

**S E L E N A Z H E N**

**P O R T F O L I O**

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I'm currently a student at Carnegie Mellon University pursuing my Bachelor's Degree in Architecture and Minor in Human Computer Interaction as well as a passion for the beauty of experience and detail. I strongly believe in the process of design and its applications to situations outside of architecture and design, and am looking forward to ways I can improve human experience, expand my skillset, and develop new methods of approach to design.

## CONTACT

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## EDUCATION

**CARNEGIE MELLON UNIVERSITY**  
Bachelors of Architecture  
Minor in Human Computer Interaction  
Pittsburgh, PA  
2020

**INDIANA ACADEMY FOR SCIENCE, MATHEMATICS, AND HUMANITIES**  
Academic Honors Diploma  
Muncie, IN  
2015

## SKILLS

<b>DIGITAL</b>	<b>ADOBÉ SUITE</b>
Rhinoceros 3D	Photoshop
Sketchup	Illustrator
AutoCAD	InDesign
V-Ray	After Effects
Grasshopper	Premiere Pro
Revit	Dreamweaver

**ANALOG/FABRICATION**  
Drawing  
Drafting  
Model-Making  
Laser Cutter  
Woodshop  
3D Printing  
Photography (Digital)

**UI/UX DESIGN**  
Sketch  
InVision  
Figma  
Prototyping  
HTML/CSS  
Python

## RECOGNITION

**INDIANA ARCHITECTURAL FOUNDATION**

2018 Scholarship Recipient, for academic excellence as an architectural student.

## EXPERIENCE

**EXPERIENCE DESIGNER**  
**BLUECREW, SAN FRANCISCO, CA**  
**JUNE 2018 - AUGUST 2018**  
Redesigned and refocused BlueCrew's app user interfaces by creating mockups, branding guidelines, and prototypes. Aligned with the developer team to iterate on user interfaces and user interactions. Created branding items and design products for overall brand clarity and continuity.

**DIGITAL MEDIA TEACHING ASSISTANT**  
**SCHOOL OF ARCHITECTURE, CARNEGIE MELLON UNIVERSITY**  
**JANUARY 2018 - MAY 2018**  
Provided in-class instruction and recitation instruction to first-year architecture students to advance their knowledge of digitally created architectural concepts.

**FASHION DESIGNER**  
**LUNAR GALA, CARNEGIE MELLON UNIVERSITY**  
**AUGUST 2017 - FEBRUARY 2018**  
Designed and produced a 10-piece fashion line, SURFACE, from start to finish, which comprised of mapping the topographical geography of the ideal human body. In collaboration with Michael Powell.

**FRONT-END DEVELOPER & GRAPHIC DESIGNER**  
**ZINC TECHNOLOGIES, SAN FRANCISCO, CA**  
**JUNE 2017 - AUGUST 2017**  
Redesigned and redeveloped Zinc.io, PriceYak, Subtotal, and Lionfish product websites. Commissioned to redesign website and app UI, reimagine branding, and create logos.

## LEADERSHIP

**PRESIDENT**  
**AMERICAN INSTITUTE OF ARCHITECTURE STUDENTS (AIAS), CMU CHAPTER**  
**MAY 2018 - PRESENT**  
Chaired the Executive Board to lead programming, events, culture, community, and educational initiatives for the School of Architecture at Carnegie Mellon University. As president, I serve as a liaison to the national organization, which stands as the sole student voice in the professional architectural field. Assisted in receiving National Chapter Honor Award for both 2016 and 2018.  
Previously served as Vice President (2017-18) and Treasurer (2016-17).

**ASSOCIATE CHAIR - BEAUX ARTS BALL**  
**BEAUX ARTS BALL COMMITTEE, COLLEGE OF FINE ARTS**  
**AUGUST 2017 - OCTOBER 2018**  
Directed and oversaw the planning of the Beaux Arts Ball for the College of Fine Arts. Established a groundwork for the committee to plan the 600+ person ball, including working on tracks focused on Security, Volunteers + Staffing, Decorations, Finance, and PR/Marketing.

**TECHNOLOGY TRACK CHAIR**  
**AIAS 2016 NORTHEAST QUAD CONFERENCE**  
**AUGUST 2015 - MARCH 2016**  
Planned and organized a national architecture conference with 500+ attendees.

# ARCHITECTURE

# ENVIRONMENTAL CHARTER SCHOOL

3rd Year | Spring 2018  
Advanced Construction Studio

## GOAL:

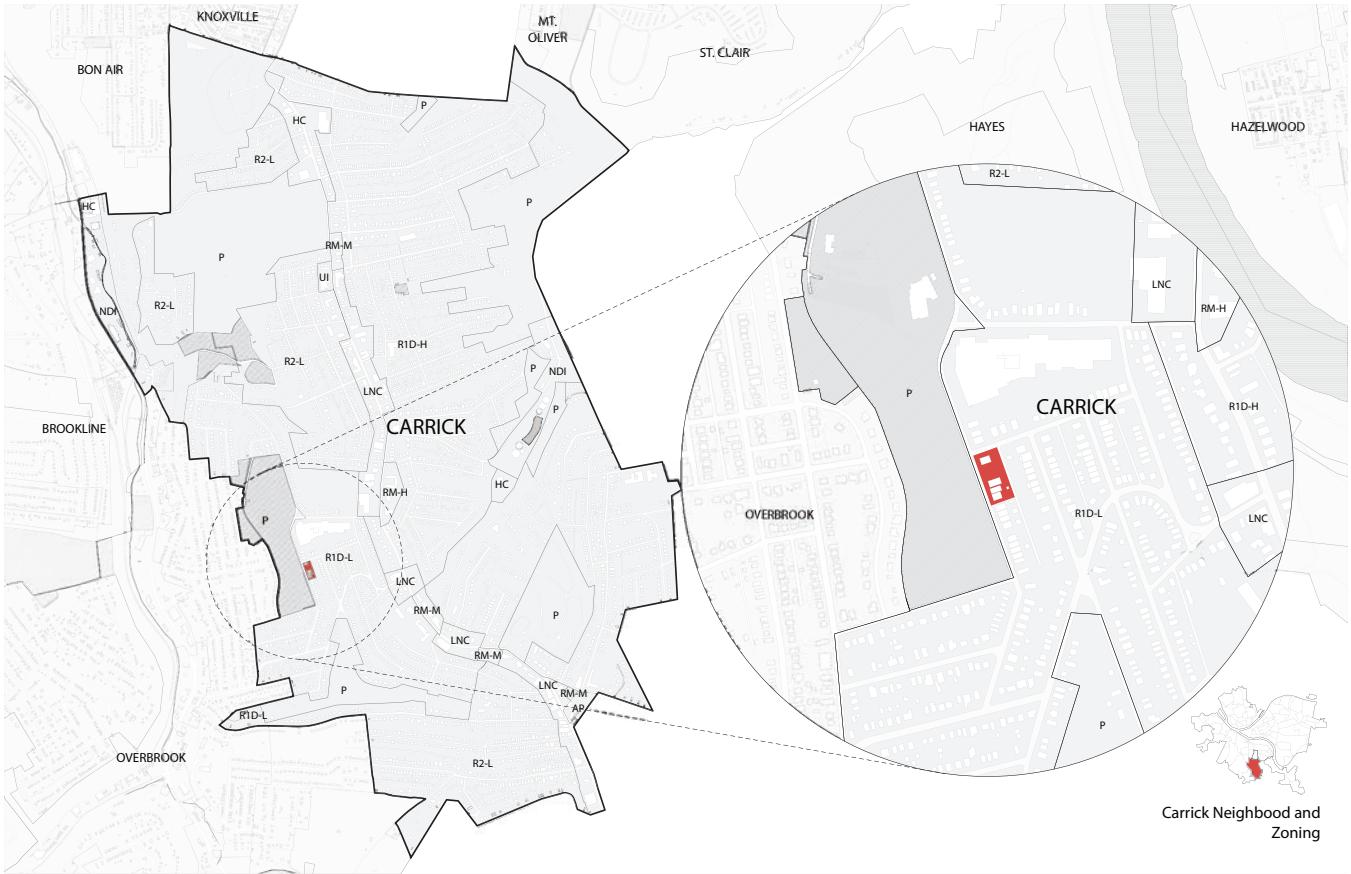
The Advanced Construction Studio project focused on working together with the leadership, teachers and students of the Environmental Charter School (ECS) in Pittsburgh to explore concepts for the design of their next generation of middle schools. I was asked to prototype a charter middle school for 6th to 8th graders based on their school values. A fundamental aspect of ECS is to teach ecological literacy. To this end, students and teachers must be provided the opportunity to actively engage in the operation of the building - from passive strategies to active strategies to measuring and verification of performance. The goal of the project was also to use previous knowledge of design methods and extend those skills to understand spatial systems, structural systems, enclosure systems, material systems and construction systems for the building.

## FROM THE PA DEPARTMENT OF EDUCATION WEBSITE:

"Charter schools were created to provide opportunities for teachers, parents, students and community members to establish and maintain schools that operate independently from the existing school district structure as a method to accomplish the following: improve student learning; increase learning opportunities for all students; encourage the use of different and innovative teaching methods; create new professional opportunities for teachers; provide parents and students with expanded choices in the types of educational opportunities that are available within the public school system; and be accountable for meeting measurable academic standards."



