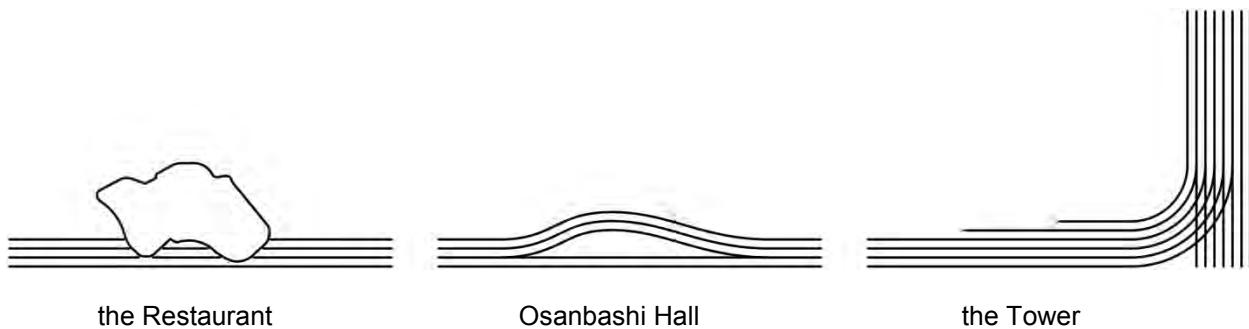
Linear

Punctual

5: FIGURES AND FIELDS

Three programmatic elements: the restaurant, Osanbashi Hall and the tower will be utilized to explore how discrete architectural elements may be placed into relationships with continuous systems. We will explore three types of discrete inclusions:

- a) **The Restaurant** will be a discrete object entirely independent of the field it is deployed in (the field around it however may react with a boundary organization).
- b) **Osanbashi Hall** will derive its objecthood from the field itself: the field will be manipulated to produce a localized singularity which will define the boundaries of the hall
- c) **The Tower**, rivaling in scale and physical magnitude the terminal itself, may be considered a compound object sharing traits of both the discrete object and the singularity. Three elements of the building system which are typically discrete i.e. the structure, the envelope, and the floor plates may each subscribe to the aforementioned systems (a & b) while having to work together.



6: ACROSS SCALES

Working from the composite system, we will develop a design model across all three scales. Associated with the exploration of a model across scales is the realization that a change in scale will have both quantitative and qualitative consequences. This will likely entail shifts in the initial model as it is developed in its parallel forms. The final project will be a suite of drawings & models exploring the architectural consequences of each system, ranging from the very small to the very large.



Columbia University

A6005 Global Cities and Architecture Advanced Studio

600 Avery: M, W & F (2:00-6:00pm)

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Studio TA: Emanuel Admassu (ea2522@columbia.edu)

GSAPP

3rd Year

Fall 2014

Capital (in)Fluence:

Russian Capital Immigration in London



Russian Ruble Currency



Silvertown Quay in London's Royal Docks

"The citizen is an unstable subject. So is the immigrant, the irregular... [citizenship] is an incompletely theorized contract between the state and the subject. In that instability there are possibilities, both good and bad."

- *Saskia Sassen*

Objective:

The Global Cities and Architecture studio is open to all 3^d year M.Arch or AAD students. This studio, Capital (in)Fluence, will explore architecture's role in global financial networks. As architects are increasingly tasked to design cities, the design methods of architecture—rather than urban design or planning—offer a way to rethink the role of architects in a rapidly urbanizing world. The unprecedented growth and change in global cities demands architecture to reengage with the city, not by designing iconic imagery, but with the *quickness, precision, and concepts* of the architecture discipline. These qualities do not lie within the traditional urban master plan, but instead in the notion of "architectural urbanism". The studio will address the essential issues confronting global cities by designing at an architectural scale in order to generate urban strategies, resulting in a critical "*reverse master plan*" process.

Perhaps the most significant force reshaping global cities today is the flow of foreign financial capital into urban real estate markets. The Capital (in)Fluence studio will analyze the flow of “immigration capital” between two global *capitals*—Moscow and London—to generate *experimental building design* strategies. This vast transfer of Russian capital, accompanied by 150,000 Russian expatriates over 12 years, has found safe haven in London’s real estate, financial, media, and art markets. This large scale immigration of Russian citizens with their financial capital has been made possible by British “tier 1” visas—residency provided for those who invest £1mil—while transforming entire neighborhoods in London. The studio will explore the architectural and urban futures for the Silvertown Quay development in London’s Royal Docks. Students will propose architectural scale projects; in order to define the urban influence that global “immigration capital” has on an increasingly urbanized London.

