

4.154

Architecture Design
Option Studio

Fall 2017

Order and the Environment

Instructors

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Prerequisites: 4.153

Subject Description

This architecture design studio considers the relationship between container and contained. How can architecture anticipate the objects and actions it is to house or hold?

Design Approach

Order Through Structure

In accelerated times, design justified through program is born dead. Programs are not stable, and typically, despite most well-meaning intentions, misalign with people's behaviors. Monofunctional organizations foreclose possibility. How, then, might we order architectural space in times of flux?

To this end Umberto Eco's *Opera Aperta* (1962) describes a beautifully useful approach captured in his conjecture of openness, which characterizes an author's cultural production as a "decision to leave arrangements of some constituents of a work to the public or to chance." In architecture, we can imagine this idea as the construction of a spatially open framework, or loose order, and situate it in opposition to programmatic and typological plan-making approaches. Such is an attitude that considers semi-autonomous spatial organizations that accommodate, or even merely tolerate, evolving configurations of activities and things. These open orders can have an underlying structural or material logic, but are just as well allusive, compositional, figurative, or arbitrary. Here the architect exceeds the role of translator, a converter of needs and wants into plans, or re-arranger, fitting preexisting spatial archetypes within a site, and instead becomes an author. It is where all alibis vanish and we are left to our own devices. A clear, open system is elemental. But in opposition to order through repetition, our times allow for, or even demand, a certain looseness or indifference—"well, kind of, you know, whatever!" Spatial arrangements that generate variety prevail, as activities, objects, and things fluctuate in scale and occurrence. An open structure is anticipatory. It opens up a space of future possibilities. It is intentionally to be determined. It triggers spontaneous participation and focuses on the choreography of situations. There is no start or end, no entry or exit. It does not dictate how to move.

As in the forest, one has to find one's own path. All hierarchies are eliminated. The framework is pliable yet acknowledges specific conditions. These can be existing site conditions or internal moments of the project. The confrontation with these conditions generates idiosyncrasies that act as points of gravity, providing orientation and specificity. These loci evoke tension between the systematic and the particular. For larger sites, multiple orders can overlap and interfere. The colliding logics create friction and specificity. In Eco's notion of the open work, through the lens of architecture, we can start to see the plan beyond an operational manual as something less determined and more catalytic. The plan becomes an enabler—a device that calibrates relationships, a tool for the production of spatial events.

The relationship between space and structure is self evident. Structure, the bones of a building, is the most permanent of all elements that make up a building. Often however, how to support the building form is an afterthought, after program and form are determined. This studio will look at structure as a principal ordering device. By analyzing the work of a number of visionary structural engineers we will develop an understanding of structure as a driver for design. This understanding will then be tested to make various spatial orders that can be evaluated on their ability to contain program and allow flow.

Art and the Environment

American artists should not be ashamed of their country, it is magnificent. Why do so many American painters continually go abroad when they have at home scenes of such varied beauty?"

*Henri Matisse, [Time Magazine](#),
"29th Carnegie Institute International Exhibition of Modern Painting,"
October 20, 1930.*

Program

The final project of the studio will be the design of an archive and an exhibition space for modern and contemporary art inspired by the American West, housed within the Nevada Museum of Art, a relatively young museum in Reno. This institution owns a number of collections that focus on art inspired by the American Landscape. Part of this legacy is that of the Land Art movement that emerged prominently in the United States towards the 60's and 70's, at the height of the Cold War and American dominance in the western world. The expansive American landscape evoked a sense of freedom and empowerment. At the same time, concerns of the art movement centered around rejection of the commercialization in art-making, and an enthusiasm with an emergent ecological movement. The movement coincided with the popular rejection of urban living. Included in these inclinations were spiritual yearnings concerning the planet Earth as home to mankind.

The Nevada Museum of Art's collections focus on art inspired by the American West, as well as art that deals with the altered landscape. What is the effect of human action on

our landscape? What is left of this American spirit today? What is the relationship to the American Landscape? How should we imagine an architectural order that can house an exhibition space and archive of art focused on this altered landscape?