Exterior Elevation



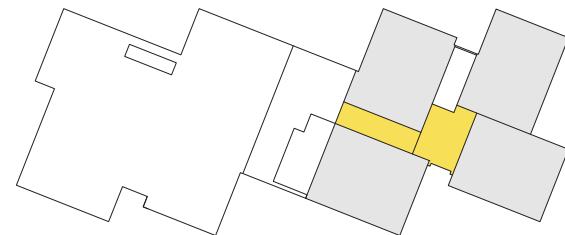
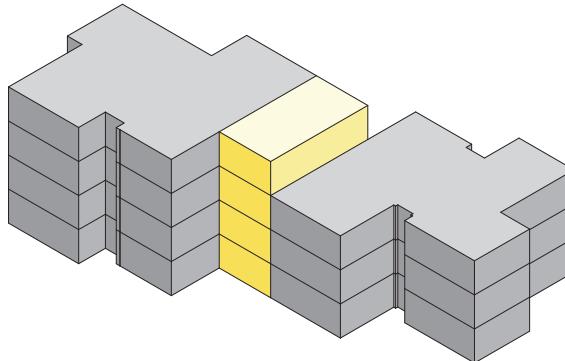
## SITE

Carrick Neighborhood, near Phillips Park and Carrick High School

- 2237 Spokane Ave
- 2241 Spokane Ave
- 2245 Spokane Ave
- 2249 Spokane Ave
- 2251 Spokane Ave

## LOCATION DESIGN

The site for the Environmental Charter School project is down the street from Carrick High School, across the street from Phillips Park. After speaking to residents of the neighborhood, we found that it was a popular commuting area, and many families have to send their students to middle schools in other neighborhoods. This site is ideal for students of the Carrick neighborhood, as this neighborhood does not have a 6-8 school.



## CONCEPT

The building is separated into three parts; the North and South wings, connected by circulation and social spaces. Each wing on each floor holds a different purpose, and the program is spread throughout these areas; for example, every grade is located within its own 'neighborhood' wing of 4 studios. Also, the building is situated so it faces the direct cardinal directions, allowing the school to have direct views of Phillips Park, and to take advantage of the solar benefits. The 4th Floor South Wing is designed as an Outdoor Learning Space, allowing opportunities for students to learn about the passive and active systems of the building, as well as urban garden systems.



## STUDIO DESIGN

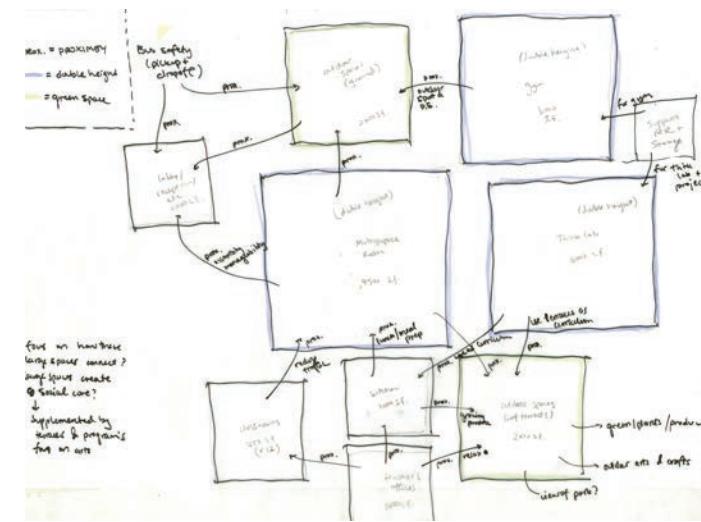
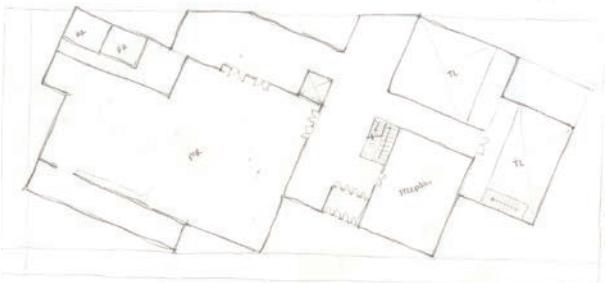
The floor plan of the building is designed so that each studio has at least 2 directions of natural light and a small outdoor patio for individual outdoor learning opportunities. The studios' windows are designed to double as a learning space as well as fenestration. The brick rainscreen between two windows works as a screen to allow in various types of light and provide an interior design opportunity for seating or shelving.

## STRUCTURE

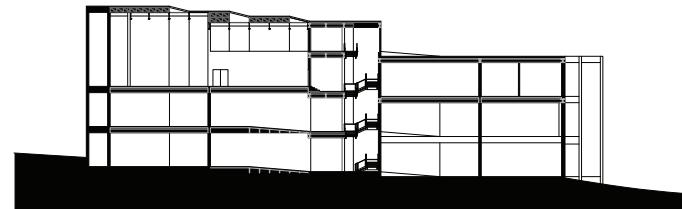
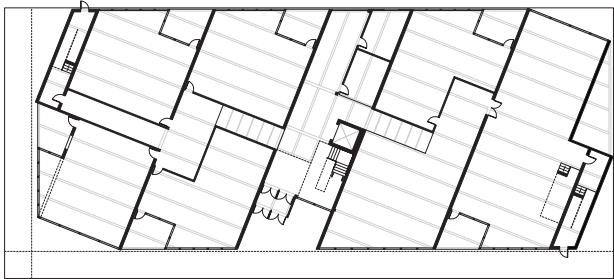
The Environmental Charter School is designed as a steel structure system, with a brick rain facade. Because of the steep slope of the given site, the three parts of the building are connected by ramps, allowing for accessibility access throughout the building.

## PROCESS

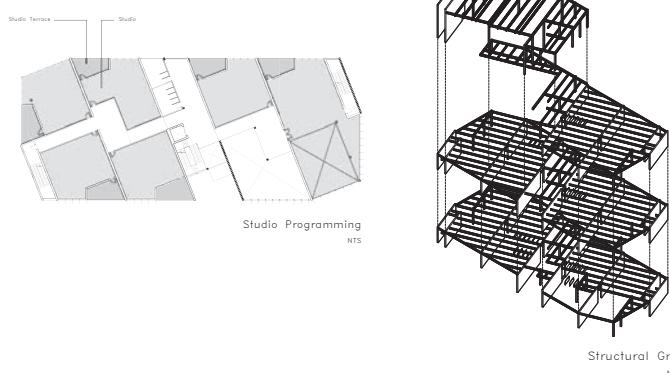
### 1. Initial Sketch Concepts



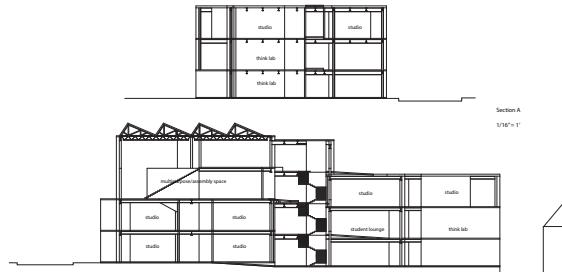
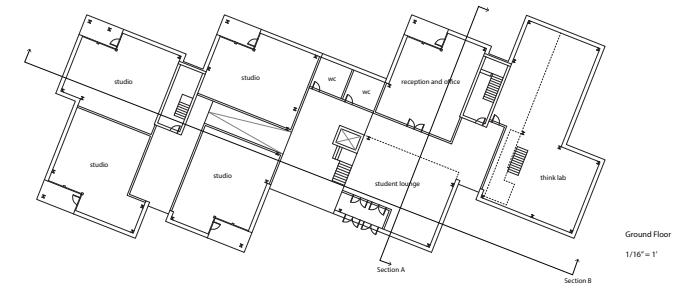
### 2. Site Orientation



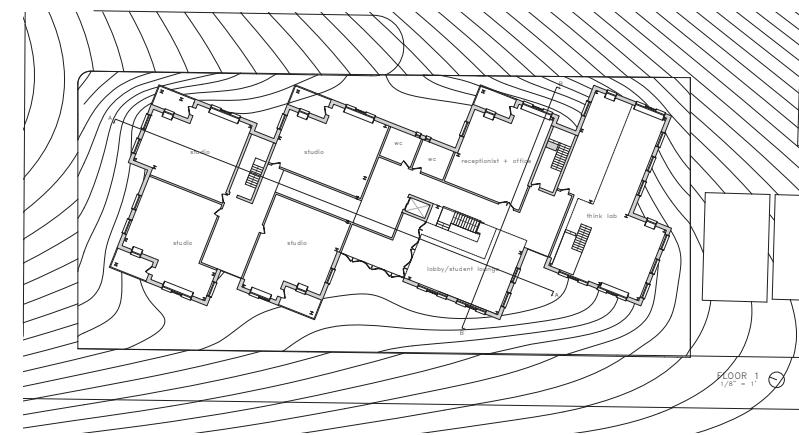
### 3. Program + Structure (Midreview)



### 4. Program Refinement



### 5. Pre-final Scheme



## PROGRAM

**Multipurpose Assembly/Cafeteria Room:**  
4,500 sf (minimum double height & maximum triple height space)

**Think Lab/Project Resource Center:**  
3,000 sf (minimum double height space).  
The Think Lab is a facility to support specialized science, math, art, design, and making activities, and is staffed by two faculty during school hours.

**Studios:** Twelve (12) @ 1,250 sf each.  
The studios must support multiple configurations to accommodate learning from lectures to small groups.

