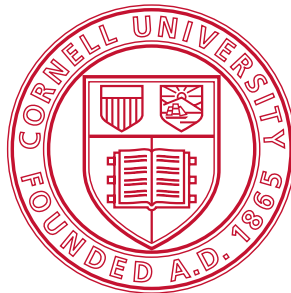


COLLEGE *of* ARCHITECTURE, ART & PLANNING
DEPARTMENT OF ARCHITECTURE

SPRING 2017
ELECTIVE COURSES



Cornell University

COLLEGE *of* ARCHITECTURE, ART & PLANNING
DEPARTMENT OF ARCHITECTURE

**ARCHITECTURAL
THEORY**

Spring 2017

ARCHITECTURE 3304/6304

Column, Wall, Elevation, Façade:

A Study of the Vertical Surface in Architecture

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Field and figure relationships (the interrelation of parts dominated by the general character of the whole) are the general themes used to study numerous issues relevant to the design of elevations and facades. Case studies from antiquity to the present, with an emphasis on Renaissance and Modern periods, are used.

The first part of the seminar traces the evolution of the elements of architecture, with the column being the primary element. The column is dealt with as an iconographic and decorative element; as a primitive marker of domain; as a structural device in the composition of facades. The geometric and spatial properties of column bays and grids, and the relationship of the column matrix to walls and wall-like structures, are differentiated.

The second part of the seminar deals with the wall, in particular, architectural walls as the fields upon which the elements of architecture are composed as figures (field and figure strategies). The role of the wall in architecture is discussed at length: wall as fence, wall as divider, wall as frontal plane, wall as façade, wall as filter, wall as com-positional theater, etc. Devices such as open versus closed composition; regulating lines; scale versus proportion; field versus figure; literal and phenomenal depth; transparency; architectural content; geometric properties of forms; and various sys-tems of organization are discussed. A series of short exercises, mostly of a collage nature, are done demonstrating an understanding of the ideas presented. A series of readings, including, for example, "The Provocative Façade: Frontality and Contrap-posto," by Colin Rowe, are discussed in class (readings vary and will be handed out in class).

The final series of lectures examine Venetian buildings as models, beginning with the "Ca de Oro," and concluding with a review of minor Venetian facades using Venezia Minore by Elge Renata Trincanato. These buildings are analyzed relative to the issues previously raised in the seminar. (I have found that by using the minor buildings of Venice, many façade issues can be addressed without usurping more famous build-ings to be used by the students later in their oral presentations and papers.)

Living the House. Architecture and Film

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Ben Rose House in the movie "Ferris Bueller's Day Off"

The spaces where human life becomes domestic are more than just an answer to the evolution of the modern ways of living. They have defined a research field for experimentation. The single house is where modern architecture has been pushed far beyond the established traditional ideals of what a living-space should be. The usually ease of the building process, the well-known program and the reduced number of players define a controlled environment which results in a clean and direct conversation from the architect to the final building. Even more than social housing developments or public buildings, the single house itself is maybe the typologies where modern architecture has become more successful and radical.

At the same time, it is not accidental that some of the houses that are shortlisted in the history of modern architecture are the scenario where many films have been shot. Those magical spaces have the ability to transform human daily stories into something closer to the ontological categories rather than remaining just personal or particular scenes of our human being. More than any other visual medium, film, by virtue of the size of its audience, its global dissemination and the growing influence over culture as a whole, helped shape popular perceptions of architectural modernism.

This theory course will go through some of the most prominent examples of modern single houses, by studying how they are depicted in some movies. Through that selection, it is possible to better understand some of the concepts that have driven the practice of that outstanding and successful typology: such as the shack, the palace, the crystal box, the floating space, the monument or the enclosed-landscape, among others. At the same time, when those spaces are used as a movie set, they perform somehow differently, opening the door to a new range of interpreting domesticity. The course will also dissect how architecture and the city have also been shown or used in movies through its evolution, and how the avant-gardes used media to strength the main arguments of modernity.

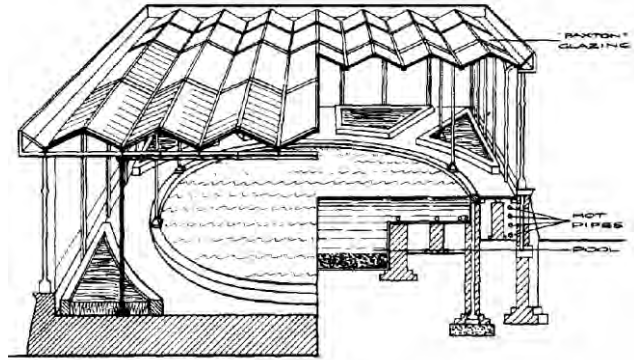
Lectures will be complemented with projections and discussions. A presentation and a paper should be submitted as a result of personal research on one of the concepts, houses or films studied through the semester.

TYPOLOGICAL CLIMATES OF RESISTANCE

INSTRUCTOR
COURSE NUMBER

CREDIT HOURS
CLASS LOC
HOURS
COURSE FORMAT
TIME FRAME

Ryan Ludwig (VC)
ARCH 3308/6308:
Sp.Tp. Architectural Theory
3
157 Sibley Hall
R, 12:20-2:15pm
Elective Seminar
Spring 2017



"Put simply, humans make environments and environments make humans – and human organizations"
– Jason Moore, in *Capitalism in the Web of Life*

COURSE DESCRIPTION

As architects working within the newly articulated geo-political moment of the anthropocene¹ we may find ourselves advantageously positioned to address the concerns of this new epoch through (re)making the 'natural' world(s) we inhabit – the constructed environments we occupy and call home. In this way the design and fabrication of these new productions of nature,² these *climates of resistance*, regard the built environment in two ways: 1) as an adaptive *mediator* of survival in a shifting external environment, 2) as an adaptive *instigator* of current and future biological change through the facilitation of physiological, psychological and affective responses of inhabitants. In this sense architecture is the setting that sustains and shapes our lives; it is an essential part of what it even means to *be* Human. Architecture conceived with this awareness will require a rethinking of its parameters, moving beyond the visual modalities of geometry, composition, icon or style, to instead utilize various invisible / qualitative materials such as ambient temperature, light intensity, relative humidity, air composition, kinesthetics, color temperature, air pressure, auditory and olfactory stimuli, etc. This re-conceptualization provokes the following questions:

- How can / does architecture mediate the external environment through the production of interior climates of resistance? What are the means, methods and materials of this approach?
- How might invisible / qualitative parameters be utilized towards architecture's materialization?
- How might these interior climates instigate productive responses within inhabitants, as well as within the broader external environmental context? What are the limits of this approach?
- What are the potential social, cultural and political effects of this re-conceptualization?

Rather than a secondary necessity utilized for comfort, the control of interior climate(s) to mediate the external environment and instigate productive effects, are fundamental attributes of various building types: bathhouse, spa, greenhouses, hospitals, rehabilitation centers, extreme dwelling units, air supported and air inflated structures, etc. The seminar seeks to answer the above questions through a close examination of these typologies and the invisible / qualitative materials and systems that define them.

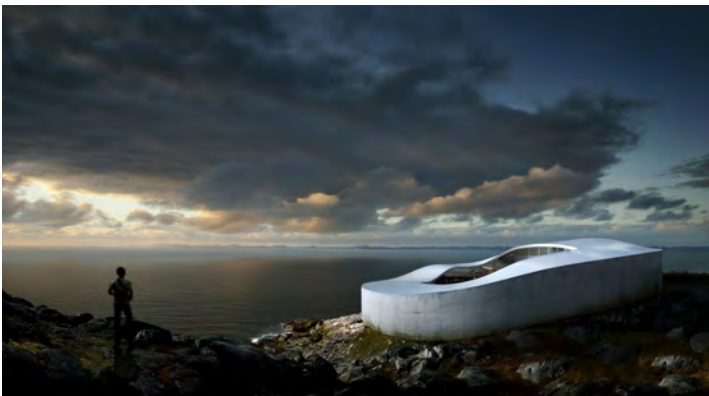
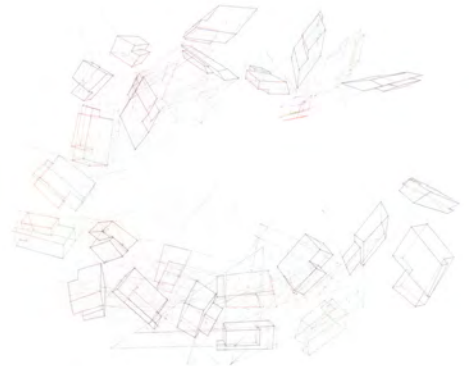
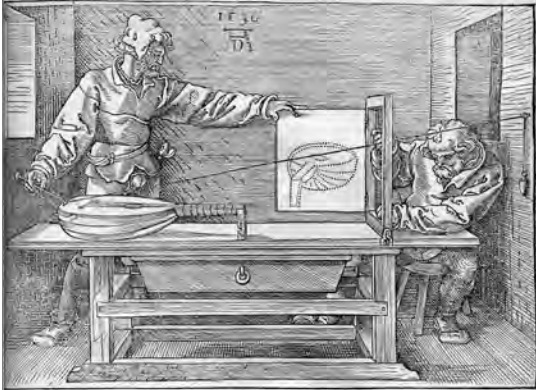
METHOD

Students will work in small groups researching selected case study projects representative of their chosen typology. These will be explored through 3d modeling, drawing documentation, as well as genealogical and analytical drawings focused on the following: 1) the technical / mechanical systems utilized for achieving internal climatological regulation, 2) the material tectonic strategies utilized for sustaining these climates, as well as promoting aspects of health, healing, cleansing, etc. 3) their potential social and/or cultural significance 4) the means and mode of instigating specific affective responses. The class will be organized into two parts alternating every other week, the first part being a short lecture + discussion focused on assigned readings, the second part being a pinup + discussion of the current typological research / drawings. For the final project students will design and develop analytical 'pamphlets' reflecting their graphic research into the *mediating* and *instigating* aspects of their typology uncovered throughout the semester, as well as a series of short written statements explaining the relevance of the selected projects.