Project Description:

Working in groups or individually, the studio will be conducted as a form of design research—in which research arguments are defined by design proposals. This format will allow students to develop their own design research, guided by individual approaches to define architectural and urban areas actively transformed by foreign capital. Each project's definition of "capital immigration" will be guided by the Global Cities and Architecture program's research themes—which range from food to transportation to energy. The studio will include two project sites—design research for a small site in Moscow while the main project will be in London's Silvertown Quay. The Moscow project will be a "proof of concept" for the design proposal in Silvertown Quay.

Silvertown Quay is a waterfront "enterprise zone" in east London, slated to become London's third international business center. The architectural proposals for Silvertown Quay will be defined by the design research—it may be a building, a group of buildings, a network of global "brand pavilions", a multimodal train station, or a transport bridge. The studio will produce a diverse set of experimental building projects that will inform individual design methodologies for "reverse master plans." This process will reverse the typical flow of the master plan; instead of designing from the generic to the specific, students will design architecturally specific proposals that transform the nature of the "generic" master plan. The question of "immigration capital" and its influences—architecturally, socially, and politically—will be researched in Moscow and experimented at both architectural and urban scales in London.

(in)Fluence Symposium and Studio Travel:

The Capital Influence studio will travel to both Moscow and London. In Moscow, students will be part of a GSAPP sponsored symposium, "(in)Fluence." The four day symposium will be organized around the studio's theme of influence—after all, architecture has always been about influence but even more so with global networks. The symposium will occur in Moscow's three architecture schools—Strelka, Moscow Architecture Institute (Markhi), and the Moscow School of Architecture (MARCH)—also measuring their influence upon each other. Following the Moscow trip, travel to London will allow for the site visit as well as meetings with local officials, architects and other experts. *Travel to Moscow will occur from October 3^d to 8^h. Students will then travel to London from October 8th to 14th.*

Program :

Each group or student must develop a programmatic ambition that identifies opportunities within their individual design research and the site of Silvertown Quay. There will be two global programs in the studio. The Moscow program, a bank branch of the future, will require students to design for global capital immigration. The bank branch of the future will envision physical manifestations of the financial network between Moscow to London. The main studio program, for London's Silvertown Quay, will be defined by each student based on their design research for the Moscow bank branch of the future. Students will be limited to develop architectural scale programs for a portion of the Silvertown Quay site.

Site:

Each group or student will develop their design research and proposal in two global capitals—Moscow and London. The site for the bank branch of the future project will be near the Studio X Moscow pop-up facility. The movement of people and capital between global cities is the stated mission of the internationally focused Silvertown Quay development. The London site will be a portion of the overall 62 acre Silvertown Quay development—each project will need to define its own site within the larger development. Students will be required to design the spatial and virtual site relationships between Moscow and London—in the form of architectural proposals and a "reverse master plan."

Schedule:Project 01A: Immigration Capital Research (10%)

(Review on September 15th; 1 week)

Preliminary research of Russian immigration capital will be conducted on an individual basis.

Each student will analyze how Russian immigration capital navigates the global financial system and influences both capitals—Moscow and London. The research must be iteratively explored for their potentials in defining unique approaches to “immigration capital.”

Project 01B: Moscow Bank Branch of Future (10%)

(Review on October 1st; 2 ½ weeks)

Groups (or individuals) will translate their preliminary research into a design proposal for a bank branch of the future. This will require a design argument about capital flight out of Moscow and possible futures of the Russian financial system. After the project review, students will travel to Moscow for the (in)Fluence symposium and continue their travel research in London. Presentation of their work will be made to local architects while the studio is in London.

Studio Travel

(Moscow, October 3rd – 8th; London, October 8th-14th)

Project 02: Mid-review (30%)

(Mid-review on October 29th, 2 weeks)

Each group or individual will present at the mid-review their Moscow design research and process for designing a portion of London’s Silvertown Quay. The iterations must clearly define the project’s architectural argument relative to both site and program.

Project 03 (10%)

(Pre-final review on November 24th)

Project 04 (40%)

(Final review week of December 1st, Date TBD)

Grading Policy:

In general, grading for the semester will proceed as follows:

30%	Material presented at the mid-review
40%	Material presented at final review
30%	Development of the work through the semester

Grades will be given in relation to the student’s ability to meet the course deadlines, deliverables and course objectives. Students are entitled to one unexcused absence. Further unexcused absence(s) will result in the lowering of your final grade by one grade. Three unexcused absences are grounds for failure. Absences will be excused in accordance with university policy and will require a note from a physician. Please notify your professor in advance if you know that you will not attend class for any reason.

Studio References:

1. Burdett, Ricky and Sudjic, Deyan, eds. “London” in *The Endless City*, Phaidon, 2011.
2. Sassen, Saskia. *Territory, Authority, Rights: From Medieval to Global Assemblages*, Princeton University Press, 2006.
3. Sloterdijk, Peter. *In the World Interior of Capital*, Polity, 2013.