**Lobby/Reception/Medical/Principal/Conference Suite:** 1,000 sf

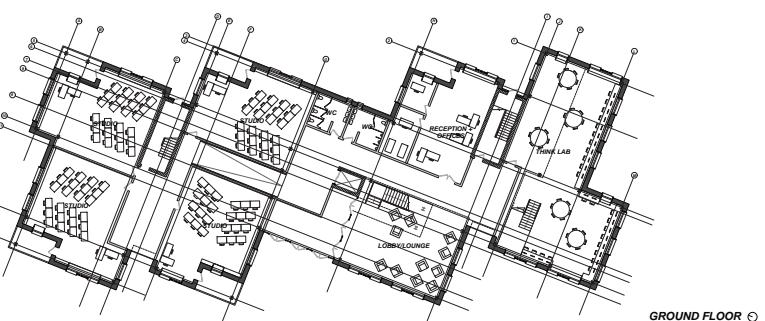
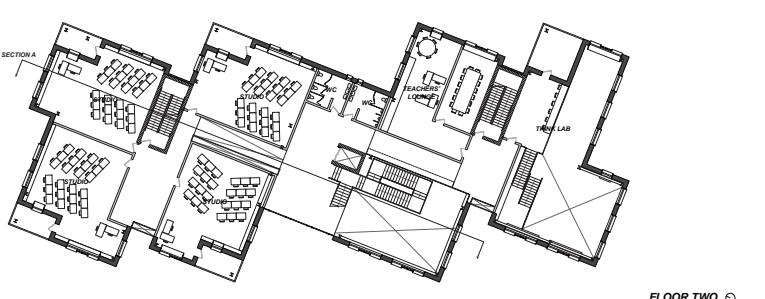
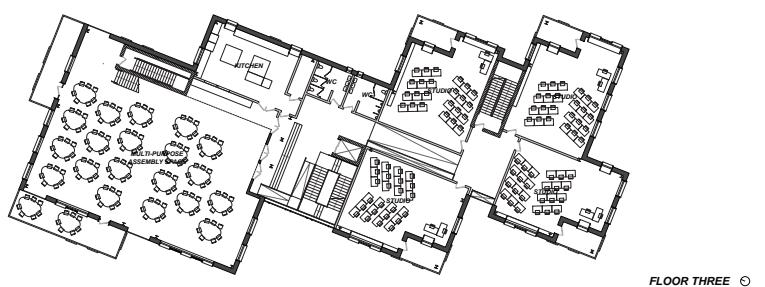
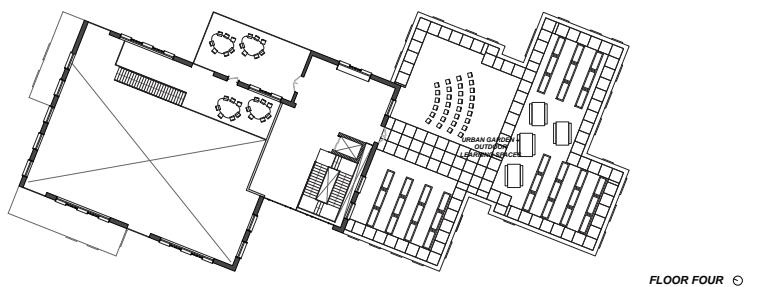
**Shared Teacher Office:** 1,000sf

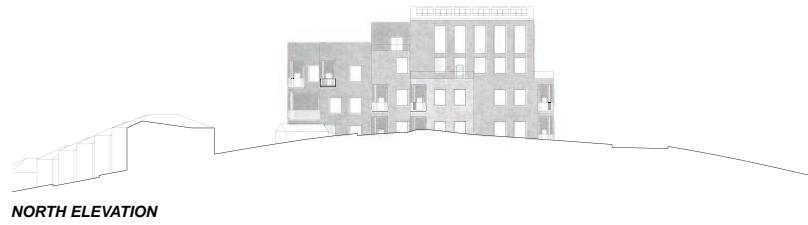
**Kitchen:** 1,000sf

**Support Spaces:** 2,750 sf (custodial, storage, MEP, toilets)

**Outdoor Learning Spaces:** 4,000 sf (can be located on the ground or on the roof(s))

**Outdoor Service Area:** 500 sf





NORTH ELEVATION



EAST ELEVATION

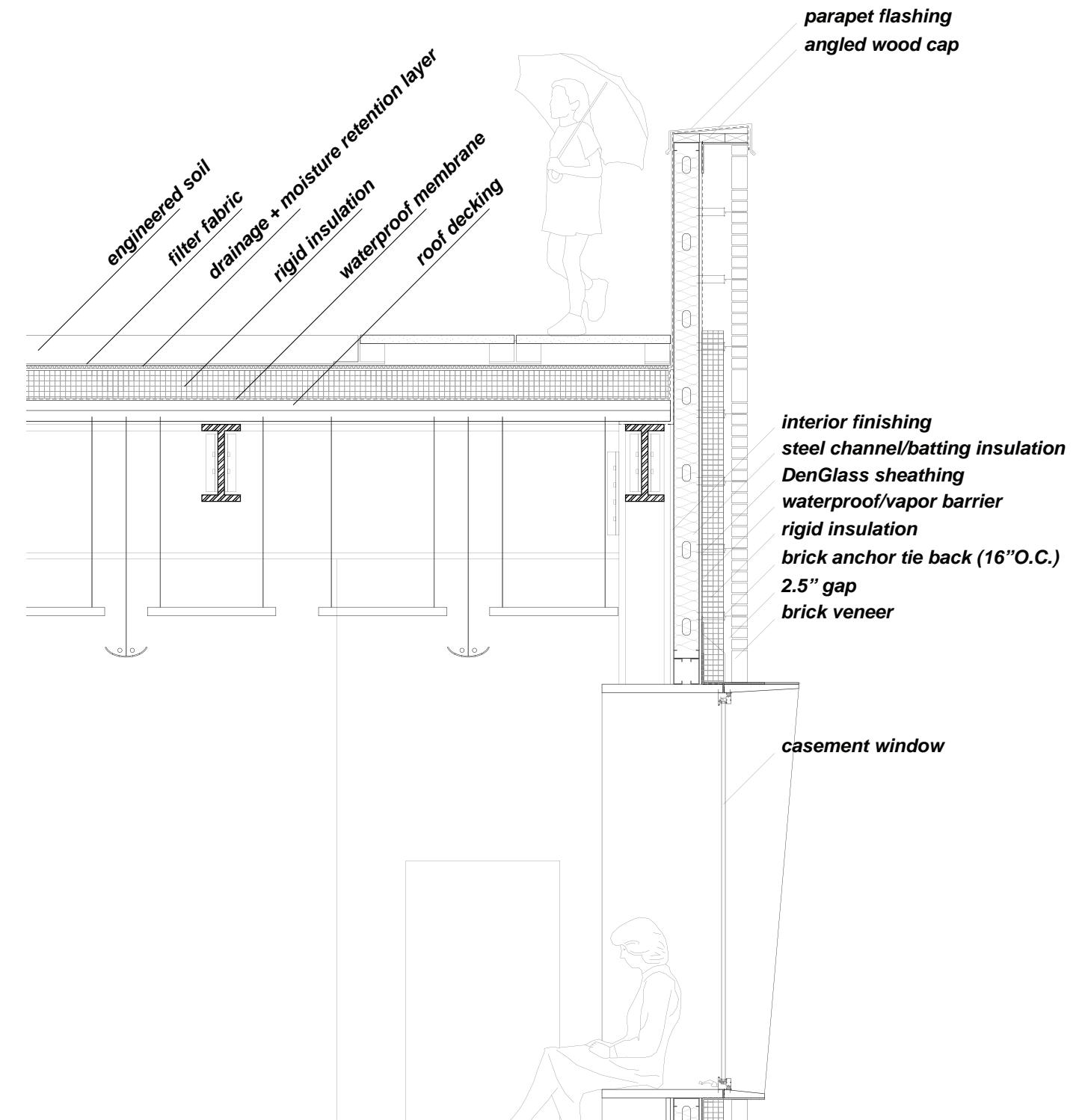


WEST ELEVATION



SOUTH ELEVATION





# ENVIRONMENT, FORM, + FEEDBACK

Third Year | Fall 2017

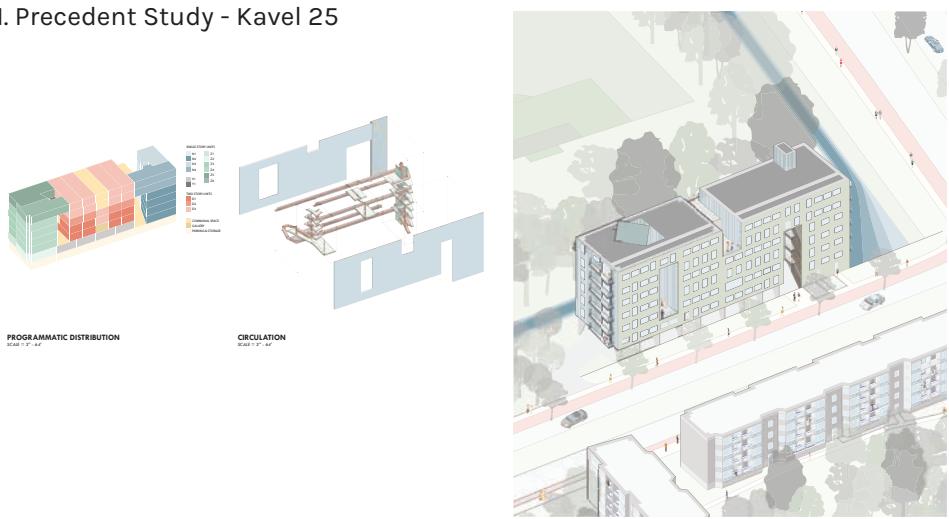
**GOAL:** An environmentally conscious design process that dares to engage the occupant in a sensorial way. Utilizing the power of wind not only as a tool to harvest energy and passively cool the housing complexes, but also as a means to alter the occupier's perspective of wind through the sculpting of the site along a series of wrapping pathways.