¹ See Paul Cruzen and Eugene F. Stoermer, *The Anthropocene*, IGPP (International GEosphere-Biosphere Programme) Newsletter 41, 2000.

² See David Gissen, "The Architectural Production of Nature, Dendur/ New York," *Grey Room* Winter, No. 34 (2009): 58-79.

Projected Worlds: Critical Reevaluations of Architectural Representation

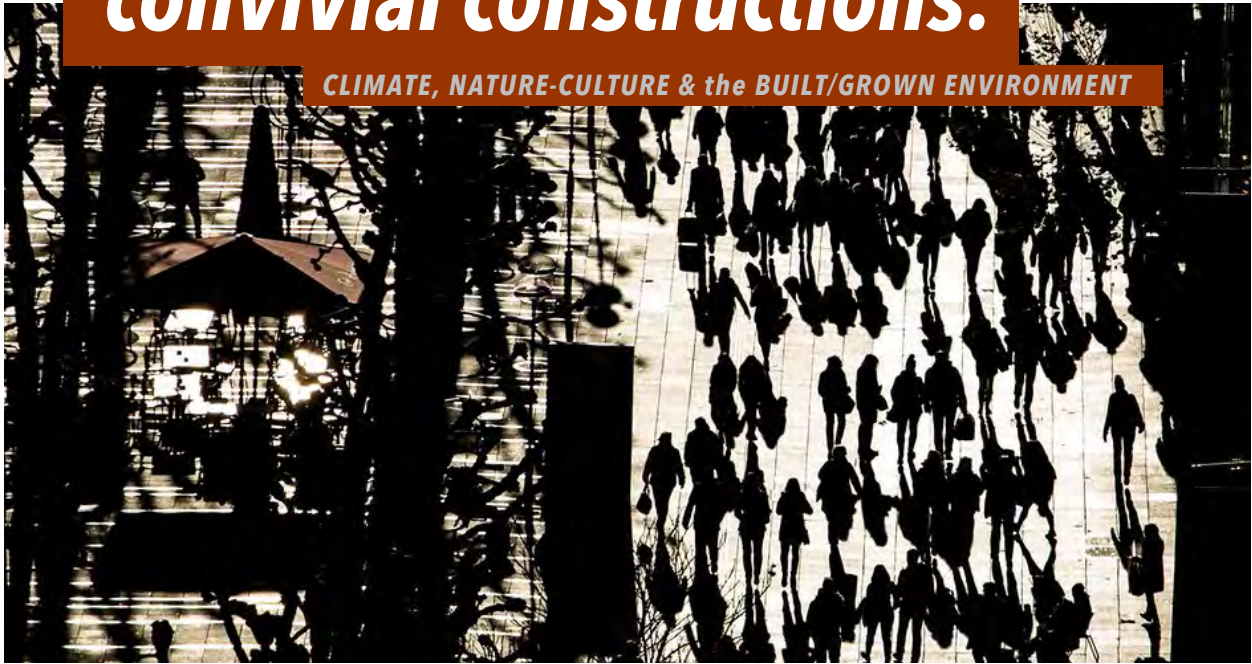


Architectural projection and representation, at its core, has always oscillated between responsibilities of expressing the projective desires of the architect and the necessities of instructive communication. The curious conflation of the problems of depiction (the burden of pictorial resemblance) and instrumentality (the development of a notational system analogous to a musical score) through the medium of drawing is a condition unique to architectural representation and particular to the architect's engagement with the matter of architecture. As the late critic Robin Evans has famously stated, "Architects don't make buildings; architects make drawings and models of buildings." This rather simple and innocuous statement reveals that which is central to the discipline of architecture is not the production of buildings necessarily, but the construction and projection of a variety of autonomous and virtual spaces through representation. These necessarily spatial abstract structures of representation, however, are not merely neutral vessels for architectural thinking and designing, but are, in and of themselves, engines for discursive innovation, producing precise and novel forms of vision, thought, and, most importantly, world-making.

This course will critically analyze both historical and contemporary forms of architectural representation through numerous essays, texts, drawings, and/or images, in order to situate the role of architectural representation and projection in relation to a variety of architectural discourses. The class will study the particularities and evolution of projection techniques and mechanics, the relationship of projection systems to particular socio-political paradigms, and the robust qualities of representation in relation to shifting concepts and ideologies. Research will be pursued through both verbal and written presentations, as well as through graphic exercises.

convivial constructions:

CLIMATE, NATURE-CULTURE & the BUILT/GROWN ENVIRONMENT



ARCH 3308/6308 Special Topics in Architectural Theory; ARCH 4408 Special Topics in Architecture, Culture & Society
Spring 2017 | 3 credits | Instructor: Foster (jf252) | Thurs 2.30 – 4.30pm | Sibley 261B

Theorists argue that addressing climate change requires problematizing received nature-culture binaries, and cultivating a broader awareness of the importance of ‘working with nonhuman agency’. One example of such an interactional subjectivity might be found in climatic understandings, which are not just a matter of physiology, psychology or biography, but are social, political and culturally-constructed, rooted in specific locales and histories. Buildings and cityscapes play an important role in this, not only “responding” to climate, or ‘ambient weather conditions’, but also bio-politically shaping agential, aesthetic and moral understandings of those conditions. The central role of climate in this environmental reciprocity increases when we recognize that cityscapes are as much *grown* as they are *built*. Ambient weather shapes and sustains *all* aspects of the cityscape; both its organic and inorganic components are de/constructed by unending, ‘routine meteorological actions’ that dialectically inform an array of human practices. Paradoxically, climate’s ‘unchanging changefulness’ makes it a key agent stabilizing informational relations between the human and the nonhuman *in* and *through* time in a given locale.

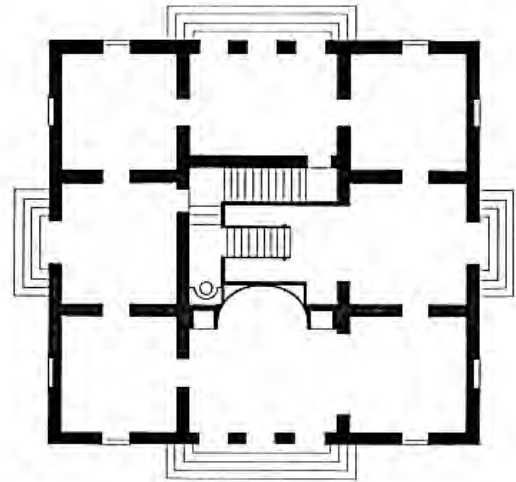
This course explores this climatic co-production of urban space and nature-culture by juxtaposing a history of ‘urban climate’ as an account of ever-increasing architectural and planning regularization and control with a history of it as something figured through the cityscape’s multiscalar, intersecting materialities and performativities. The course has a strong *research and representation component*. Though ‘historical’, it aims to give students analytical/theoretical tools that can be applied to contemporary cities and design problems. After introductory classes on climate, culture and environment, the course will adopt a fortnightly rhythm, alternating between assigned readings on a specific topic (ie ‘*climatic regimes*’; ‘*building typologies*’; ‘*urban morphologies*’; ‘*infrastructures*’; ‘*urban materialities*’; ‘*social & public life*’; ‘*natures & ecologies*’; ‘*weather genealogies & narratives*’ etc) and presentations of research on how this topic plays out in a range of global cities that historically developed a distinctive character due to ambient weather conditions. Over the course of the semester, students will produce an *urban cultural-climatic atlas* that compares how the built/grown environment and daily life co-constructed ‘weather understandings’ in these cities. This collective document will also form the basis for a final exhibition with invited external critics. Although the ‘forms of evidence’ for this research will be primarily *meteorological* and *architectural*, students will also be expected draw on *social, cultural and environmental histories*, and *urban representations* written (fictional/non-fictional) and visual (ie. painting, photography, movies etc.) The course is open to upper level undergraduate and graduate Architecture students, as well as students in Urban Studies, Planning, Landscape Architecture and other disciplines.

Types and Figures

The seminar will discuss various lines of typological argumentation, advocating a concrete and figurative alternative (Schinkel, Semper, etc.) against reductive, schematic, and diagrammatic approaches. It is set up to construct 'other' architectural typologies by exploring the connection of type with figure/image. Having explored different versions that construct type as a rigid in contrast to a generative form, students will develop their own (post-) typology as a collection and layout of a series of figures. The objective is to critically rethink the notion of type and, at the same time, to make use of it as an architectural device rooted in history, as an approach to collect and produce architecture through a methodology directed to the past and future—from within the discipline.

Type, within architecture, is a reference to past architecture. Yet, it is an operative or projective approach to history and therefore also its challenge. Type is an ambivalent figure existing in a self-referential sequence and implying a historical series within it. It is not the repetition of the same (ideal), but an attempt to capture distinctiveness in variation and alteration, not of a universal, but out of lack of any universal model.

Typology then is its ideology and methodology. It is a fiction of an order, one of various possible histories and conventions, a construction to (re-) define what is typical, what is common (good). Typology is invented by recognizing and remembering figures, their relationships, connections, structures, arche- or prototypes. It is very much an observation imposed on what is perceived and which is in the process invariably transformed. Architecture is made and remade by imposing such a fiction on "reality." Fictions are good to think with, of course.



