Liminal Interventions

Studio Information

48-410 Advanced Synthesis Options Studio (18 Units)
Carnegie Mellon University School of Architecture
Class Times: MWF 01:30PM - 04:20PM SP15
Class Room: CFA 200

Instructor: Eddy Man Kim (eddymankim@cmu.edu)
Office Hours: By appointment via email
Office Location: MMCH 309

Teaching Assistant: Tom Shen (tomshen@cmu.edu)
Office Hours: By appointment via email

Corequisite to elective 48-548 “Design Communication” strongly recommended.

Studio Description

*Liminal Interventions: Hybrid Interface Design Build Studio* is an attempt at addressing the need for architects to become more versatile in traversing and integrating the physical and digital domains. In this studio, students will work in groups to design, procure, build, and deploy installations that explore the ambiguities of architectural materiality and scale as manifested by the trending culture of Big Data and the increasingly quantifiable universe. The goal of the studio is for every student to experience the full spectrum of design project delivery process, from predesign to deployment, but through the medium of physical and digital constructs.

Studio Structure

In order to accomplish the ambitiously compressed task, the studio will work in following phases:

**Phase 1: Research Issue & Determine Client Base (2 weeks)**
*Who and what is this for? Research an issue and determine a need based on conversations with the selected client base.*

**Phase 2: Material Study Prototype & Software Prototype (3 weeks)**
*What is it? Not necessarily reflecting any particular context, develop a hybrid physical/digital prototype.*

**Phase 3: Site-specific Prototype (3 weeks)**
*Where is it? Delve into more spatial and contextual explorations of the prototype. Finalize installation proposal.*

**Phase 4: Planning & Procurement (2 weeks)**
*Finalize logistics and order any additional material for final production.*
Phase 5: Final Production & Marketing (2 weeks)
*Complete final production of the installation and promote project for unveiling.*

Phase 6: Fine Tuning & Deployment (3 weeks)
*Deploy project in situ. Complete final adjustments and troubleshoot technical problems.*

**Studio Themes**

Big Data and its trends. The quantifiable self and the world.


Issues in urban living: Mobility, Environment, & Community.

Crossfading of new media tools and techniques from other disciplines.


**Objectives**

Develop a critical understanding of media, technology, design, and the practice of architecture, engineering, and construction.

Gain an opportunistic attitude towards the future of architectural design profession.

Interface with a client base and establish the necessary feedback loops for the project at hand.

Acquire new skills or knowledge of new media tools and workflows.

Apply the new skills or knowledge to a solving a design problem.

Familiarize with workflows to gather, analyze, and visualize/project/interact with data.

Design and build a full scale interactive installation.

Test ideas using models and other prototyping techniques.

**Technical Workshops**

You are expected to be proactive in managing the learning curve for any technical skills necessary to execute the project you propose to install. You are be responsible for attending any critical technical workshops and lectures offered both in and outside studio times. There’s also a myriad of online resources that may serve your needs.
Readings


Studio Policies

 adopted from “Timber: Augmented Wood Construction,” taught by Joshua Bard

Technology should be used to inspire and execute your work in studio. Please do not graze on social media or stream content during studio. Texting during lectures – no. Looking up a quick image of an architect whose name is dropped during a review – yes

Attendance is essential to your development in studio. More than three unexcused absences will lower your final grade. Missing a review could result in a failing grade for that project. Disappearing for a few weeks while you pledge – no. Bringing a signed doctor’s note regarding a recent absence – yes

As architects we invest quite a bit of energy in the built environment. That ambition should be reflected in the way you maintain your studio space. Pushing last week’s lunch under last month’s site model – no. Hanging precedent and inspiration by your desk – yes.

Context matters in architectural education. Spending time working in studio with your colleagues is invaluable. Mumbling “see you Monday” as you slip out of studio Friday afternoon – no. Encouraging a classmate who has been drooling on his / her desk for the last hour to go home and get some rest – yes.

Computers are really helpful. Until they’re not. Back up your work! If your computer crashes the night before a review you cannot have it present in your place. So have a backup plan. Did I mention to back up your work? Better yet, work in the cloud.
Documentation

Students are expected to thoroughly document the final product and all process work.

A complete documentation and narrative of the project should be both submitted as a single pdf and showcased online.

Evaluation Criteria

adopted from “Timber: Augmented Wood Construction,” taught by Joshua Bard

Critical Inquiry

+ Syntheses of intensive and extensive thinking. Making connections outside the given scope.
/ Work sacrifices breadth or depth. Takes project as given.
- Fragmented work. Inattentive to project aims

Communication

+ Strong verbal and visual communication.
/ Legible verbal and/or visual communication.
- Poor verbal and/or visual communication.

Creativity

+ Imaginative and risk taking.
/ Inventive.
- Normative.

Craft

+ High level of craft validates and extends impact of the work.
/ Work is well-made.
- Lack of attention to details compromises the work’s impact.

Motivation

+ Self-Motivated.
/ Needs faculty motivation.
- Lacks motivation.

Voice

+ Voice of individual apparent.
/ Developing a personal voice.
- Little personal voice.