In collaboration with Michael Powell.

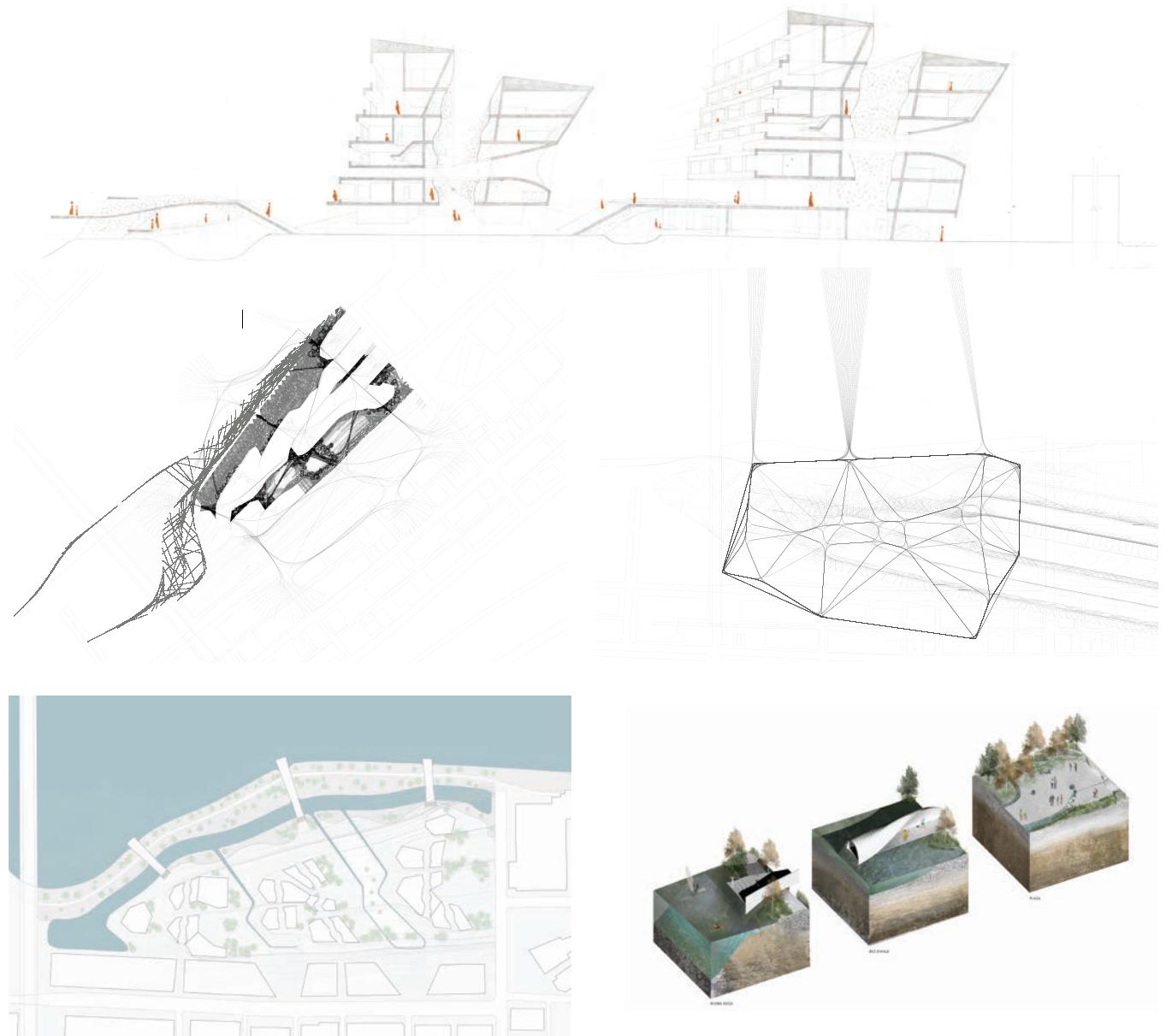


## PROCESS

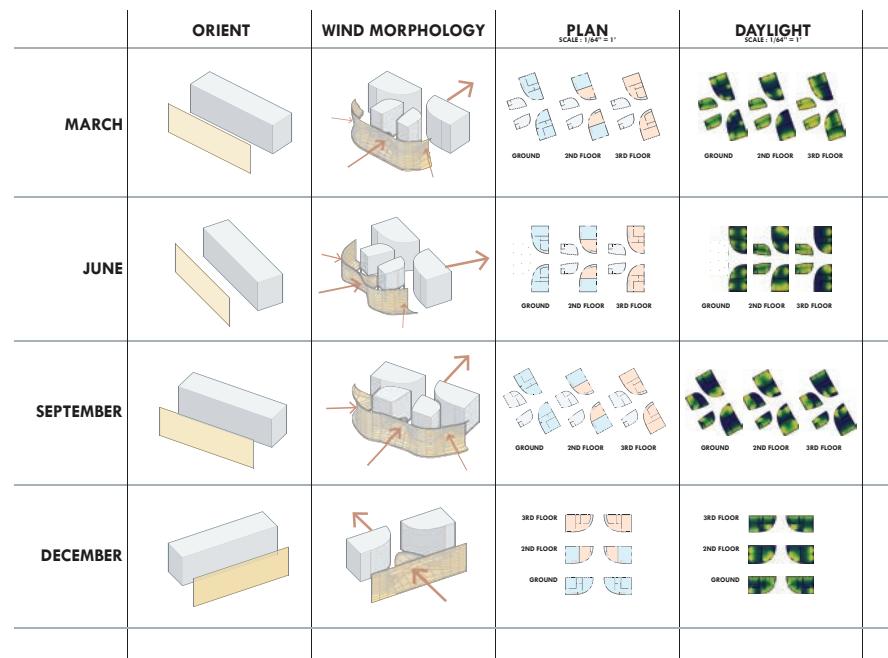
### 1. Precedent Study - Kavel 