Literature (selection):

Argan, Giulio C. *On the Typology of Architecture*, 1963
Colquhoun, Alan. *Displacement of Concepts in Le Corbusier*, 1986
Colquhoun, Alan. *Typology and Design Method*, 1969
Eyck, Aldo van. *Ten Opinions on the Type*, 1985
Oechslin, Werner. *Premises for the Resumption of the Discussion of Typology*, 1986
Rossi, Aldo. *Architecture of the City*, 1966
Rossi, Aldo. *A Scientific Auto-Biography*, 1981
Ungers, Oswald Mathias. *The Dialectic City*, 1997

Karl Friedrich Schinkel: *Das Architektonische Lehrbuch*, ed. by G. Peschken, 1979
Semper, Gottfried: *Entwurf eines Systemes der vergleichenden Stillehre*, 1884
Vidler, Anthony. *The Idea of Type: The Transformation of the Academic Ideal: 1750-1830*, 1977
Vidler, Anthony. *The Third Typology*, 1998
Borges, Luis Jorge. *The Analytical Language of John Wilkins*, 1937–1952
Foucault, Michel. *Discipline and Punish*, 1995
Mouffe, Chantal. *A Politics Without Adversary?*, 2005

Deep Skin: the tissue of structure in architecture of the digital age

Alicia Imperiale, PhD

Society Fellow | Society for the Humanities 2016-2017 | SKIN

http://sochum.as.cornell.edu/focal_theme.html

Tuesday: 12:20-2:15pm

A.D. White House 109

Open to Graduate students with permission of the instructor: aai3@cornell.edu



John Portman & Assoc.,
LA Bonaventure Hotel, 1976



Mark Foster Gage, Guggenheim Helsinki project, 2015



MOS, "Eye Candy" at P.S.I, 2009

Metaphorical references to skin abound in contemporary architectural discourse. The building envelope is the skin that separates and provides a controlled atmosphere for the interior space of a building, one that is set off from the surrounding environment. This simple definition is challenged when architecture is understood as an organism, and the skin and structure of architecture as a system. The conflation of structure into the skin is used here as a way of thinking of the architectural enclosure as a deep skin, and the individual parts of which an architectural skin is constructed, as a study of the tissue of structure.

The biological metaphor when transferred to architecture introduces the use of the term organic in relation to the built environment. Just as buildings and cities were referred to as growing organically, contemporary architects use biologically-inspired terms to describe the processes by which computational design may mimic natural processes of growth, a parallel to biology in computational systems.

This seminar will develop the historical and theoretical base to engage these ideas across a wide range of interests and disciplinary boundaries: making the skin more porous. Some of the major themes that we will explore include: the specular/reflecting skin, mediatic skins, skinning the space frame, metabolism and megastructures, the digital skin, supersymmetry and the new grotesque, Big Data and networked skins, and Object Oriented Ontology and the opaque skin. A secretive and unrevealing surface lies at the polar opposite of the specular surface, raising questions about the skin of architecture as the site of intersection of theory, materiality, affect, signification, and comfort.

We will read across a wide range of sources *within the discipline of architecture*: Antoine Picon, Mario Carpo, Peter Eisenman, Greg Lynn, Alicia Imperiale, Pia Edie-Brown, Hadas Steiner, Jenny Sabin, Reinhold Martin, Phillip Beesley, Catherine Ingraham, Mohsen Mostavi, Achim Mengis, Skylar Tibbits, Neri Oxman and others, *and without in philosophy and scientific readings*: John von Neumann, Claude Shannon, Norbert Wiener, Hermann Weyl, Donna Jeanne Haraway, Evelyn Fox-Keller, Maurice Merleau-Ponty, Fredric Jameson, Peter Sloterdijk, Gilbert Simondon, Jean-Luc Nancy, Jane Bennett, Timothy Morton, Graham Harman, Georges Canguilhem, Gilles Deleuze, Jakob von Uexküll, François Jacob, Giorgio Agamben, Lily Kay, Bruno Latour, Giuliana Bruno, Elizabeth Grosz, Peter Galison, Lorraine Daston ...

AAP NYC
Arch 6308
Sp Tp in Architectural Theory

Joan Ockman

COLLEGE *of* ARCHITECTURE, ART & PLANNING
DEPARTMENT OF ARCHITECTURE

**VISUAL
REPRESENTATION**

Spring 2017

ARCHITECTURAL MODEL TECHNIQUES and PRESENTATION DRAWINGS

ARCH 4509/6509: Sp Tp in Visual Representation Thursdays, 12:20-2:15pm, 202 Rand

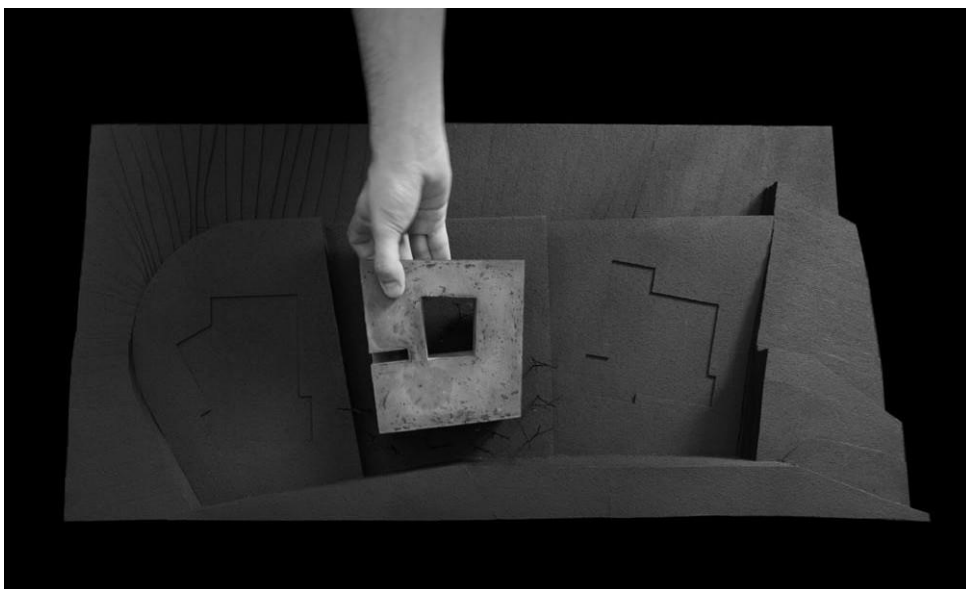
Architectural models and presentation drawings are not only required during the architect's formation while attending classes, but are also fundamental during the run of an Office's practice.

Models can be used on preliminary stages of new projects to study overall proportions and volumes, but they prove to be very valuable to further explore some details along the execution process of a project. Models can be used as a valuable tool to explore unseen or unexpected facets of a new design, often also not noticed on 3D simulations that seem to increasingly replace models.

Within the duration of this course some techniques on designing and executing architectural models will be shared, based on personal experience within Paulo David's office. Some emphasis will be taken on how to plan architectural models according to the overall expression that needs to be achieved, either more towards the abstract/conceptual, or more detailed and closer to actual building materials.

Another aspect that will be explored along the course is how to arrange drawings for presentations or assignments. The expression and detail level according to each purpose varies greatly, from very schematic drawings for presentations to highly detailed drawings for construction directions.

Refining adequate representation to each drawing according to its finality is a major and critical skill that is put into practice in an architectural office and a personal experience will be shared.

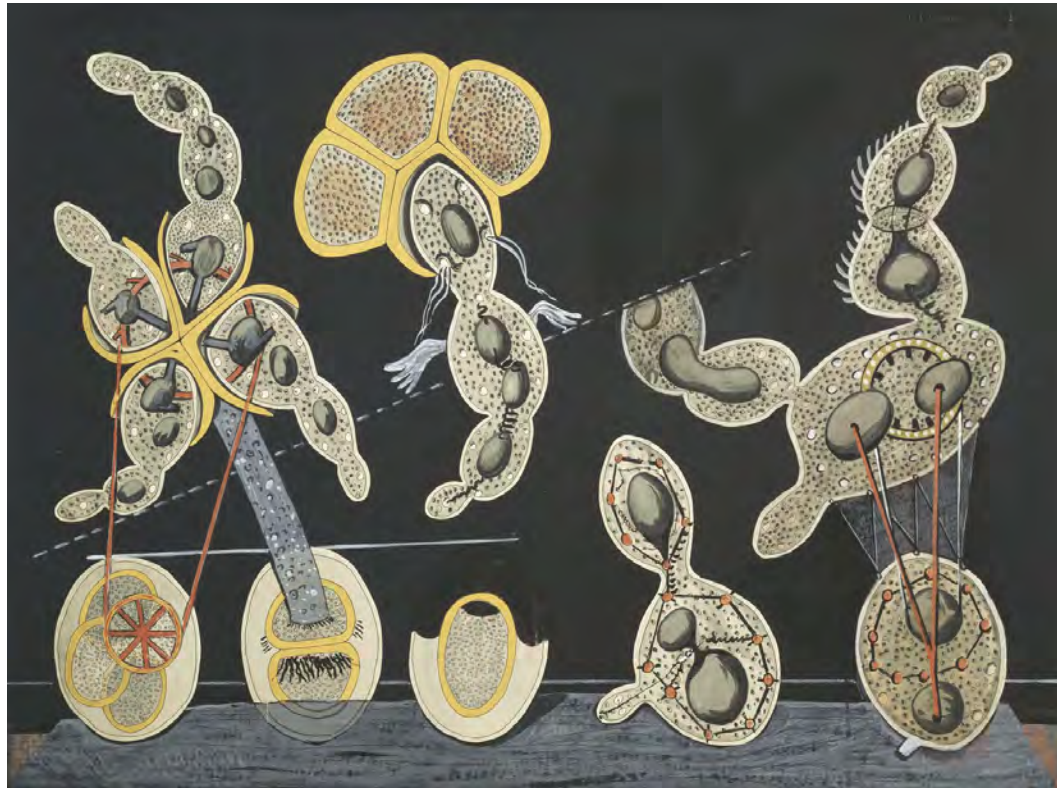


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visiting critic joão almeida • college of architecture, art and planning • cornell university • new york

Cornell University
AAP, Department of Architecture
Spring 2017 / ARCH 4509/6509: Sp Tp in Vis Rep
Tuesday, 2:30-4:25 pm, 205 Rand Hall & Kroch Library
Aleksandr Mergold, Department of Architecture
Elizabeth D. Muller, Rare & Manuscript Collections

RE-DRAWING



Max Ernst
*The Gramineous Bicycle
Garnished with Bells the
Dappled Fire Damps and the
Echinoderms Bending the
Spine to Look for Caresses*
overpainting on medical chart
1921

In this age where resilience is the new pre-occupation, the idea of the adaptive reuse and repurposing of the built environment in its various manifestations – existing materials, form, knowledge – is becoming commonplace. There is now also a renewed interest in drawing as a vehicle of representation of the built environment and perhaps as a way to connect with past histories of building. How to draw while sampling from past elements of building culture and technology in time and space – re-arranging, re-scaling, re-appropriating old physical and ephemeral elements – remains a challenge.