Editing / Process

+ Learns from critique. Develops through iteration.
/ Develops work under the pressure of deadlines.
- Inability to respond to critique. Little development of initial ideas.
Grading Rubric

*adopted from “Timber: Augmented Wood Construction,” taught by Joshua Bard*

A – excellent
Work reflects outstanding achievement in content and execution. Work far exceeds given requirements. Students in this category demonstrate: High self motivation, Independent thinking and expression, Use precedent as a catalyst, Highly disciplined, Willingness to take risks, High ability to focus, Systemic questioning, Self critique and editing, Highest qualities of representation.

B – good
Work reflects high achievement in content and execution. Work exceeds given requirements. Students in this category demonstrate: Some external motivation, Periodic independent thinking, Good discipline, Beginning to take risks, Good qualities of representation, Periods of focus, Closed-ended questioning, Open to suggested critique and editing.

C – satisfactory
Work fulfills given requirements. Students in this category demonstrate: External motivation, Cannot extend precedent, Low discipline, Conformity, Short periods of focus, Average qualities of representation, Limited questioning, Dependent on external critique and editing.

D – poor
Work is less than satisfactory. Work minimally or incompletely fulfills given requirements. Students in this category demonstrate: Lack of motivation, Ignore precedent, Lack discipline, Duplication, Few periods of focus, Low qualities of representation, Little questioning, Non-responsive to external critique and editing.

R – inadequate
Work fulfills few or none of the given requirements. Work is substantially incomplete. Student missed one or more scheduled reviews.

I – incomplete
Given only for emergency or medical reasons. Contact coordinator as early in the semester as possible regarding an incomplete.

**Distribution**

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<td>Phase 5</td>
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<td>Phase 6</td>
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<td>Participation</td>
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**Student Concerns**

A hallmark of the collaborative design environment is the desire to address student concerns directly and resolve disagreements quickly. Occasionally members of the class may have concerns regarding the course
schedule, expectations, project evaluations, and related issues. In those instances, please bring concerns to the attention of the instructor. In the event that the response from the instructor is unsatisfactory, present the concerns to Heather Workinger.

School of Architecture Handbook

Each student (both graduate and undergraduate) is responsible for conducting his or her self in compliance with the Undergraduate Handbook & Graduate Handbook. See the School of Architecture website to download this document. (http://www.cmu.edu/architecture/handbooks/index.html)

Accommodation / Disability Resources

Students who may need assistance should contact Disability Resources to discuss accessing any unique accommodations. It is your responsibility to share any relevant documentation at the start of the semester with your instructor. (http://www.cmu.edu/hr/eos/disability/students/index.html)

Academic Integrity

All students are responsible in conducting all coursework following Carnegie Mellon University Policy on Academic Integrity. This policy was approved by the President’s Council on April 11, 2013 and replaces the University Policy on Cheating and Plagiarism, which was originally issued to campus on June 16, 1980 as Organization Announcement #297, and then revised in 1990. (http://www.cmu.edu/policies/documents/Academic%20Integrity.htm)

Links + Resources

Projection + New Media Projects

http://architizer.com/blog/roomalive-instantly-transform-your-living-room-into-an-augmented-reality-video-game/
http://thecreatorsproject.vice.com/blog/exclusive-video-the-making-of-box
http://projection-mapping.org/the-most-awesome-sandbox-ever/
http://projection-mapping.org/travis-threlkel-projection-mapping-works-use/
http://joanielemercier.com/
http://www.creativeapplications.net/tutorials/guide-to-projectors-for-interactive-installations/
http://cmuems.com/2013/a/miles/10/17/keyfleas/
http://www.newamericanpublicart.com/interactivepublicart/
http://random-international.com/work/
https://tinoschwanemann.wordpress.com/2014/01/13/projection/
Urban Intervention Projects

http://toparkornottopark.com/
http://www.openairphilly.net/
http://architizer.com/projects/superkilen/
http://designntaxi.com/news/361896/In-Paris-Interactive-Doors-Transport-Pedestrians-To-Other-European-Cities/?interstitial_shown=1
http://architizer.com/blog/transit-shelters-get-slimmed-down/

Other Installation Projects

http://architizer.com/blog/see-the-berlin-wall-recreated-with-night-lights/
http://www.archdaily.com/569709/
http://architizer.com/blog/sustainable-hedonist-escape/

Game Design

http://architizer.com/blog/how-a-video-game-is-made-from-paper-and-cardboard/
http://www.creativeapplications.net/unity-3d/nothing-of-this-is-ours-multiplayer-game-by-alex-myers/

Architecture + Branding

http://architizer.com/blog/whats-in-a-name-five-awesome-branded-experiences/

Wearables, Quantified Self - Home - World, Internet of Things

http://www.fastcodesign.com/3036295/4-wearables-that-give-you-superpowers?utm_source=facebook
http://www.wink.com/
http://www.wemothat.com/
http://architizer.com/blog/airbnb-matchmaking-technology/
http://www.whistle.com/offer/?gclid=CK-DmffR4sECFUlk7AodjVgAiw
https://medium.com/re-form/data-driven-architecture-78992b22b3f1

