ARCH 5590-10 – Spring 2014

IMPROVING THE WEATHER: ON THE BOND ON ARCHITECTURE AND ENERGY

Fridays, 10:15 -1:30
Knowlton Hall, Room 258

Andrew Cruse
Office: Knowlton 235

Knowlton School of Architecture
The Ohio State University, College of Engineering

The Discovery of Fire
Cesariano’s Vitruvius 1521

Anatomy of a Dwelling
François Dallegret, 1965

COURSE DESCRIPTION

Energy brings architecture into the world of process and life. But it also bestows architecture with consumption, fugacity and irreversible time. Architecture brings together fire and hut, chaos and organization.

Luis Fernández-Galiano Fire and Memory

This seminar will examine historical and contemporary relationships between architectural form and thermal vitality. Linking construction and combustion, sight and touch, it will investigate how energy has been and continues to be an important ingredient in architectural expression. Many contemporary discussions of architecture
and energy often tend toward the moral imperatives created by climate change, the material limits imposed by resource constraints, or the financial benefit associated with conservation. Without denying these arguments, this seminar will use a wider lens with which to view specific buildings and texts to bring energy on par with form, space and tectonics as a theme driving architectural creation and debate. The seminar will be structured around class discussions of readings, as well as in-depth case studies by students of different building types.

COURSE STRUCTURE

This seminar will meet Fridays from 10:15-1:30. Class sessions will begin with a review of themes of each class, a short presentation by the instructor (for most classes), and a discussion of the readings. A portion of each class will also be spent discussing the class assignment with each group. This will be similar to a studio pin-up, and groups are expected to prepare accordingly.

COURSE REQUIREMENTS

There are three requirements for this class:
• Each week, all students will prepare a response to that week’s readings consisting of a paragraph summarizing their content and proposing three topics for class discussion. Responses will be collected each week by the instructor;
• Each week, one student will be designated as the discussion leader for that week and they will lead the discussion among their peers;
• Students will work in groups of three or four on the class research project. The assignment is to diagram the relationship of buildings to energy. See the separate assignment for more details.

COURSE MATERIALS

Required readings will be available as PDF’s on Carmen. Materials for research projects may not be available from the school’s library. Be sure to allow adequate time to get materials from inter-library loan.

COURSE EVALUATION AND GRADING

Final grades will be based on the following weighting of assignments:
30% Class Participation, weekly reading responses and discussion leadership
30% Class Presentation of Research Project
40% Class project
COURSE POLICIES

- Readings must be completed before class;
- Attendance is mandatory for the scheduled duration of class periods. Arriving late or leaving early, unless authorized by the instructor, will be considered an unexcused absence. More than two unexcused absences may constitute grounds for reducing your final grade. Alert your instructor if you know that you will miss a class session for either academic or personal reasons;
- Sexual Harassment: OSU’s Sexual Harassment policy, which applies to all faculty, staff and students, includes lewd remarks and inappropriate comments made in the studio environment, classrooms and computer labs, as well as the “display of inappropriate sexually oriented materials in a location where others can see it.” Students can file a complaint by contacting Student Judicial Affairs at 292-0748. Sanctions include reprimand, suspension and dismissal from the university;
- Students with Disabilities: If a student requires accommodation for a disability, he or she should immediately arrange an appointment with the professor at the Office for Disability Services. At the appointment, the professors, disability councilors and the student can discuss the course format, anticipate needs and decide upon accommodations. Professors rely on the Office for Disability Services for assistance in verifying the need for accommodations and developing accommodation strategies;
- Academic Misconduct: It is critical that you take responsibility for your academic work. It is expected that all work will be done with honesty and rigor. You are encouraged to read the Ten Suggestions for Preserving Academic Integrity (http://oaa.osu.edu/coamtsuggestions.html). You are required to familiarize yourself with the Code of Student Conduct, which covers academic and social misconduct issues(http://studentaffairs.osu.edu/csc/).
COURSE SCHEDULE

This schedule is subject to change.

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WEEK 1 January 10

THEME Introduction
Course overview, organization, readings, assignments and schedule.

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WEEK 2 January 17

THEME Ingredients: Architecture, Technology, Climate, Ecology and Comfort
The relationship of architecture to technology; active and passive systems; the role of climate and ecology; the idea of comfort

READINGS


SUPPLIMENTAL READINGS

WEEK 3  January 24

THEME  Early Environmental Management
From the sun to systems.