This seminar will explore the creation of new drawing content out of existing components – an adaptive reuse of drawings for the exploration of new purposes and achievement of new meanings, while interrogating the limits of past practices of delineation. In three broad typologies – views from above (mapping), views from eye-level (perspective) and projection (elevation, section) – drawings and other images from the Rare and Manuscript Collections in Kroch Library will be explored, reproduced, dis-assembled and repurposed. New drawings, utilizing “spolia” based on images from the 15th to 21st centuries from around the globe, will be created in 2D (paper), 3D (material other than paper with thickness) and 4D (digital, scale-less) media, challenging the norms of “traditional,” “contemporary,” “analog” and “digital” drawing.

The course will offer weekly lectures in Rand Hall and Kroch Library, workshops from Cornell Architecture faculty and visitors, weekly reading assignments for critical class discussion and drawing assignments leading to a comprehensive folio of re-drawing for each student.



URBAN PATTERN: ANALYSIS & INVENTION OF CITY GRIDS

Spring 2017 ARCH 4509/6509: Sp. Tp. in Visual Representation
Tuesday 2:30-4:25pm 144 Sibley Hall
Instructor: Leslie Lok
wll36@cornell.edu

Sol LeWitt, All Combinations of Arcs from Corners and Sides, Straight Lines, Not-Straight Lines, and Broken Lines
Walter Christaller, Theory of Central Places
Ludwig Hilberseimer, The Nature of Cities, Marquette Park

The transformation of city grids is a reflection of shifting urban organization. As Albert Pope described in his book, *Ladders*, grids possess an innate ability to generate infinite complexity and to accommodate adaptive heterogeneity. Grids could be predictable and prescriptive in their growth pattern, but also be indeterminate and ambiguous as spatial fields.¹ The seminar aims to scrutinize various types of grid patterns and permutations to begin to question the standard model of grid, figure ground, and urban order through experimentation with various representation tools.

The seminar will investigate the city grids from historic precedents to contemporary off-the-shelf cities to solicit morphological behaviors, such as patterns of grid erosion and fragmentation as well as characteristics of spatial continuities. The process is to extrapolate organization and formal rule set in relation to the various influences to author specific permutations within the fabric. The spatial logic might tend to openness to suggest an open city structure or favor the closed grid of discrete urban order. Informed by a set of operational logics, students will redraw the grids as a serial procedure to produce a body of visual work. Digital tools such as scripting will provide additional means to experiment with drawing methodologies.

Selected readings on urban organization and the evolution of grids will serve to expand the conceptual and literal understanding of grids. Prior scripting knowledge is not required. Students will be guided through the process with lectures, reading discussions, tutorials, and pin-ups. Inherent in the successive manipulation of drawing, the final project will emerge as a collection of serial drawings that are carefully calibrated to reveal familiar and unfamiliar sets of urban relationships.

¹ Pope, Albert. *Ladders*. Houston, Tex.: Rice School of Architecture, 1995.

CARTOGRAPHIC FIELDS

AND THE ARCHITECTURAL PHENOMENOLOGY OF NATURE

This seminar explores the theme of cartographic projection, understood as geometric technique, political technology, and a method for conceptualizing and transforming the structure of the natural world. The concept of cartography is used here critically, the intention being to propose a mode of architectural thinking that is concerned with territorial scales. It aims to displace limiting notions of disciplinary interiority and autonomy, and explore as a phenomenological problem architecture's condition as enfolded in wider knowledge horizons and physical landscapes implicated in the contemporary situation of environmental crises. The latter is in its essence a territorial condition, for which the 'plan' must extend into the form of the *map*: architecture becomes a cartographic problem and thus also a form of *geo-graphy* (Earth-inscription).

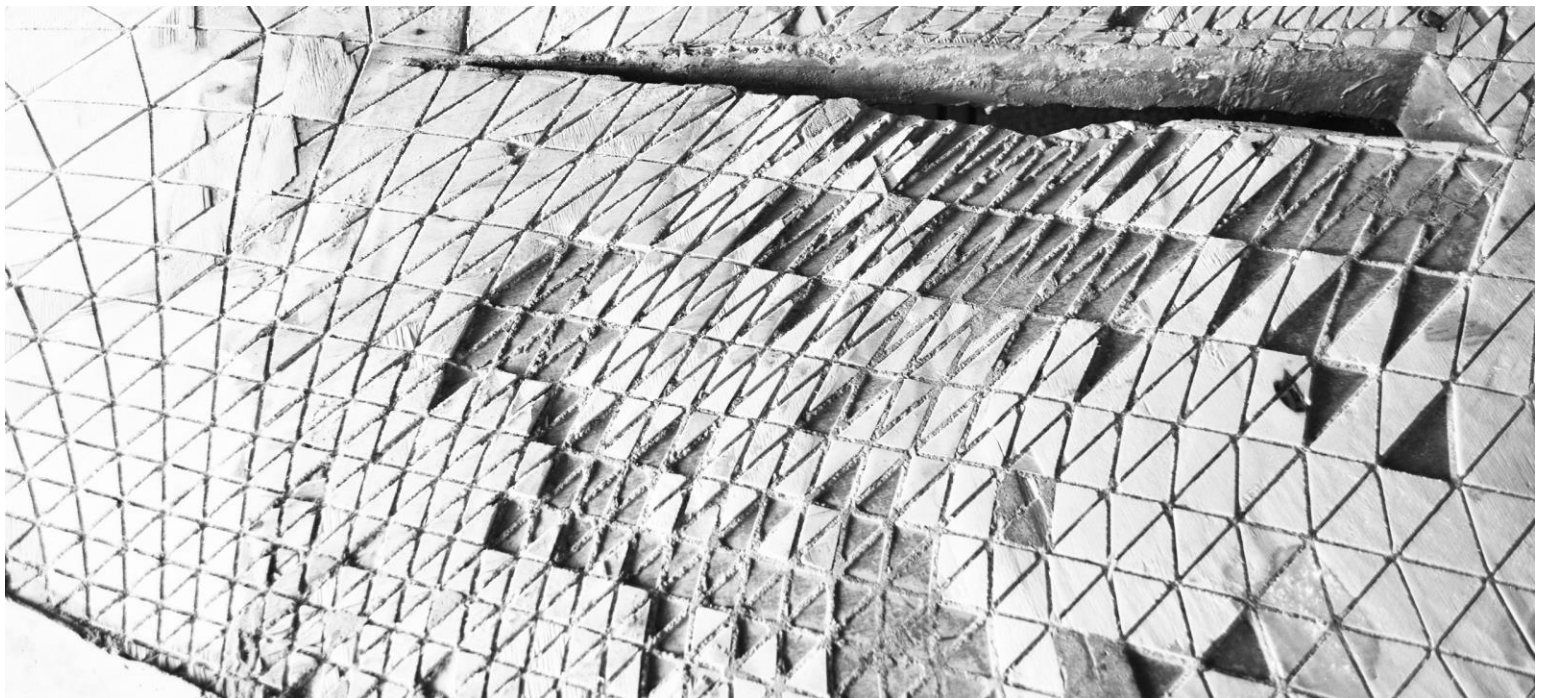
The seminar will have a dual focus: technical-geometric and historical-theoretical. We will explore the history of cartography, beginning with its systematic genesis in the work of the Greco-Egyptian polymath, Ptolemy, in the 2nd c. AD, specifically his *Geographia*. This will function as foundational for our more specific focus, which will be on the geometrical systematization of cartograph projection instituted in the Renaissance and extended by the post-Euclidian geometries of the Baroque, which serve as the bases for modern geo-imaging technologies. The 'Baroque' is also for us a name, signifying the European colonial self-projection onto the territories of what would become the Americas. Our exploration of geometric technique will at the same time, therefore, be an interrogation of cartography as a colonial-political project.

We will study the projective geometries that underlie the development of modern cartography and the corresponding ideas of space: spherical geometry, elliptical geometry, conics, hyperbolic geometry, and the elementary structures of projective and descriptive geometries. Beginning at the foundational synthetic-analogue level of drawn constructions, we will aim to enter the analytic-digital domains.

Our technical-geometric study will be supplemented by historical-theoretical investigations. We will interrogate the wider contexts within which these geometries emerged, and their deeper, situated meanings: theological, political-colonial, and as functions of the new Enlightenment paradigm of knowledge which saw the invention of abstract space, the Cartesian subject, and the instrumental objectification of 'nature'. Students will here be introduced to key texts in the philosophical tradition of phenomenology, beginning with the paradigmatic works of its founder, Edmund Husserl, on the problem of 'the origin of geometry' and the constitution of the natural world.

Ultimately, students will generate *mappings*, questioning the geometric origins of cartography and the cartographic transformations of geometry in a process of imaginative constructions of cartographic fields.