25

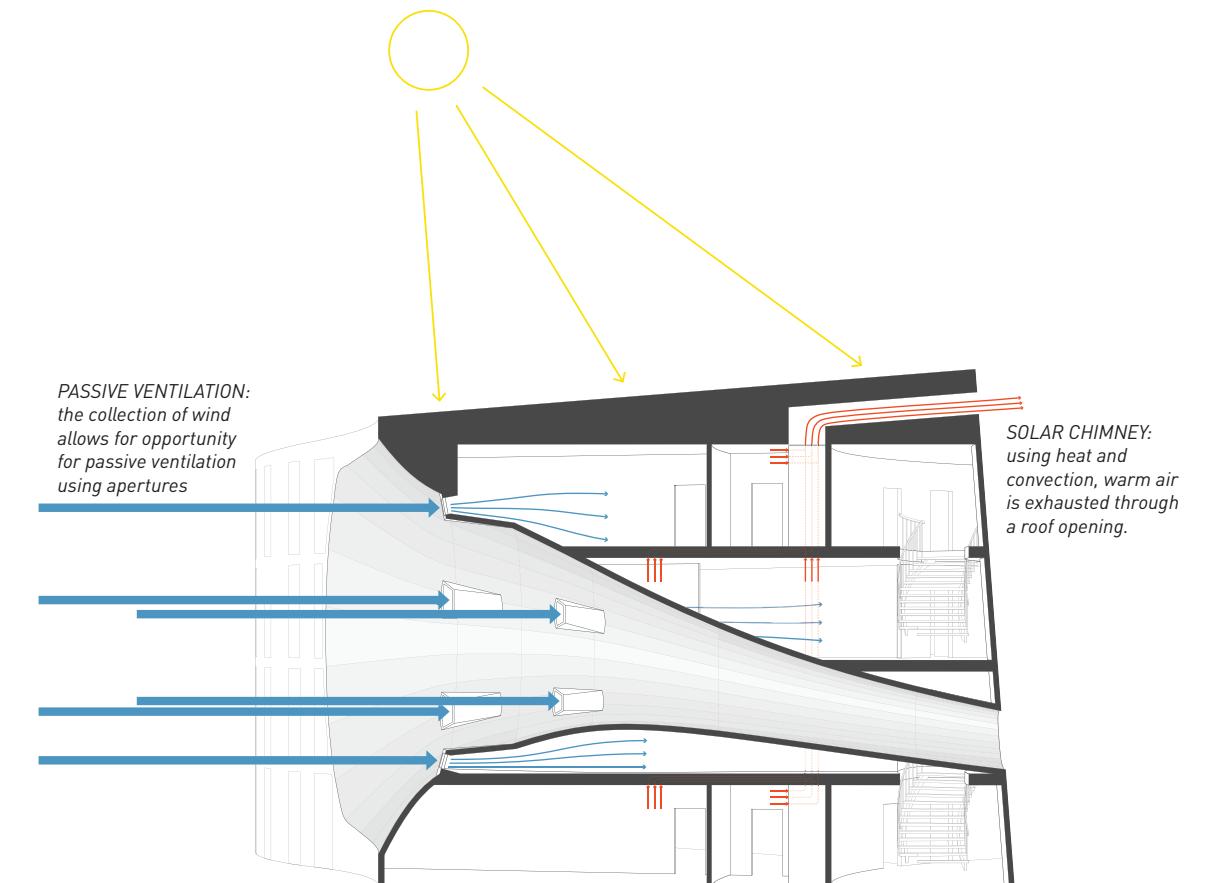
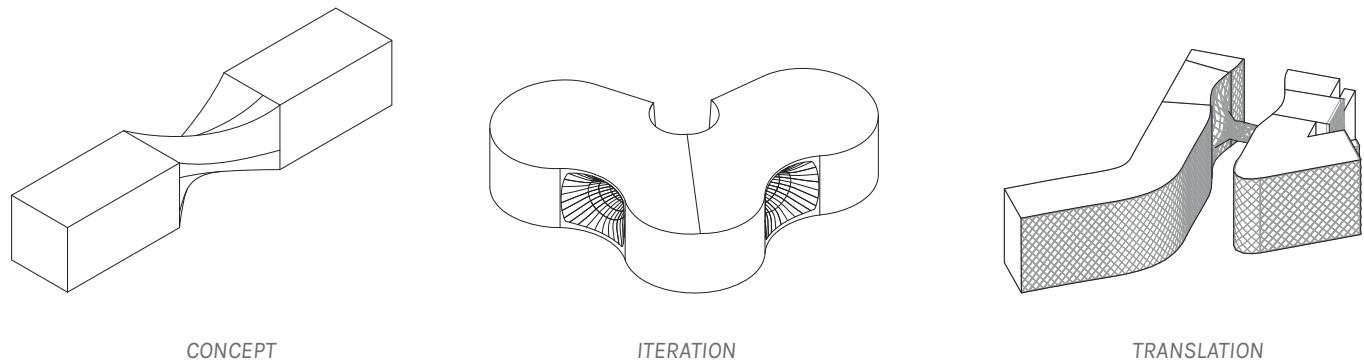
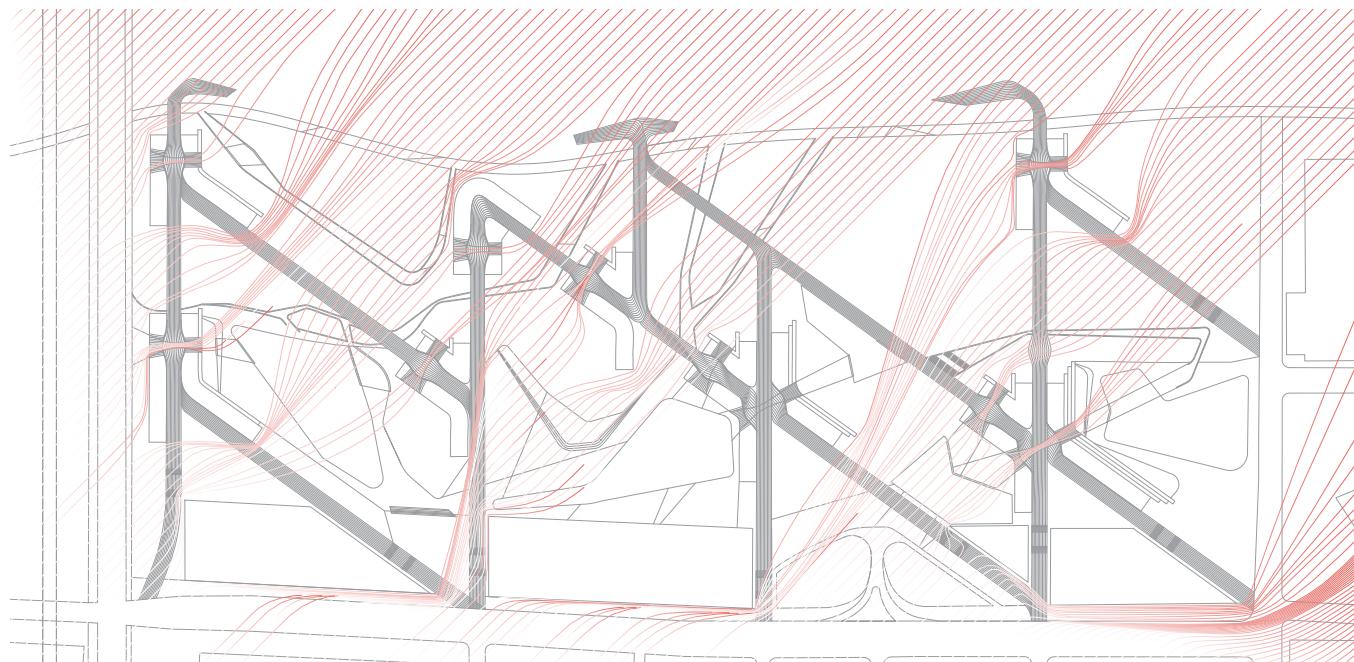
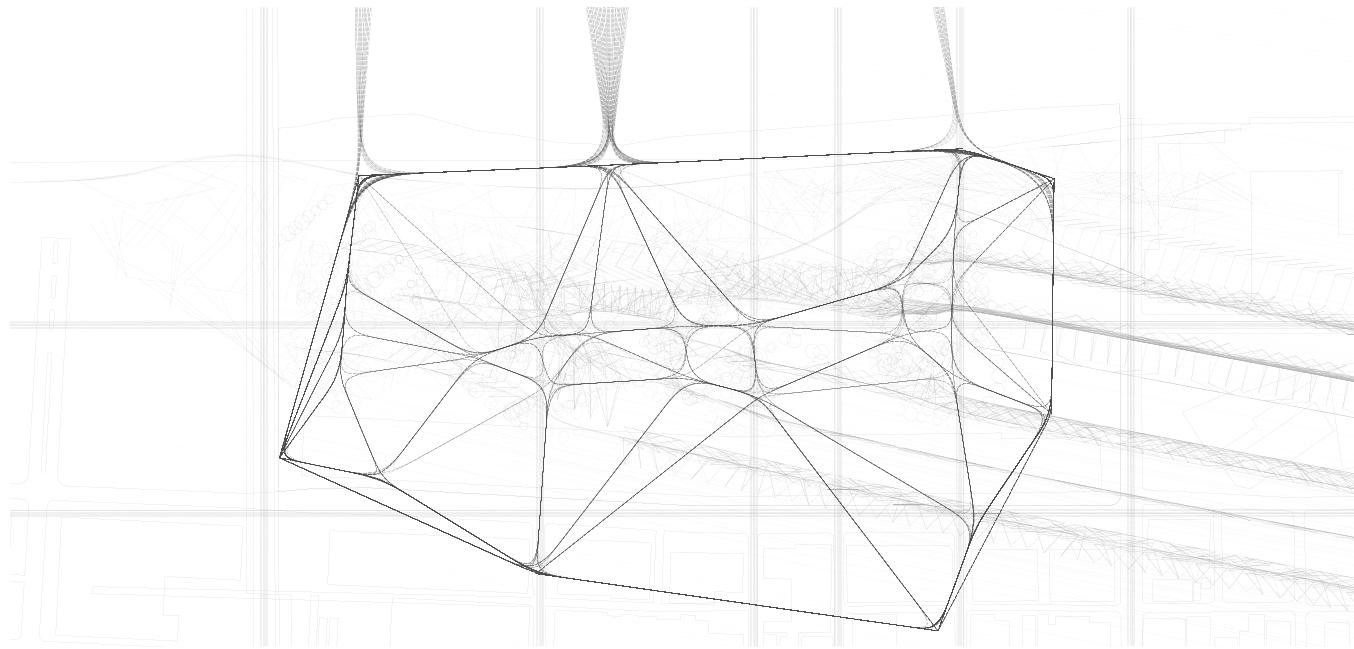