Site

Nudged in Western Nevada against the California border are Reno and Sparks, the urbanistically coupled cities that constitute the second most populous metropolitan area in the state. Settled prior by the native Washoe people, it developed in the 1860's with nearby Virginia Springs' mining rush and the infrastructure expansion in the American West. Its primary economic activity since, much like Las Vegas at the extreme south of the state, has included gambling, liberal divorce laws, and tourism, though at a more moderate scale, earning it the motto "The Biggest Little City in the World."

Just nine miles east of Reno-Sparks in neighboring Storey County (one of the least populous in the state) is the Tahoe-Reno Industrial Center (TRIC, TRI Center), a public-private partnership that owns 30,000 acres of developable land on a site more than three times the size. Today, half of this area has been developed, garnering it a reputation as the largest such industrial park in the country, home to facilities of 130 companies, complete with tax incentive packages, streamlined permitting, and infrastructure in place for large scale development.

Among the cast of characters that currently own property here are: Apple's data center that kick started TRIC's development in 2012, Switch Citadel -- the largest data center campus in the country, a power plant with a 1100 megawatt capacity, manufacturers of construction materials, countless online and in-store fulfillment centers including Walmart, and a newly purchased plot by Google slated for a data center. The most notorious occupant at TRIC is the Tesla Gigafactory, a net-zero battery manufacturing facility being built in phases. Currently less than 30 percent complete, and already boasting 5 million square feet of operational space, when completed in 2020 it will contend to be the largest building anywhere, with an annual production capacity equal to the entire world's battery production combined. Situated on 12 miles of frontage along the I-80 corridor connecting San Francisco to Chicago, this massive industrial center is one of many sites that has and is transforming the image of the West's landscape.

Subject Objectives

Generally, the objective of the course is to develop an ability to research, conceptualize, develop, and represent an architectural project. This will be carried out with the goals of understanding and implementing ordering systems that are configured through structure, proposing how this establishes specific yet flexible forms of containment for the subjects being stored, and how this fulfills the essence of the collection as a whole. This will also require taking positions on how proposals situate themselves within the cultural context of the American West as part of a contemporary condition, and how that is integrated into the values of the proposed structure.

Evaluation Criteria

Evaluation is contingent on students active participation, contribution to the discourse of the studio, demonstrable design development, as well as conceptual and representational clarity.

5% Deliverables

5% Attendance/Participation

Attendance for the full duration of each class is mandatory. You are allowed three excused absences for the semester. An excused absence is defined as one that was discussed with and approved by the professor at least 24 hours prior to the date of absence, or a family or medical emergency that is confirmed by your physician or a dean in Student Support Services.

15% Concept how clearly are you articulating your design intentions?

25% Process: how well are you using your concept to develop a spatial and architectural response to the given program or site?

25% Final Review:

Did you synthesize your concept into a resolved architecture appropriate for the site and larger spatio-temporal context?

Is your architectural response a logical conclusion of your process?

Does your design address the needs called out in the given program?

25% Representation:

Quality of representation?

Evidence of skill/craft?

Ability of representation to convey information?

Clarity of representation?

Absences beyond the three allotted will result in a decrease in your final grade. If you miss six or more classes, you will be asked to drop the subject or receive a failing grade.

Grading

A Exceptionally good performance demonstrating a superior understanding of the subject matter, a foundation of extensive knowledge, and a skillful use of concepts and/or materials.

B Good performance demonstrating capacity to use the appropriate concepts, a good understanding of the subject matter, and an ability to handle the problems and materials encountered in the subject.

C Adequate performance demonstrating an adequate understanding of the subject matter, an ability to handle relatively simple problems, and adequate preparation for moving on to more advanced work in the field.

D Minimally acceptable performance demonstrating at least partial familiarity with the subject matter and some capacity to deal with relatively simple problems, but also demonstrating deficiencies serious enough to make it inadvisable to proceed further in the field without additional work.

F Failed. This grade also signifies that the student must repeat the subject to receive credit.