Tao DuFour *Fabricating Wilderness* 2014



AAP ROME

Arch 3117

Sp Tp in Visual Representation

C. Campaglia

AAP NYC
Arch 6509
Sp Tp in Visual Representation

Leah White + Christa Hamilton

COLLEGE *of* ARCHITECTURE, ART & PLANNING
DEPARTMENT OF ARCHITECTURE

**BUILDING
TECHNOLOGY**

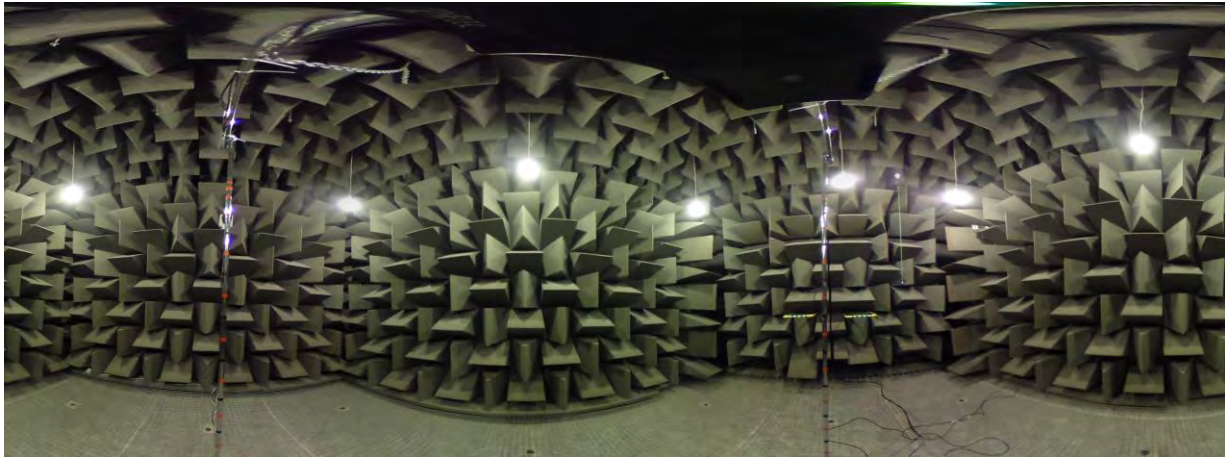
Spring 2017

ARCH 4603/6603 Sp Tp in Environmental Systems

R 2:30-4:25pm, 205 Rand Hall

Kent Hubbell

Acoustics for Architects: Hearing, Listening, Designing



This seminar will explore the sonic environment that we inhabit, especially the built environment, in order to become more familiar with the artistry/technology of sound, from noise to music. It is hoped that participating (architecture/design/arts) students will come to consider the acoustic character of their work as important as that of light, form, color, structure, and acquire an abiding interest in “how spaces should sound.” The Cornell campus environment will be our laboratory. In addition, there will be two field trips, one to Binghamton to the laboratory of U. of Binghamton Professor Ron Miles and the manufacturing facilities of McIntosh Labs. The other will be to New York City to explore “The Sound of the City” with acoustician Robert Lee, including visits major performance venues

The seminar will be divided into seven sections: **Hearing, Listening, Basic Principles, Analysis, Field Studies, Designing, Performance.**

I. Hearing: Professor of Neurobiology and Behavior Ron Hoy will present an overview of hearing/human hearing and introduce essential physical and psycho-acoustic principles. These two seminars will articulate how through hearing is the foundation upon which humans become social beings. *Students will explore the Lab of O sounds collection, to listen to sounds from their animal sound library.*

II. Listening: will discuss the act of listening and assign an exercise on listening, which will involve field recording of sounds on and around Ithaca, using Zoom H4N digital recorders. Professor of Music Kevin Ernste and American Pianist & Graduate Student of Music, Ryan McCullough have indicated that they will contribute to this phase of the seminar. *The class will visit the acoustics lab of Ron Miles on Feb 16 to experience his anechoic chamber. Following that, the class will visit McIntosh Labs to tour their manufacturing facility.*

III. Review of Basic Principles:

Professor of Mechanical Engineering Al George will review the essentials of room acoustics.

IV. Analysis: Assoc. University Architect Andrew Magre will present and distribute formal acoustic analyses of campus spaces that have been prepared by acoustical consulting firms.

V. Field Studies: Warren Cross, Resident Sound Designer for the Department of Theatre, Film and Dance, will introduce the essentials of acoustic analysis, and using available software/hardware, student teams will analyze the acoustic signature of selected spaces/places on campus. (such as Barton, Bailey, Statler, WSH Theater, Schoelkopf, The Slope, Sage Chapel, Sage Hall, various classrooms/seminar rooms Human Ecology classroom, Barnes, new Goldwin Smith addition, Klarman Hall, The Schwartz theater/black box theater, outdoor spaces, etc)

The class will travel to New York City to spend a day with Robert Lee, exploring the sounds of the city, including plans to visit major music venues(Lincoln Center, Madison Square Garden, Radio City Music Hall)

VI. Designing: Explore a variety of acoustic space types, in order to think about creating a lexicon of architectural sound spaces. Student teams will propose design solutions for campus spaces that will improve the acoustical character of the space/place they have chosen. Visiting acoustician, Ben Markham act as consultant/critic during this part of the class.

VII. Performing:

During several weeks at the end of the semester, students will participate in preparations for Slope Day, under the guidance of Joe Scaffido.

ALGAE PONICS:

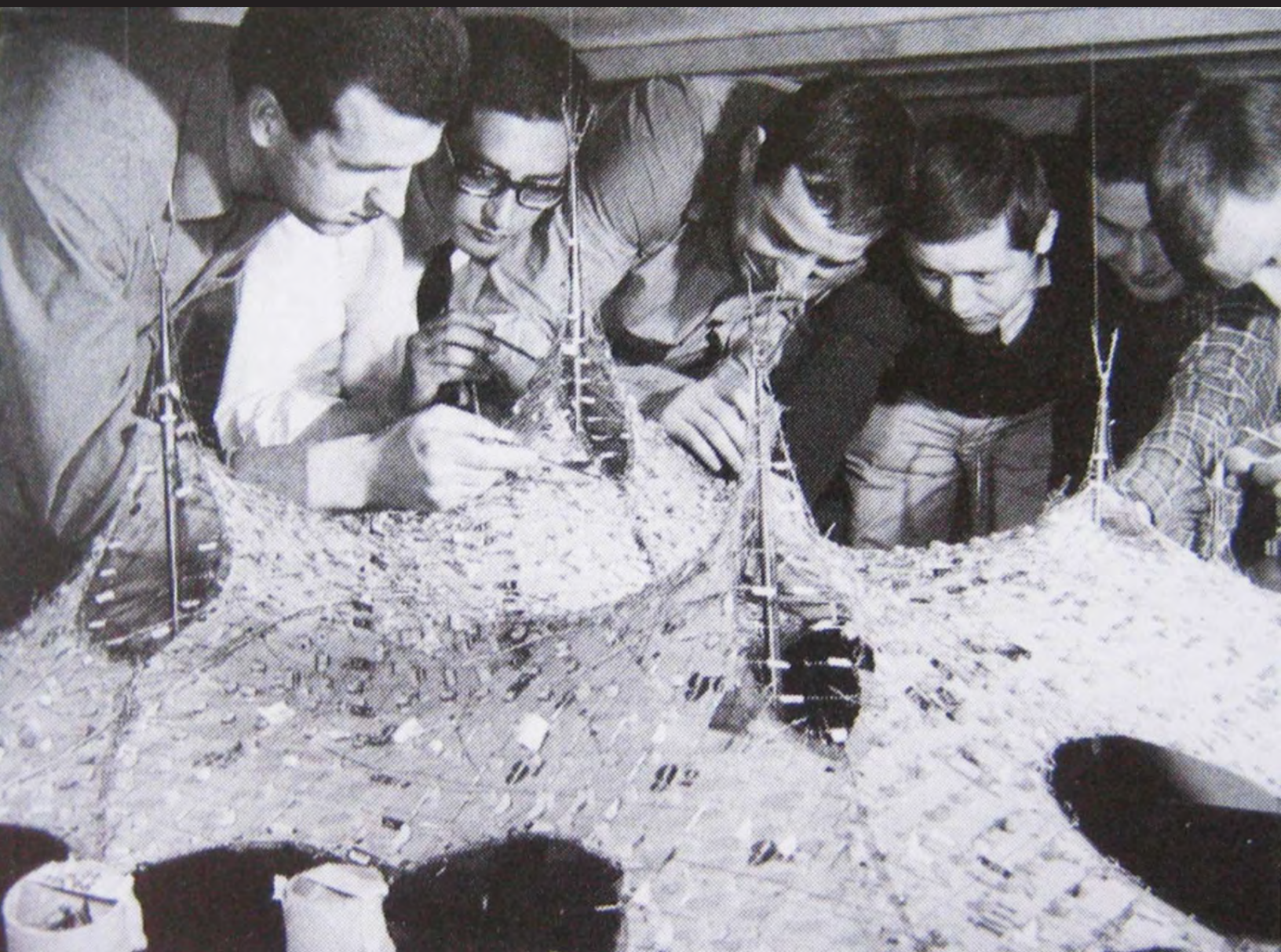
Fabricating Living Micro-Systems

At the intersection of architecture and science, environmental and industrial design, ecology and botany, this seminar aims to design and construct an indoor microalgae microfarm in the form of photosynthetic building skins containing vessels to sustain the growth of *Arthrospira platensis* and *Arthrospira maxima*, a nutritious cyanobacteria also known as Spirulina. This living skin will activate algae as a material to shape space, filter sunlight, supply nutrients, and absorb atmospheric carbon dioxide. It is a dynamic, spatial installation that will both receive from and give back to its environment.

Through a series of iterative modeling using multiple fabrication methods such as vacuum-forming, laser cutting, CNC milling, laminating, hot gas/air welding, select prototypes will inform a full-scale construct to be completed prior to the end of the semester. As a means to contain and cultivate algae in a fluid medium we will be working with plastics in the form of new, reused and readymade materials. Issues relating to the detailing of building skins on a micro-scale such as waterproofing, structure and light transmittance will be considered.

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Spring 201), Thursday 10:10 - 12:05, 20' Rand Hall
Visiting Critic: Martin Miller (mfm97@cornell.edu)
Office Hours: B57A wed 12:30-2:30 or by Appt.