### 3. Site Planning + Iterating



### 2. Morphology





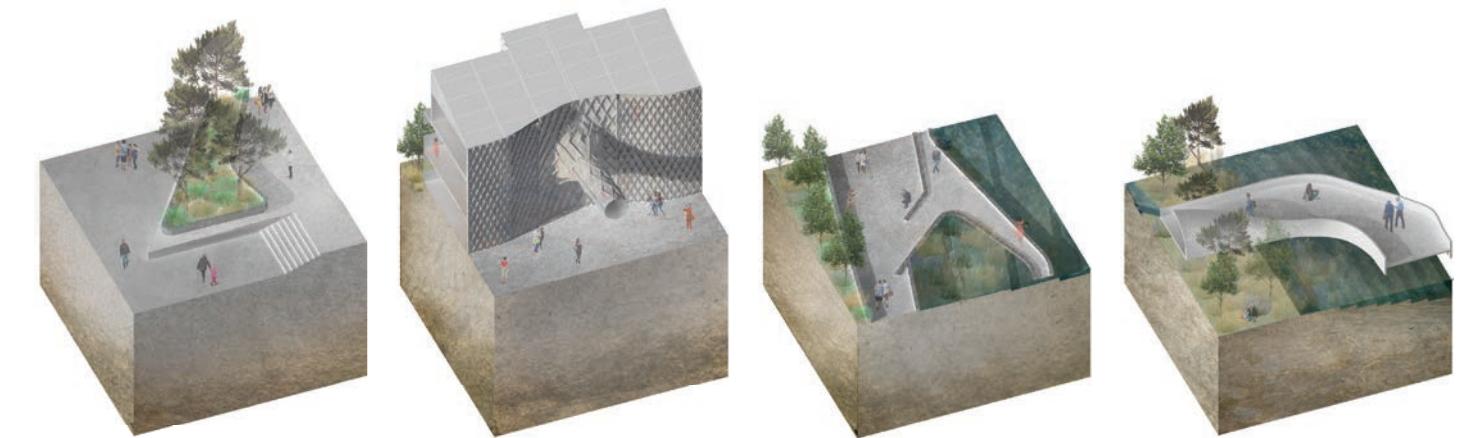
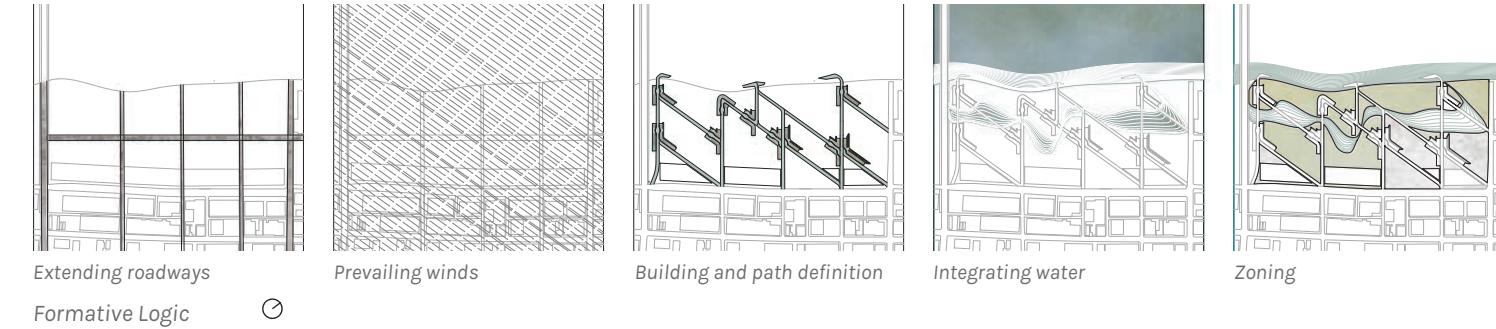
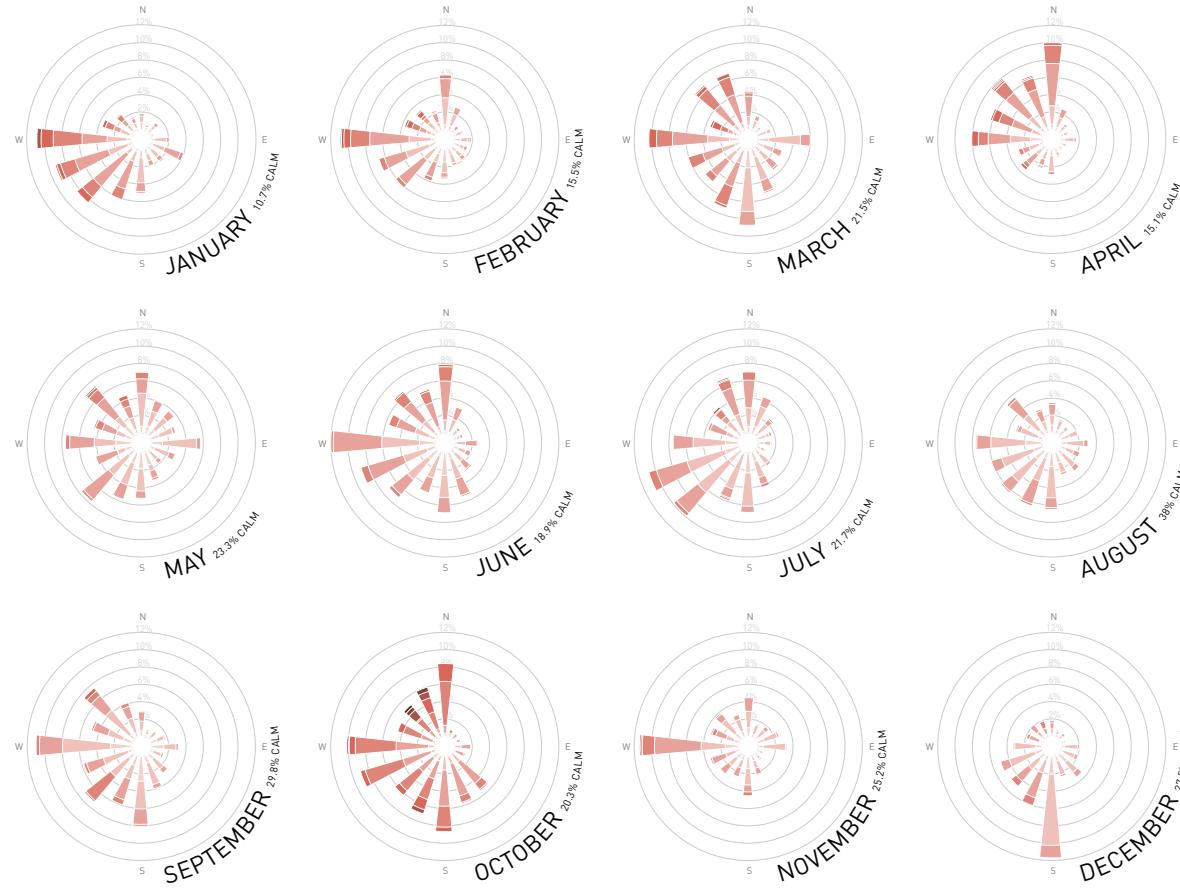
Passive Ventilation & Solar Chimney

## Pittsburgh Wind Roses

LATITUDE - 40° 30' 05" N  
LONGITUDE - 80° 13' 52" W  
ELEMENT - MEAN WIND SPEED  
DATA COLLECTED FROM 2012  
SOURCE - WESTERN REGIONAL CLIMATE CENTER  
[https://wrcc.dri.edu/cgi-bin/wea\\_windrose.pl?latKPT](https://wrcc.dri.edu/cgi-bin/wea_windrose.pl?latKPT)

MPH

1.3 - 4
4 - 8
8 - 13
13 - 19
19 - 25
25 - 32
32 - 39
39 - 47
47+



### 1. Site Entry

Moderate wind; low moisture; high solar exposure

Plant life:  
Meadow favorite  
Mugwort  
Elephant's ear  
Feathery fountain grass  
Bailey's acacia

### 2. Atrium

High wind; moderate moisture; low solar exposure

Plant life:  
Quaking aspen  
Eupatorium  
Miscanthus  
Vernonia

### 3. Swale

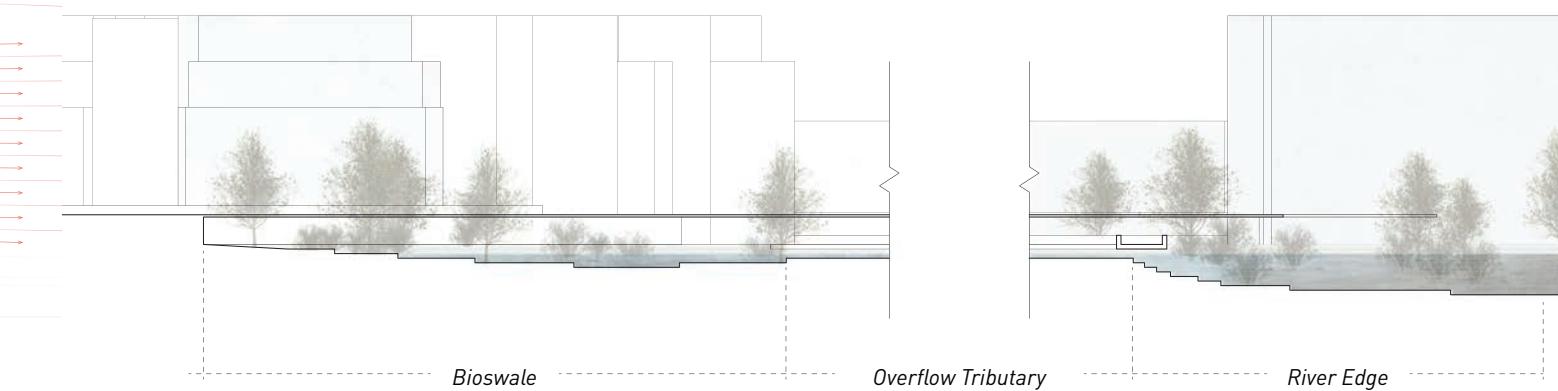
Moderate wind; high moisture; moderate solar exposure