Schedule

Week 1	Tuesday	9/5	Studio Preview	
	Thursday	9/7	Introduction; Films	<i>Sam</i>
	Friday	9/8	Bus to New York	
	Saturday	9/9	Walking Tour, Assignment 1 Intro	<i>Florian/Sam</i>
	Sunday	9/10	Walking Tour, Dia: Beacon, Return to Boston	<i>Florian/Sam</i>
Week 2	Thursday	9/14	Reading Presentations	<i>Sam</i>
	Friday	9/15	Desk Crit	<i>Sam</i>
Week 3	Thursday	9/21	Pin-Up 1	<i>Florian/Sam</i>
	Friday	9/22	Assignment 2 Intro	<i>Florian/Sam</i>
Week 4	Thursday	9/28	Desk Crit	<i>Sam</i>
	Friday	9/29	(Student holiday) Optional Desk Crit	<i>Sam</i>
Week 5	Thursday	10/5	Desk Crit	<i>Sam</i>
	Friday	10/6	Desk Crit	<i>Sam</i>
Week 6	Thursday	10/12	Pin-Up 2	<i>Florian/Sam</i>
	Friday	10/13	Assignment 3 Intro	<i>Florian/Sam</i>
Week 7	Thursday	10/19	Travel to Reno, Tour Museum, Opening Event	<i>Florian/Sam</i>
	Friday	10/20	Conference	<i>Florian/Sam</i>
	Saturday	10/21	Conference	<i>Florian/Sam</i>

	Sunday	10/22	Tesla, Desert, Davis	<i>Florian/Sam</i>
Week 8	Monday	10/23	Meeting with Execs, Travel to Boston	<i>Florian/Sam</i>
	Thursday	10/26	Pin-Up 3	<i>Florian/Sam</i>
	Friday	10/27	Desk Crits	<i>Florian/Sam</i>
Week 9	Tuesday	10/31	Midterm	<i>Florian/Sam</i>
	Thursday	11/2	Optional Desk Crit	<i>Sam</i>
Week 10	Thursday	11/9	Optional Skype Crit	<i>Sam</i>
	Friday	11/10	(Veterans Day) Optional Skype Crit	<i>Sam</i>
Week 11	Thursday	11/16	Desk crits	<i>Florian/Sam</i>
	Friday	11/17	Desk Crits	<i>Florian/Sam</i>
Week 12	Tuesday	11/21	Desk Crits	<i>Florian/Sam</i>
	Thursday	11/22	Optional Desk Crit	<i>Sam</i>
Week 13	Thursday	11/30	Pre Final Pin-Up	<i>Sam</i>
	Friday	12/1	Desk Crit	<i>Sam</i>
Week 14	Thursday	12/7	Desk Crit	<i>Sam</i>
	Friday	12/8	Desk Crit	<i>Sam</i>
Week 15	Tuesday	12/12	Final Review	

Textbooks and Reading Sources

Suggested Texts:

Doherty, Claire. *Situation*. n.p.: London : Whitechapel Gallery ; Cambridge, Mass. : MIT Press, 2009.

Eco, Umberto. *The role of the reader : explorations in the semiotics of texts*. n.p.: Bloomington : Indiana University Press, c1979., 1979.

Idenburg, Florian; Liu, Jing; Papageorgiou, Ilias, and compiler, editor. SO-IL (Firm). *Solid objectives : order, edge, aura*. n.p.: Zürich, Switzerland : Lars Müller Publishers, [2017], 2017.

Kastner, Jeffrey, and Brian Wallis. *Land and environmental art*. n.p.: London : Phaidon Press, 1998., 1998.

Lailach, Michael. *Land art*. n.p.: Köln ; Los Angeles : Taschen, 2007., 2007.

Lippard, Lucy R. *Undermining : a wild ride through land use, politics, and art in the changing West*. n.p.: New York : The New Press, [2014], 2014.

Mallac, Guy De. "The Poetics of the Open Form: (Umberto Eco's Notion of "Opera Aperta")." *Books Abroad* 45, no. 1 (Winter 1971): 31.

Prat, Ramon. *Desert America, territory of paradox*. n.p.: Barcelona : Actar, 2006.

Steeds, Lucy. *Exhibition*. n.p.: London : Whitechapel Gallery ; Cambridge, Massachusetts : The MIT Press, 2014.

Tufnell, Ben. *Land art*. n.p.: London : Tate ; New York : Distributed in the U.S. by Harry N. Abrams, 2006., 2006.

Zeiger, Mimi. "The Trove: On Vaults, Innards, and the Broad Collection." *Harvard Design Magazine* no. 43 (Fall/Winter2016 2016): 30.