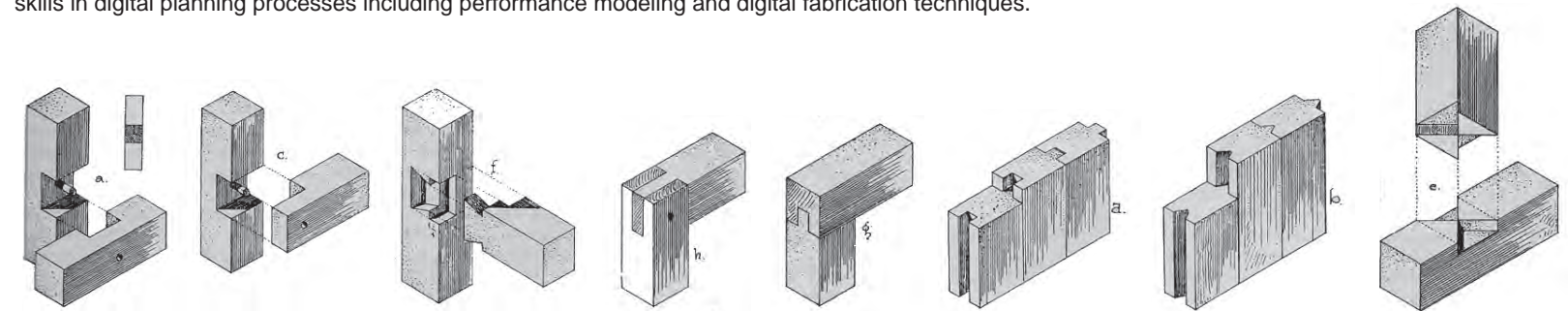
Timber Modular

Rethinking residential timber construction: MASS CUSTOMIZATION VS MASS PRODUCTION | DIY CONSTRUCTION KITS | LOW COSTS | HIGH PERFORMANCE

The United Nations are predicting a population growth and urbanization trend that will require us to build new dwellings for 2 billion people by 2050. It is the architectural challenge of our century to provide visions for sustainable, cost effective and yet livable and enjoyable habitats. In this context, modern timber construction is of interest: Timber is relatively easy to process and it is a renewable recourse with a small CO2 footprint and good structural, thermal and aesthetic qualities. Rethinking timber construction methods through the means of digital fabrication, concepts of mass customization and modular system thinking bear great potential to reduce construction costs, improve built precision and quality as well as mitigate construction errors.

Instead of leading to mass production, standardization is supposed to create the framework for individuality instead of uniformity. As analyzed by Norton et al. in 2011, consumers place a disproportionately high value on products they partially created. (Norton, M. I., Mochoy, D., & Ariely, D. (2011). The 'IKEA effect': When labor leads to love. Harvard Business School Marketing Unit Working Paper, (11-091).) Transferred to architecture, this cognitive bias encourages the development of flexible structures that are able to be assembled in various ways and to adapt to individual needs and preferences. Optimizing DIY-workflows has the potential to mass-customize construction processes and replace generic habitats by individually yet efficiently created homes.

In order to approach this large field of research the course will work out an efficient building layout that is based on the principles of modularity. The students will learn about flexible floor plan organization and the art of timber construction and detailing considering structural and physical properties of the material. They will have to take part in weekly discussions and prepare research presentations on subjects related to the course theme. As final task the students will have to do a small design project about their understanding of modularity that includes an innovative DIY construction kit or detail built as mock-up, a building design that makes use of the detail as well as a concept for an urban use of the designed system. Further, the students will develop skills in digital planning processes including performance modeling and digital fabrication techniques.



Krauth-Meyer, Das Zimmermannsbuch, 1895



Vitra Design Museum Archive

COLLEGE *of* ARCHITECTURE, ART & PLANNING
DEPARTMENT OF ARCHITECTURE

**HISTORY *of*
ARCHITECTURE & URBAN
DEVELOPMENT**

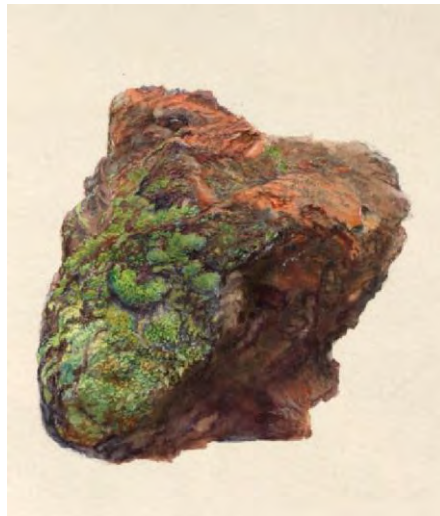
Spring 2017

Modernity & Materiality

Spring 2017

ARCH 3819/ 5819: Special Topics in HAUD
ARCH 4408: Sp Tp in Arch., Cult., & Soc.

Instructor: Diana Martinez
Class Location: 142 Sibley Hall
Hours: Tuesday 12:20-2:15pm
Office Hours: Tuesdays 2:30-4:30
(please schedule an appointment)



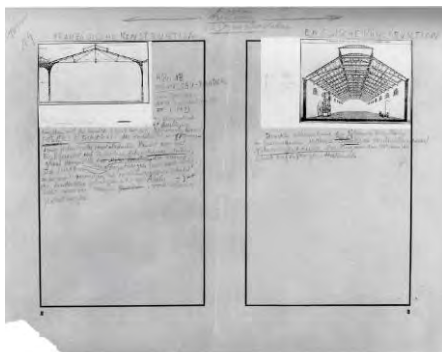
left: John Ruskin, study of a piece of brick, to show cleavage in burnt clay (1871)
right: Plastiglomerate specimen, or "Anthropogenic marker horizon in the future rock record"
found on Kamilo Beach, Hawaii, photographed by artist Kelly Jazvac (2013)

For the social reformer and architectural critic John Ruskin, the selection of an architectural material was nothing less than the foundation of a new (albeit conservative) ethic. Ruskin defended the use of traditional methods of building as an affront to the dehumanizing forces of industrialization. Fifty years later, the architecture historian Sigfried Giedion argued the opposite. For him, industrialization was an irresistible historical force. In his embrace of forms and spatial sequences only possible in iron and steel, he developed the basis for a new 'rational' ethos—one forged in a factory, and free from what was increasingly viewed as a nostalgic attachment to the past. More troubling for Giedion was reinforced concrete's ability to mimic historical forms. This new capacity to 'imitate' history introduced a stubborn controversy and a fully naturalized valuation of material 'honesty,' a preoccupation of the "modern movement" that foreclosed broader and more challenging discussions surrounding questions of materiality.

Embodied within materials are multiple agencies, 'natural' behaviors, skills, systems of labor, modes of production, laboratory science, cultural practices, symbolic meanings, formal suggestions, geopolitical relationships, human histories, geological time, environments, and economies. In short, materials operate on a far richer territory than the one starkly divided by claims of 'truth' or falsehood. This course aims to re-place architectural materials within this thick and layered territory.

We begin with a deceptively simple question. Namely, "What is a material?" and "How do we begin to describe its already limitless complexity?"

Each week we will examine a different material in the context of a particular historical theme. Short introductory lectures introducing a few key case studies will be followed by a seminar where we will discuss readings. To gain immediate traction we will keep notebooks structured on the "comparative method." Students will develop a series of tandem descriptions comparing two selected examples of architecture, focusing on the use of a particular material. One of these comparisons will be developed into a final research project or paper.



Sigfried Giedion's notes for
Building in France, Building in Iron,
Building in Ferroconcrete.
On the left
"French Construction" on the right
"English Construction"



ICONIC AFTERLIVES

Arch 3819/5819 Sp Tp in HAUD / ARCH 4408 Sp Tp in Architecture, Culture & Society

Chad Randl (cgr5) 3 Credits

Mondays 7:30pm – 9:25pm

261B Sibley Hall

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Weekly thematic lenses and a number of guest participants will help guide our exploration. Assignments will include weekly readings, in class presentations, and the completion of a semester-long final project that involves original research and analysis.

Architectures of Migration

Circulating Design and Culture in the Americas



Arch 3819/5819 Sp Tp in HAUD | Arch 4408: Sp Tp in Architecture, Culture & Society
Chad Randl (cgr5) 3 Credits
Tuesdays 10:10am – 12:05pm
261B Sibley Hall

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We will define the migratory process bilaterally and widely to include permanent resettlement, short term residency, and cyclical movement between north and south. Among the questions we will ask: How have the ambivalences and temporalities of the migrant influenced architectural production and community formation? How is cultural identity retained and reconstructed in new territories? How have ideas about modern architecture circulated throughout the Americas?

Students will complete substantial weekly readings, attend class where they will participate actively in discussions, and undertake a final project. In addition, over the semester each student will make brief research presentations on subjects selected from the course syllabus.

Image Credit: "S/T" by Los Carpinteros, 2009.

Prof. D. Medina Lasansky



ARCH 6805: PRACTICUM: BUILDING EXHIBITIONS

W 10:10-12:05pm, 142 Sibley Hall

Associate Professor Esra Akcan



This practicum-seminar explores the history of architectural exhibitions, including venues with drawings, photographs and models in a gallery space; 1:1 scale structures built for display; buildings in world expositions; and building exhibitions as large city segments that are destinations of architectural tourism. “Building exhibitions” as the title denotes both the history of architectural exhibitions and the practice of constructing an exhibition, and ultimately raises the question: How synonymous are building and exhibiting? As part of the seminar, student teams will design an exhibition about a historical exhibition of their choice, using the media of their choice, after a series of reviews and discussions with faculty. Exhibitions under study include: Crystal Palace, Werkbund Exhibition of Cologne, Weissenhof Housing, International Style, Architecture Without Architects, IBA’1957, Chandigarh, Brasilia, Expo’67, IBA’1984-87, The New Domestic Landscape, Content, selected Architecture Biennales from 1976 to 2016. With their own exhibition, students will respond to the questions discussed throughout the seminar such as the changing relevance and limits of architectural exhibitions, shifting definitions of curatorship, geopolitical implications of “exhibiting other cultures”, inclusion and exclusion decisions, policy of wall-texts, choice of media, among others.

ARCH 3820: Topography and Urban History of Ancient Rome

Dr. Jan GADEYNE, PhD



When walking around Rome, you can not but become aware of its past, of the impact that history has had upon the city: everywhere are remains of ancient buildings, medieval houses and churches, renaissance and baroque *palazzi* and more. Sometimes they are right next to each other, other times they are on top of each other or mixed together into a collage of different materials and techniques. After all this city that extends along the Tiber, across the low lands on to the surrounding hills has existed for almost 3000 years, a continuous urban *work in progress*. Centuries of construction and restoration, destruction and transformation have created one of the most intricate layered city centers of the world.

This course intends to peel off the layers one by one to reconstruct the history of Rome within the Aurelian walls from its origins to the late Middle Ages, when a cityscape was created that became the base for the later development of the city from the Renaissance until the modern age. During this almost surgical removal of the layers of the city, we will pay attention to the development, use and continuity of the urban infrastructure (the streets, bridges, aqueducts and walls), the building typology (both public and private), the building materials and techniques.