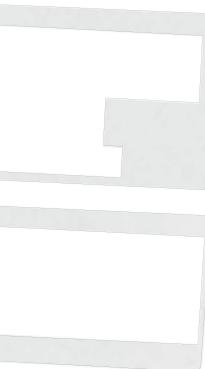
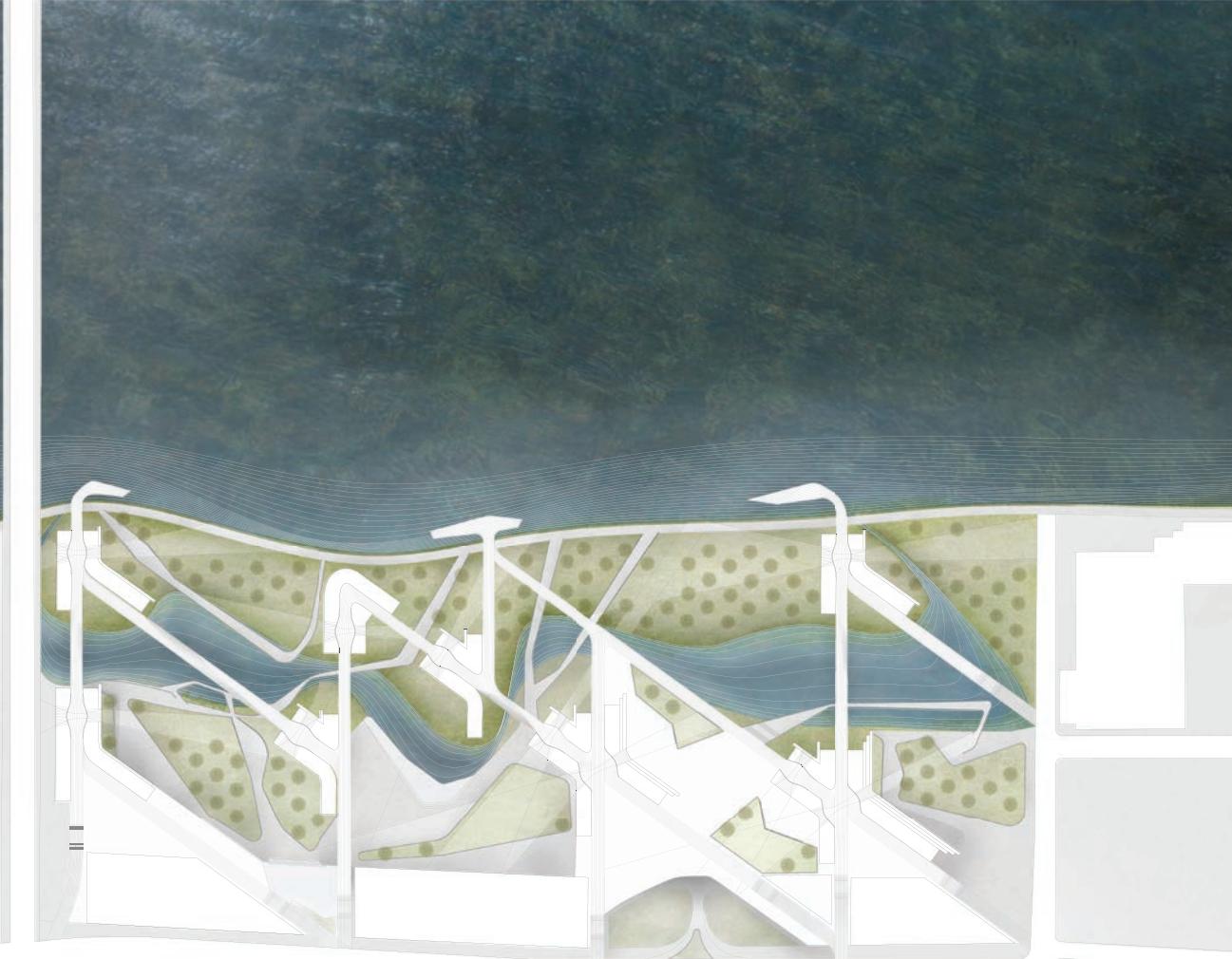
Plant life:  
Water birch  
Sea holly  
Horsetail  
Iris versicolor  
Button bush

### 4. River's Edge

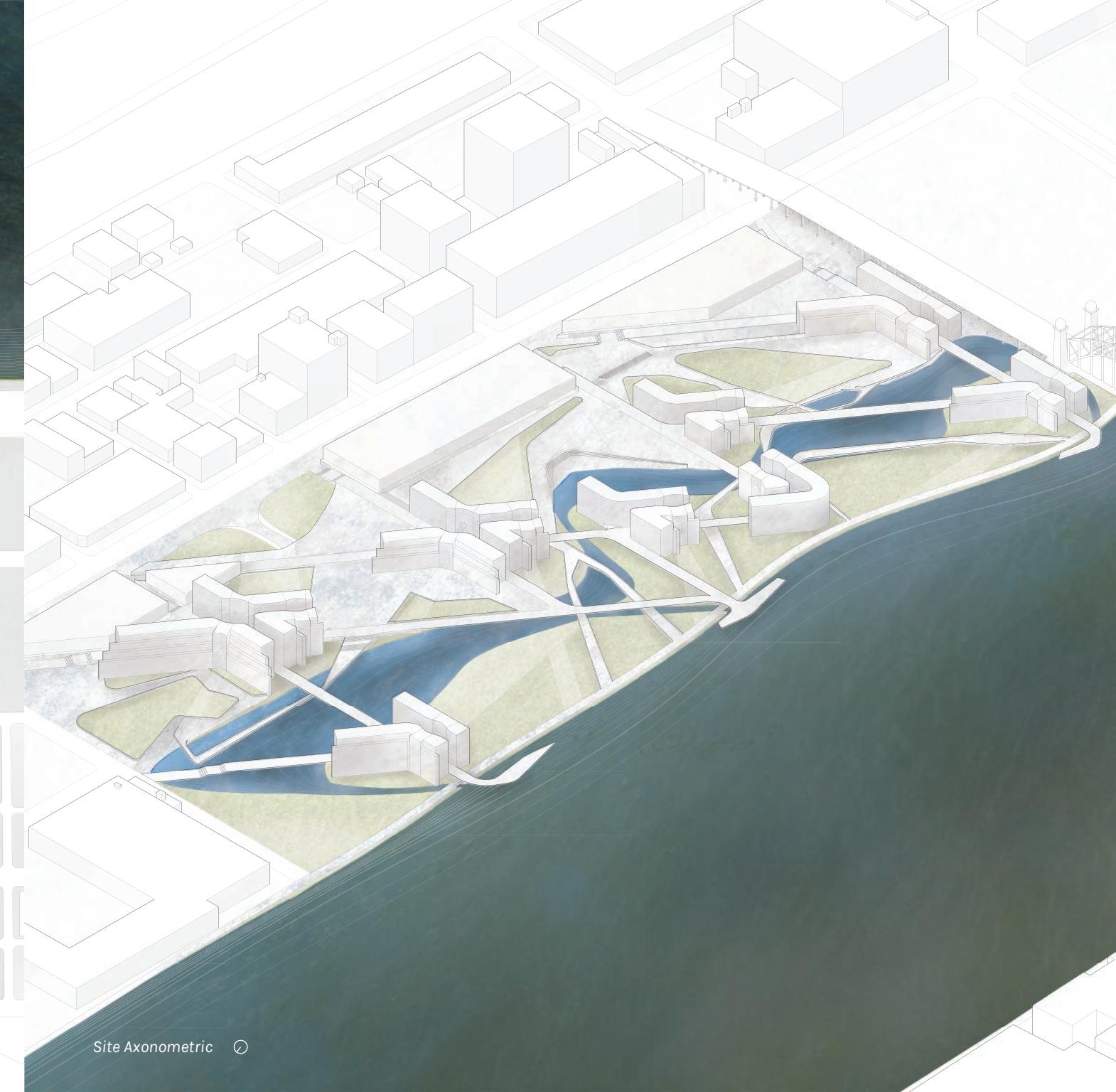
High wind; high moisture; moderate solar exposure

Plant life:  
Bald cypress  
Water birch  
Iris versicolor  
Button bush  
Water iris





Site Plan



Site Axonometric



# CITRA - HOOP HOUSE

Second Year | Fall 2016

## GOAL

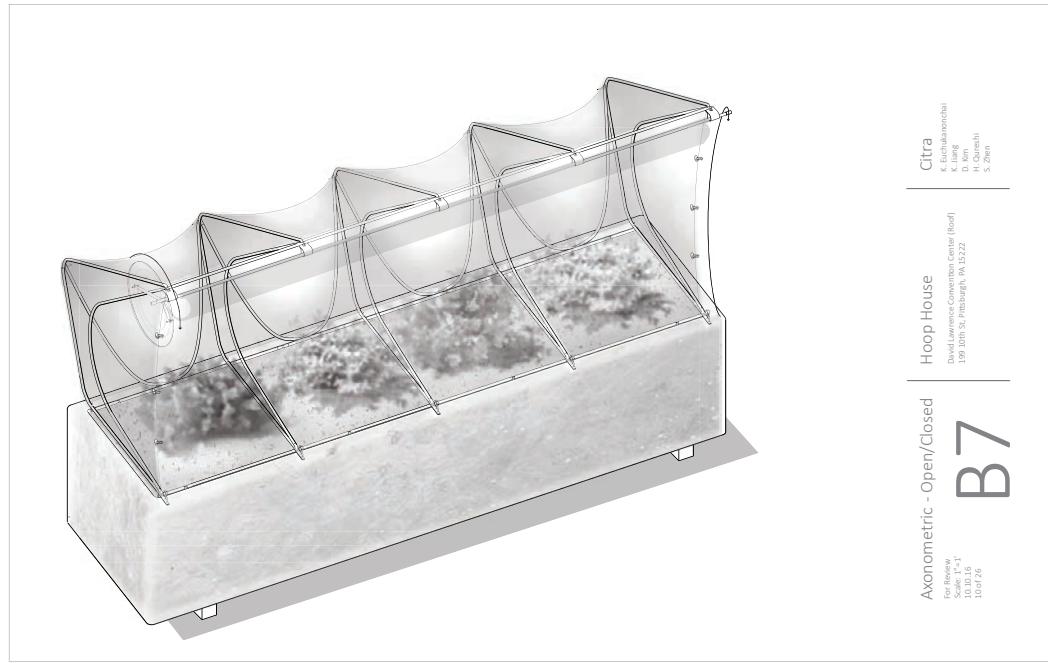
To design and build a portable greenhouse to extend the growing season of a raised planting bed in an urban garden.

