

1:1 Crafting and Fabrication of Details

Location: 200 Buell

Time: Tuesday 7 PM - 9PM

Instructor: Zach Mulitauaoepele



Detail and mock-up review for Camber Studio's recent design-build project in the Brooklyn Navy Yards.

Course Overview

As digital fabrication processes continue to advance, our comprehension and command of these construction methodologies is critical in capturing the full potential they offer to the built environment and how we design. 1:1 will focus on advanced detailing, fabrication, and assembly techniques. We will challenge the conventional illustrative mode of architectural detailing by using 1:1 material exploration to facilitate design ideation and spatial speculation. The course encourages curious fabrication, rogue detailing and imaginative research into new potentials for building assemblies.

Participants will iteratively build a totem, a remixed and on the fly response to the default wall mock-up. Shifting through scales of a building, we will track the spatial and technical trajectory of detailing custom hardware, new wall typologies, structural abnormalities and fully customized building skins. The course will oscillate between detailing and fabricating these spatial constructs, always building off of the previous week's iteration to facilitate new and unimagined component adjacencies. The totem, which should be thought of as a living prototype, should fill a 2'x2'x5' volume and will incorporate lateral connection requirements provided by the instructor. The final totem assemblies will be connected to form an 8'x8' mini pavilion and even further the unforeseen spatial relationships.

Lectures + Site Visits

Each week we will cycle through an array of building assemblies, material innovations, and fabrication techniques. We will also visit design build firms around the city along with recent projects requiring extreme specificity in detailing and fabrication protocols.

Deliverables

- Speculative and technical drawings
- Students will design, detail and fabricate a 1:1 totem measuring 2'x2'x5'
- Construct process documentation
- Class compiled 1:1 spatial chunk specification book

Prerequisites

Students enrolling in this course should be familiar with basic shop equipment and safety protocols. Knowledge of advanced digital fabrication with the CNC or robotic arm is welcomed but not required. Students should complete any shop safety course prior to first day of class.

Due to space limitations and material costs, students will work in groups of two and will be required to cover the cost of their chosen materials.

Schedule

Week 1:

Class Introduction

Topic 1: Hardware

Next week deliverable, **detail 1: hardware**

Week 2:

Material introduction metal

Detail 1 review

Next week deliverable, spatial chunk.01

Week 3:

Topic 2: Wall Assembly

Construct review

Next week deliverable, **detail 2: wall typology**

Week 4:

Material introduction wood + joinery samples

Detail review

Next week deliverable, spatial chunk.02

Week 5:

Topic 3: Structure

Construct review + mid review work session

Week 6:

Mid Reviews

Week 7:

Material introduction concrete + mold making demo

Next week deliverable, **detail 3: structural connection**

Week 8:

Topic 4: Skin

Detail review

Next week deliverable, spatial chunk.03

Week 9:

Material introduction composites

Construct review

Next week deliverable, **detail 4: skin**

Week 10:

Detail review + work session

Next week deliverable, spatial chunk.04

Week 11:

Construct review + work session

Week 12:

Final Review

Site Visits:

Camber Studio, Redhook

SITU, Navy Yards

Crye Precision, Navy Yards

BAM, Fort Greene