A central theme in this course will be the emphasis upon the concept of continuity through transformation of the urban fabric from antiquity until the present day. At the base of this concept is the way a historical city continuously recycles itself. It does that in its spaces, open or closed, public or private, and in the materials and methods of construction. To understand this process we will look at the well preserved remains of the ancient and medieval city and combine them with the latest results in urban archaeology in order to gain

better insight in the dynamics of the city as an ever changing living organism. Therefore, the course will also dedicate some time to the most important urban interventions that occurred in Rome after it was proclaimed Capital of Italy in 1870 and the way these projects interfered with its historical urban texture.

Every week one or two different "regions" will be studied, that cover a specific moment of the urban history of Rome. Each time the urban and architectural elements of the ancient and medieval phase will be analyzed, contextualized and interpreted in the light of what has been said before. Week after week, the layers of the city will be put in place and the complex urban history of the city reconstructed.

Course objectives.

- To unravel the "layers of Rome" by using the material evidence available for the study of city's architectural and urban history and implementing it with other sources (e.g. literary, epigraphical, etc.).
- To gain thorough and direct knowledge of the Roman and Medieval urban landscape and the way this landscape has survived until today.
- To understand how the development of Modern Rome can not be separated from that of its ancient and medieval legacy.

Learning objectives.

- To "see" the different phases of the city through its building typology, building materials and building techniques;
- To interpret the specific nature of urban development in a certain part of the city at a certain time against the background of changing political, religious, economic or social standards.

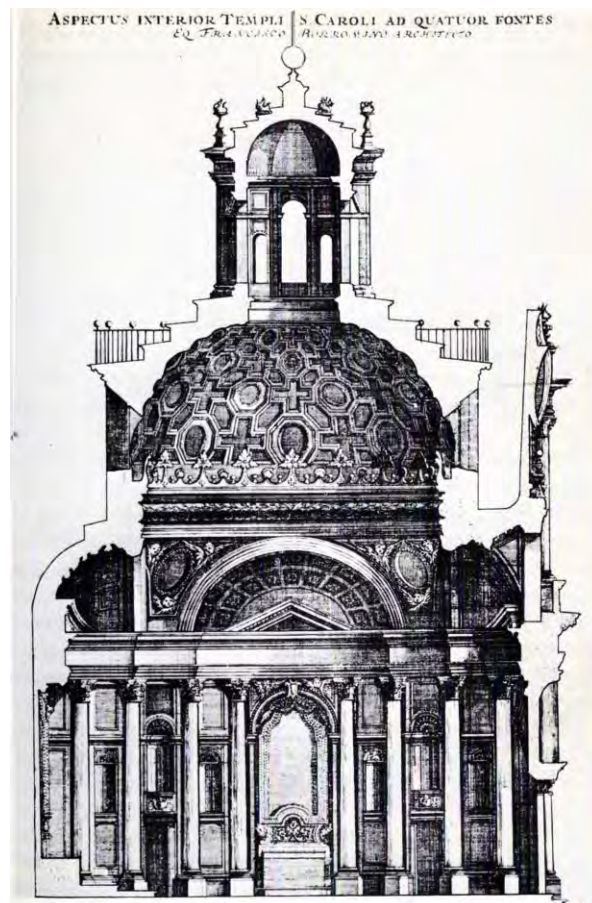
URBAN DESIGN, ARCHITECTURE AND ART IN RENAISSANCE AND
BAROQUE ROME
(ARCH 3823-020)

PROFESSOR JEFFREY BLANCHARD
CORNELL IN ROME
SPRING 2017

Offered on-site at Cornell in Rome, this course focuses on the Renaissance and Baroque phases (15th-18th centuries) of Rome's history. The first class sessions will survey the city's urban history and form from its origins to the present, and we will often turn our attention to earlier and later developments, without an understanding of which the Renaissance and Baroque periods would be only partially intelligible. While the history of urban and architectural design will be our main focus, we will also look at key episodes of painting and sculpture, especially by artists who are also among the principal architects of these periods (Michelangelo, Bernini).

Class sessions will be held once a week and will largely take place on-site, at times preceded by a slide lecture in our studio. There will be a mid-term exam, a paper or project, and a final exam, weighted equally in the calculation of the final grade.

The course is offered for 3 credits and is open to any student enrolled at Cornell in Rome.



COLLEGE *of* ARCHITECTURE, ART & PLANNING
DEPARTMENT OF ARCHITECTURE

**ARCHITECTURE,
CULTURE & SOCIETY**

Spring 2017

Living the House. Architecture and Film

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Ben Rose House in the movie "Ferris Bueller's Day Off"

The spaces where human life becomes domestic are more than just an answer to the evolution of the modern ways of living. They have defined a research field for experimentation. The single house is where modern architecture has been pushed far beyond the established traditional ideals of what a living-space should be. The usually ease of the building process, the well-known program and the reduced number of players define a controlled environment which results in a clean and direct conversation from the architect to the final building. Even more than social housing developments or public buildings, the single house itself is maybe the typologies where modern architecture has become more successful and radical.

At the same time, it is not accidental that some of the houses that are shortlisted in the history of modern architecture are the scenario where many films have been shot. Those magical spaces have the ability to transform human daily stories into something closer to the ontological categories rather than remaining just personal or particular scenes of our human being. More than any other visual medium, film, by virtue of the size of its audience, its global dissemination and the growing influence over culture as a whole, helped shape popular perceptions of architectural modernism.

This theory course will go through some of the most prominent examples of modern single houses, by studying how they are depicted in some movies. Through that selection, it is possible to better understand some of the concepts that have driven the practice of that outstanding and successful typology: such as the shack, the palace, the crystal box, the floating space, the monument or the enclosed-landscape, among others. At the same time, when those spaces are used as a movie set, they perform somehow differently, opening the door to a new range of interpreting domesticity. The course will also dissect how architecture and the city have also been shown or used in movies through its evolution, and how the avant-gardes used media to strength the main arguments of modernity.

Lectures will be complemented with projections and discussions. A presentation and a paper should be submitted as a result of personal research on one of the concepts, houses or films studied through the semester.



ICONIC AFTERLIVES

Arch 3819/5819 Sp Tp in HAUD / ARCH 4408 Sp Tp in Architecture, Culture & Society

Chad Randl (cgr5) 3 Credits

Mondays 7:30pm – 9:25pm

261B Sibley Hall

Architectural icons often appear—in texts, surveys, our imaginations—fixed in moments of idealized completion. Theorists present the canonical building as a resolution of contested meaning, instantly recognizable and universally understood. This course opens up for renewed consideration iconic works, viewing them from registers that accommodate processes of time, use, and varied value. We will examine the Villa Savoye's tenure as a hayloft, the debate over the genius or foolishness of Fallingwater's cantilever, and the occupants' curtains in Mies van der Rohe's Lake Shore Apartments. We will identify how signature designs emerge, who reads them in what ways, how iconic representations oscillate between myth and fact, and how they are ultimately symbolized and commodified (as Lego kits, selfie backdrops, corporate logos). The course provides an opportunity to question the enduring power of the icon—at once exceptional and banal—and the ongoing desire of clients, designers, historians, and the media to create new ones.

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Architectures of Migration

Circulating Design and Culture in the Americas



Arch 3819/5819 Sp Tp in HAUD | Arch 4808: Sp Tp in Architecture, Culture & Society
Chad Randl (cgr5) 3 Credits
Tuesdays 10:10am – 12:05pm
261B Sibley Hall

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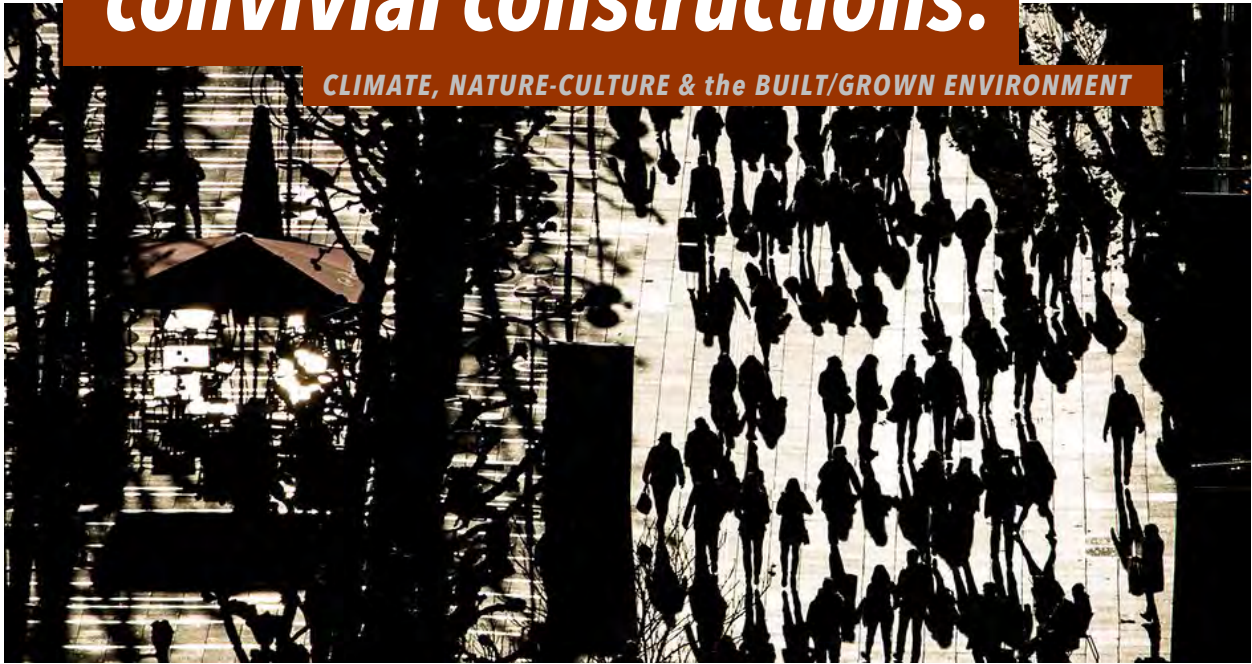
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Image Credit: "S/T" by Los Carpinteros, 2009.

convivial constructions:

CLIMATE, NATURE-CULTURE & the BUILT/GROWN ENVIRONMENT



ARCH 3308/6308 Special Topics in Architectural Theory; ARCH 4408 Special Topics in Architecture, Culture & Society
Spring 2017 | 3 credits | Instructor: Foster (jf252) | Thurs 2.30 – 4.30pm | Sibley 261B

Theorists argue that addressing climate change requires problematizing received nature-culture binaries, and cultivating a broader awareness of the importance of ‘working with nonhuman agency’. One example of such an interactional subjectivity might be found in climatic understandings, which are not just a matter of physiology, psychology or biography, but are social, political and culturally-constructed, rooted in specific locales and histories. Buildings and cityscapes play an important role in this, not only “responding” to climate, or ‘ambient weather conditions’, but also bio-politically shaping agential, aesthetic and moral understandings of those conditions. The central role of climate in this environmental reciprocity increases when we recognize that cityscapes are as much *grown* as they are *built*. Ambient weather shapes and sustains *all* aspects of the cityscape; both its organic and inorganic components are de/constructed by unending, ‘routine meteorological actions’ that dialectically inform an array of human practices. Paradoxically, climate’s ‘unchanging changefulness’ makes it a key agent stabilizing informational relations between the human and the nonhuman *in* and *through* time in a given locale.