Suggested Films:

Barbash, IlisaCastaing-Taylor, LucienKoehler, Robert, and Guild. Cinema. *Sweetgrass*. [videorecording]. n.p.: [New York] : Distributed by the Cinema Guild, c2010., 2010.

Burns, Ken. 2015. *Ken Burns : The West- 1848 to 1856*. n.p.: [San Francisco, California, USA] : Kanopy Streaming, 2015., 2015.

Crump, JamesComte, MichelTamburri, NickThemistocleous, AlexO'Haire, RobertAcconci, VitoAndre, CarlCelant, GermanoCooper, Paul A.Gorgoni, GianfrancoSharp, PamelaSmithson, RobertSzeemann, HaraldWeiner, LawrenceHeizer, MichaelHolt, NancyDwan, VirginiaOppenheim, DennisSharp, WilloughbyRoss, CharlesDe Maria, Walter, and presenter.First-Run Features (Firm), film distributor. Summitridge Pictures. *Troublemakers*. n.p.: New York : First Run Features, 2015., 2015.

Holt, Nancy. YouTube. December 23, 2008. Accessed September 03, 2017.
<https://www.youtube.com/watch?v=RYPWcdty7DE&feature=youtu.be>.

PeriscopeFilm. YouTube. April 23, 2015. Accessed September 03, 2017.
https://www.youtube.com/watch?v=QL_YzlhqpbY.

Smithson, RobertHolt, NancyJarvis, Barbara, and distributor. Electronic Arts Intermix (Organization). *Spiral jetty*. n.p.: [New York, N.Y.] : Electronic Arts Intermix, [2016?], 2016.

Final Studio Deliverables

Representation for the final review will be formatted such that each of the following occupies a sheet size of 36"x36", 36"x72" or 72"x36", as necessary.

Site plan (1/64"=1'0")

Context Plan (1/256"=1'0")

Diagrams/Rationale/Structure

Plan (1/16"=1'0")

Section (1/16"=1'0")

Aerial Perspective

Street Level Perspective

2 Interior Perspectives

Global Axonometric (1/16"=1'0")

Local Axonometric (1/4"=1'0")

In addition to the above, a succinct presentation of your work will be formatted as a museum brochure, printed double sided on Letter and folded (for instance as a tri fold). The brochure will capture the values and argument of your project but through the tone and perspective of the institution. Enough copies will be printed for jurors. The complete work of the studio will also be compiled into a book with a consistent template, and will be printed as a single copy for the final review.

Physical model (1/16"=1'0")

Grades will not be posted for students to view on their grade report until their work has been archived. The projects need to be properly prepared and formatted, and delivered to the Archiving TA. Studio TA's will collect project archives from each student immediately following the review. Detailed requirements and instructions for formatting will be posted to CRON, the Department website, and sent to students at the beginning of the semester.

Academic Integrity + Honesty

MIT's expectations and policies regarding academic integrity should be read carefully and adhered to diligently: <http://integrity.mit.edu>

Student Performance Criteria: NAAB

Realm A: Critical Thinking and Representation

A1. Communication Skills: Ability to read, write, speak and listen effectively

A2. Design Thinking Skills: Ability to raise clear and precise questions, use abstract ideas to interpret information, consider diverse points of view, reach well-reasoned conclusions, and test alternative outcomes against relevant criteria and standards

A3. Visual Communication Skills: Ability to use appropriate representational media, such as traditional graphic and digital technology skills, to convey essential formal elements at each stage of the programming and design process.

A6. Fundamental Design Skills: Ability to effectively use basic architectural and environmental principles in design.

A7. Use of Precedents: Ability to examine and comprehend the fundamental principles present in relevant precedents and to make choices regarding the incorporation of such principles into architecture and urban design projects.

A8. Ordering Systems Skills: Understanding of the fundamentals of both natural and formal ordering systems and the capacity of each to inform two- and three dimensional design.

Realm B: Integrated Building Practices, Technical Skills and Knowledge:

B9. Structural Systems: Understanding of the basic principles of structural behavior in withstanding gravity and lateral forces and the evolution, range, and appropriate application of contemporary structural systems.

Realm C: Leadership and Practice

C3. Client Role in Architecture: Understanding of the responsibility of the architect to elicit, understand, and reconcile the needs of the client, owner, user groups, and the public and community domains.