Research Projects, Labs, Studios, Courses, Festivals, Blogs

http://golancourses.net/2015/lectures/introductory-pep-talk/
http://senseable.mit.edu/
http://www.apoloquestudio.com/
Big Data, Smart Cities, Machine Learning

http://www.aan1.net/
http://edibleinfrastructures.net/
http://lmnts.lmnarchitects.com/
http://www.cutoutlife.com/
http://www.ground.hk/
http://audi-urban-future-initiative.com/
http://www.creativeapplications.net/
http://eyeofestival.com/
http://www.utiledesign.com/
http://automobility.ideo.com/


Ambulance Drone
http://www.fastcodesign.com/3038210/can-you-put-an-urban-farm-there-this-app-will-tell-you?utm_source
http://senseable.mit.edu/wave/
http://architizer.com/blog/oil-paintings-in-google-street-view-show-london-as-youve-never-seen-it-before/
http://www.ted.com/talks/will_marshall_teeny_tiny_satellites_that_photograph_the_entire_planet_every_day

Audi Urban Future Award 2014 - Team Mexico City
http://www.ripenear.me/
http://campusdata.org/
http://www.spatialcomplexity.info/
http://architizer.com/blog/8-impossibly-dynamic-facades-that-were-actually-built/
https://www.google.com/atap/projecttango/#project
http://www.nytimes.com/interactive/2015/01/09/sports/the-dawn-wall-el-capitan.html?_r=0

Technology Blunders

Data Science + Visualization
Guggenheim Helsinki Architectural Competition Data
http://uxmag.com/articles/its-about-time
http://bost.ocks.org/mike/algorithms/
http://www.timescape.io/login
http://architizer.com/blog/watch-megacities-grow-before-your-eyes-with-these-interactive-maps/
http://www.slideshare.net/seanjtaylor/putting-the-magic-in-data-science
http://opendataday.org/
http://www.ted.com/talks/susan_etlinger_what_do_we_do_with_all_this_big_data
http://maps.stamen.com/#watercolor/12/37.3430/122.2687
http://taxi.imagework.com/
http://geothegy.co.uk/blog/visualisations/
http://hint.fm/wind/index.html
http://www.newscientist.com/downloads/110m-physical-vectors/
http://www.creativebloq.com/design-tools/data-visualization-712402
http://data-arts.appspot.com/globe/

Innovation as Business Strategy, Disruptive Technologies
http://grist.org/climate-energy/rooftop-solar-is-just-the-beginning-utilities-must-innovate-or-go-extinct/

Construction, Fabrication, Robotics, Human-Computer Interaction
http://architizer.com/blog/experimental-design-when-science-shapes-architecture/
http://architizer.com/blog/is-ultra-thin-seashell-shaped-steel-the-next-miracle-material/
http://www.archdaily.com/347905/architecture-by-robots-for-humane/
http://architizer.com/blog/contemporary-barricades/
http://www.archdaily.com/564724/loios-recovery-odda/

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http://www.wikihouse.cc/
https://www.fabhub.io/
http://www.shapeways.com/
http://architizer.com/blog/8-impossibly-dynamic-facades-that-wereactually-built/
http://tangible.media.mit.edu/project/inform/

DIY Maker Culture

UI / UX Design
http://www.google.com/design/
https://www.navdy.com/

Just Something Beautiful
https://haxiomic.github.io/GPU-Fluid-Experiments/html5/?q=High
http://weavesilk.com/
http://www.acnpilwql.com/#/main
http://www.wired.com/2015/01/beautiful-troubling-photos-show-planet-astronauts-see/#slide-id-1712617:full
# Liminal Interventions – Schedule

<table>
<thead>
<tr>
<th>Phase</th>
<th>Date</th>
<th>Activity</th>
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<tbody>
<tr>
<td>1</td>
<td>Jan 12</td>
<td>First day of school</td>
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<td>Jan 14</td>
<td>Introduction</td>
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<td></td>
<td>Jan 16</td>
<td>Desk Crits</td>
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<td>Jan 19</td>
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<td>Jan 21</td>
<td>Pinup: Phase 1 Progress</td>
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<td>Jan 23</td>
<td>Processing Workshop</td>
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<td>Jan 26</td>
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<td>Jan 28</td>
<td>Review: Phase 1</td>
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<td>Jan 30</td>
<td>TSPS, Synapse, OSC Workshop</td>
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<td>Feb 2</td>
<td>Desk Crits</td>
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<td>Feb 4</td>
<td>Firefly + Computer Vision Workshop</td>
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<td>Feb 6</td>
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<td>Feb 16</td>
<td>Review: Phase 2</td>
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<td>Feb 18</td>
<td>Data Scraping Workshop</td>
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<td>Data Visualization Workshop</td>
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<td>Midterm Review: Phase 3</td>
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<tr>
<td></td>
<td>Apr 29</td>
<td>Last day of classes</td>
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* Subject to Change
** Final Review / Exhibition Date TBD