This course explores this climatic co-production of urban space and nature-culture by juxtaposing a history of ‘urban climate’ as an account of ever-increasing architectural and planning regularization and control with a history of it as something figured through the cityscape’s multiscalar, intersecting materialities and performativities. The course has a strong *research and representation component*. Though ‘historical’, it aims to give students analytical/theoretical tools that can be applied to contemporary cities and design problems. After introductory classes on climate, culture and environment, the course will adopt a fortnightly rhythm, alternating between assigned readings on a specific topic (ie ‘*climatic regimes*’; ‘*building typologies*’; ‘*urban morphologies*’; ‘*infrastructures*’; ‘*urban materialities*’; ‘*social & public life*’; ‘*natures & ecologies*’; ‘*weather genealogies & narratives*’ etc) and presentations of research on how this topic plays out in a range of global cities that historically developed a distinctive character due to ambient weather conditions. Over the course of the semester, students will produce an *urban cultural-climatic atlas* that compares how the built/grown environment and daily life co-constructed ‘weather understandings’ in these cities. This collective document will also form the basis for a final exhibition with invited external critics. Although the ‘forms of evidence’ for this research will be primarily *meteorological* and *architectural*, students will also be expected draw on *social, cultural and environmental histories*, and *urban representations* written (fictional/non-fictional) and visual (ie. painting, photography, movies etc.) The course is open to upper level undergraduate and graduate Architecture students, as well as students in Urban Studies, Planning, Landscape Architecture and other disciplines.

CARTOGRAPHIC FIELDS

AND THE ARCHITECTURAL PHENOMENOLOGY OF NATURE

This seminar explores the theme of cartographic projection, understood as geometric technique, political technology, and a method for conceptualizing and transforming the structure of the natural world. The concept of cartography is used here critically, the intention being to propose a mode of architectural thinking that is concerned with territorial scales. It aims to displace limiting notions of disciplinary interiority and autonomy, and explore as a phenomenological problem architecture's condition as enfolded in wider knowledge horizons and physical landscapes implicated in the contemporary situation of environmental crises. The latter is in its essence a territorial condition, for which the 'plan' must extend into the form of the *map*: architecture becomes a cartographic problem and thus also a form of *geo-graphy* (Earth-inscription).

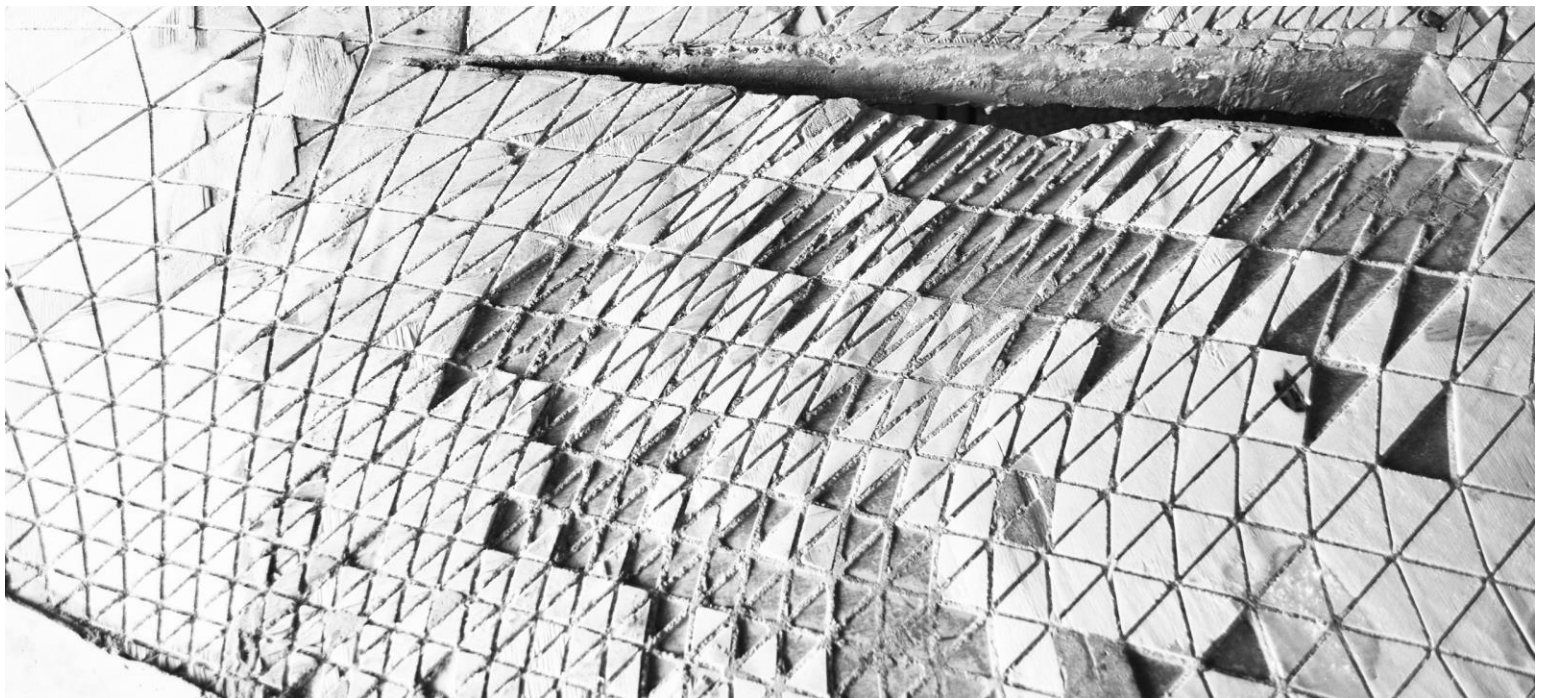
The seminar will have a dual focus: technical-geometric and historical-theoretical. We will explore the history of cartography, beginning with its systematic genesis in the work of the Greco-Egyptian polymath, Ptolemy, in the 2nd c. AD, specifically his *Geographia*. This will function as foundational for our more specific focus, which will be on the geometrical systematization of cartograph projection instituted in the Renaissance and extended by the post-Euclidian geometries of the Baroque, which serve as the bases for modern geo-imaging technologies. The 'Baroque' is also for us a name, signifying the European colonial self-projection onto the territories of what would become the Americas. Our exploration of geometric technique will at the same time, therefore, be an interrogation of cartography as a colonial-political project.

We will study the projective geometries that underlie the development of modern cartography and the corresponding ideas of space: spherical geometry, elliptical geometry, conics, hyperbolic geometry, and the elementary structures of projective and descriptive geometries. Beginning at the foundational synthetic-analogue level of drawn constructions, we will aim to enter the analytic-digital domains.

Our technical-geometric study will be supplemented by historical-theoretical investigations. We will interrogate the wider contexts within which these geometries emerged, and their deeper, situated meanings: theological, political-colonial, and as functions of the new Enlightenment paradigm of knowledge which saw the invention of abstract space, the Cartesian subject, and the instrumental objectification of 'nature'. Students will here be introduced to key texts in the philosophical tradition of phenomenology, beginning with the paradigmatic works of its founder, Edmund Husserl, on the problem of 'the origin of geometry' and the constitution of the natural world.

Ultimately, students will generate *mappings*, questioning the geometric origins of cartography and the cartographic transformations of geometry in a process of imaginative constructions of cartographic fields.

Tao DuFour *Fabricating Wilderness* 2014

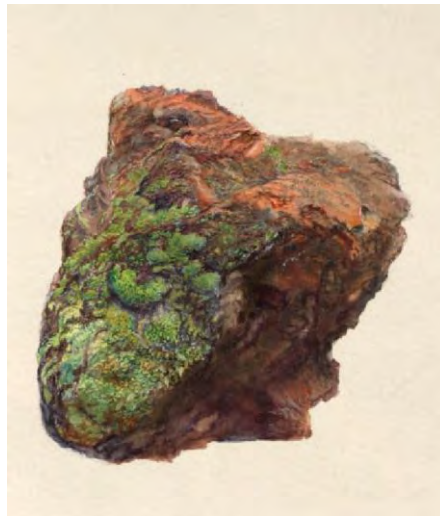


Modernity & Materiality

Spring 2017

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Instructor: Diana Martinez
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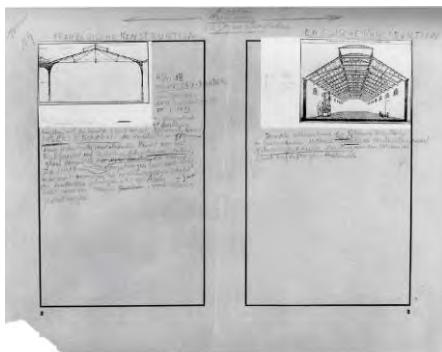
left: John Ruskin, study of a piece of brick, to show cleavage in burnt clay (1871)
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