BUILDINGS  John Soane, Dulwich Picture Gallery (1814); Henri Labrouste, Bibliothèque St. Geneviève (1850), Bibliothèque Nationale (1868).

READINGS

WEEK 4  January 31

THEMES  The House: Localized Heat
The hearth; localized heat; technology in the home.

BUILDINGS  Frank Lloyd Wright, Robie House (1910), Frist Jacobs House (1937), Second Jacobs House (1948); Pierre Chareau, Maison de Verre (1931); Passivhaus; Solar Decathlon.

READINGS
WEEK 5  February 7

THEMES  Canonical Modernism, the vernacular and the environment
The relationship of canonical modernists to the vernacular and the industrial.

BUILDINGS  Le Corbusier, the brise-soleil, Villa Baizeau (1929), Villa de Mandrot (1931), Villa Errázuriz (1930), Villa Shodhan (1956), Maisons Jaoul (1956); Richard Neutra, Lovell Beach House (1926); Walter Gropius; Marcel Breuer; Mies van der Rohe.

READINGS

WEEK 6  February 14

THEMES  The Tower: Distributed Services

BUILDINGS  Alphabet City; Le Corbusier ‘exact respiration’ and the ‘neutralizing wall’; Frank Lloyd Wright, Larkin Building (1906); Louis Kahn, Richards Medical Research Laboratories (1960), Salk Institute (1965); SANAA, Zollverein School of Management and Design (2006);

READINGS
•  Leslie, Thomas. “Hollow floors, extruded shells: dialogues between sectional servant and served spaces in the work of Kahn” in Roberto Gargiani L’architrave, le plancher la plate-forme: Nouvelle histoire de la
WEEK 7  February 21

THEMES  Cooling
Active and passive cooling; the role of air-conditioning in architectural form;

BUILDINGS  George Howe, PSFS (1932), VJAA, Lavin-Bernick Student Center (2007); Francisco Mangado, Spanish Pavilion (2008).

READINGS

WEEK 8  February 28

THEMES  High-Tech
The iconography of performance;

BUILDINGS  Cedric Price Fun Palace (1965); Buckminster Fuller; Archigram; Piano and Rogers, The Pompidou Center (1977); Rogers, Lloyd’s of London (1986).

READINGS
• Banham, Reyner “Stocktaking” reprinted in Design by Choice ed. by Penny Sparke New York:Rizzoli, 1981.
• Frampton, Kenneth. “A note on the tectonic of the soffit in the evolution of architecture” in Roberto Gargiani L’architrave, le plancher la plate-
WEEK 9  March 7

THEMES Simple technology and Embodied Energy
The greenhouse effect; mass-enhanced R-value; radiant heating;
Heliophily; Atmosphere.


READINGS

• Ingels, Bjarke. “Engineering without Engines” interviewed by Jeffrey Inaba in Volume no. 37, Fall 2013.

WEEK 10  March 14   SPRING BREAK

WEEK 11  March 21
During this week, we will schedule group meetings to discuss research projects.
WEEK 12  March 28
THEMES  Rehabilitation
Origins of the idea of architectural rehabilitation/renovation.

BUILDINGS  Wang Shu and Lu Wenyu, Ningbo History Museum (2008); David Chipperfield and Julian Harrap, Neues Museum renovation (2010); Lacaton and Vassal with Frédéric Druot, Tour Bois-le-Prêtre (2011); Herzog & de Meuron, Park Avenue Armory (2012).

READINGS
• Jorge Otero-Pailos “Restoration Redux” Architectural Record (February 2012) pp42-43.

WEEK 13  April 4
THEMES  Sustainability and Contemporary Practice
Making sustainability visible; the role of morality.

READINGS
• Ingels, Bjarke. “Hedonistic sustainability”
  http://www.ted.com/talks/bjarke_ingels_hedonistic_sustainability.html
• Koolhaas, Rem “Sustainability: advancement vs. apocalypse”
  http://www.oma.eu/lectures/sustainability-advancement-vs-apocalypse
WEEK 14  April 11  STUDENT PRESENTATIONS AND DISCUSSIONS

WEEK 15  April 18  STUDENT PRESENTATIONS AND DISCUSSIONS