## DESCRIPTION

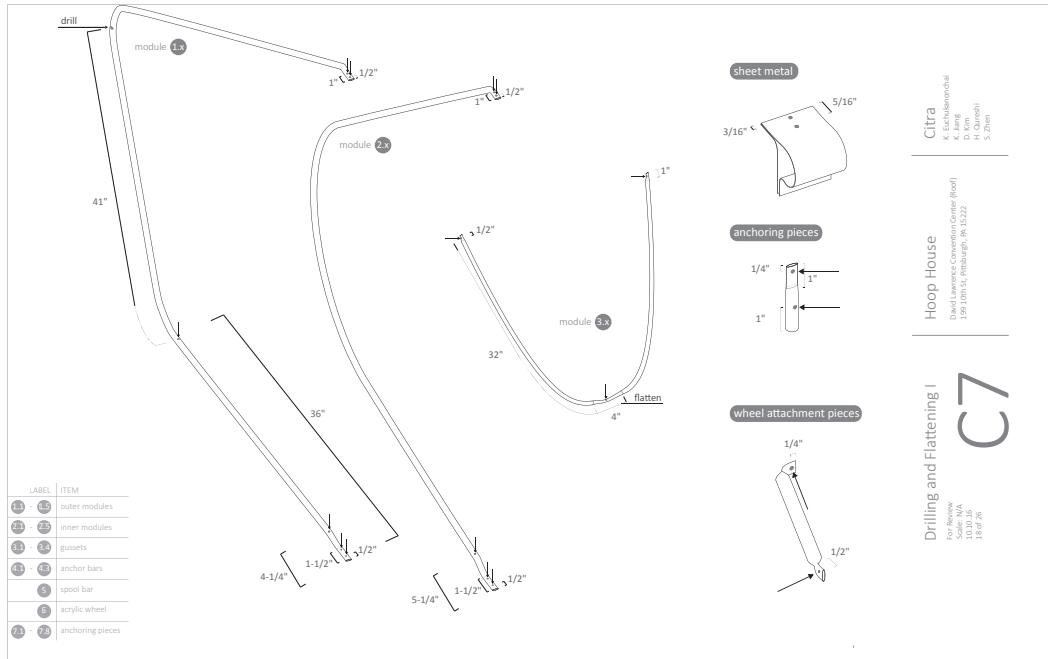
The word "CITRA", of Latin origin, translates to "without," which drove the creation of a collaborative hoop house project that emphasizes the importance of accessibility, removing unnecessary structure that could obstruct a user's reach. CITRA uses a unique cantilever system to leave an entire side completely open at the user's discretion. This design choice is complemented by a spooled system, which can unroll and clip together per the user's purposes. The form mimics its contextual situation on the roof of the David L. Lawrence Convention Center in the Cultural District of Pittsburgh, PA, meeting the lower slope of the roof line and drawing forth the steep angle of the building. These systems work in tandem to create a hoop house that achieves ideal ventilation and enclosure, provides the most accessibility possible, and interacts positively with the geometric patterns found in its context.

In collaboration with Kornrat  
Euchukanonchai, Kevin Jiang, David  
Kim, and Hamza Qureshi.

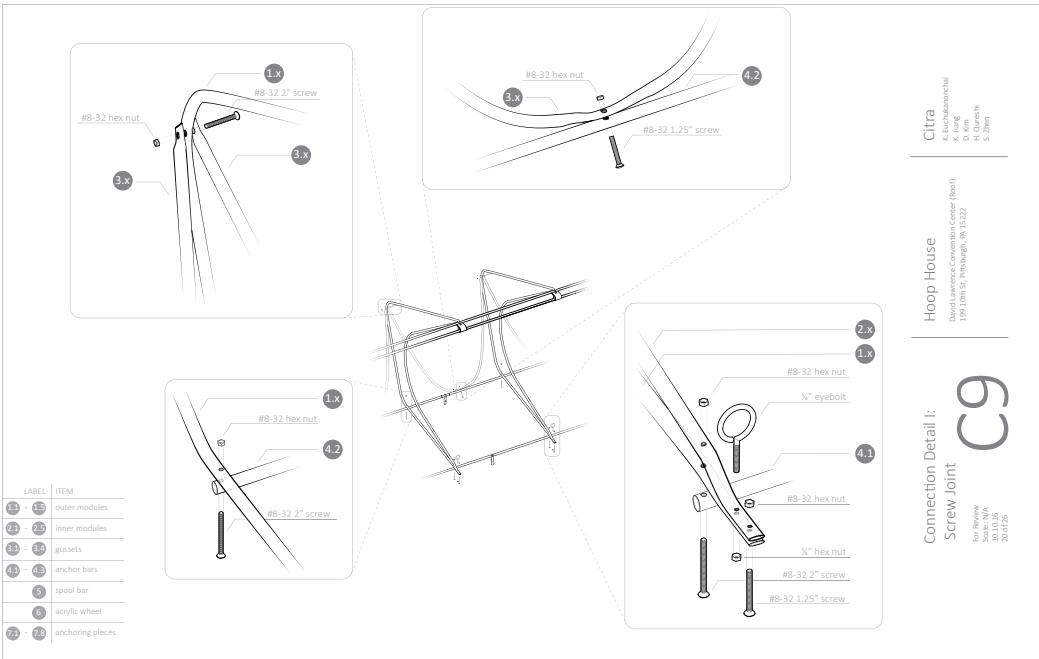
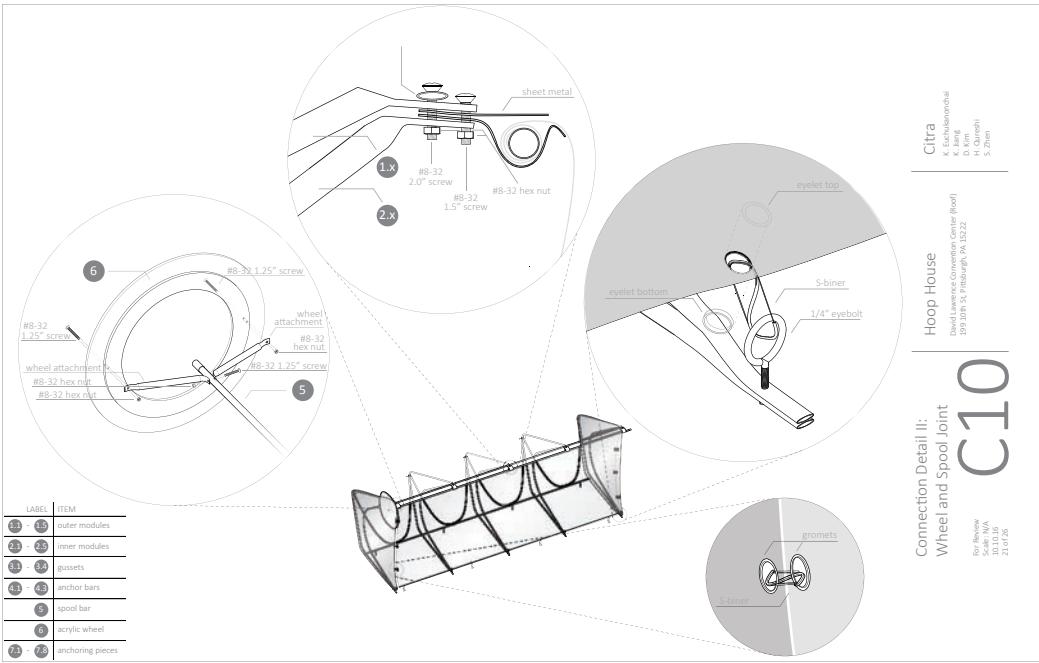




**Construction Drawing:**  
**Connection Detail II: Wheel and Spool Joint Axonometric**

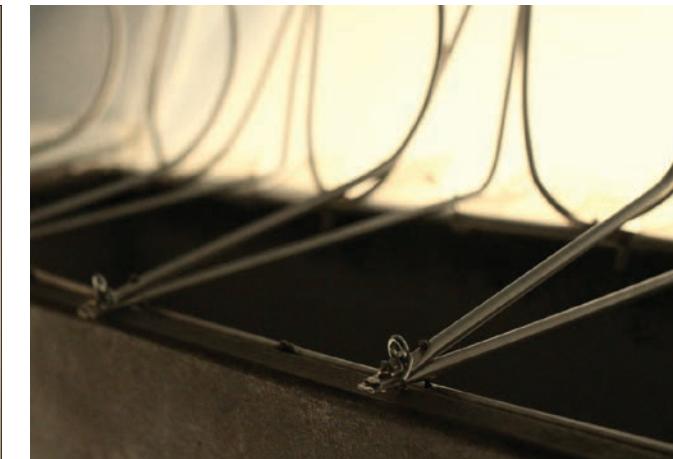
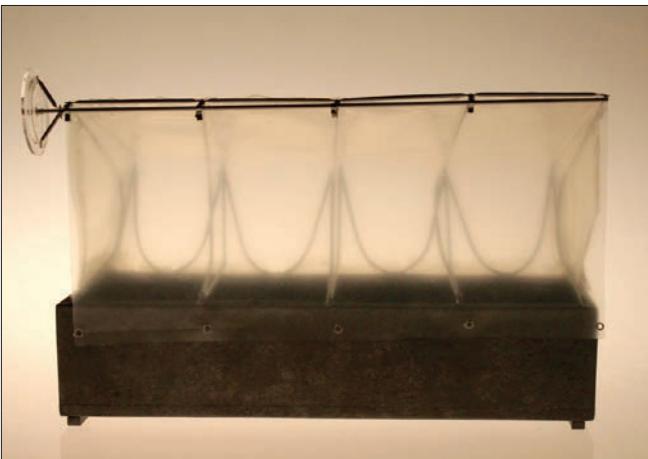


**Construction Drawing:**  
**Connection Detail I: Screw Joint**



## SCALE MODEL (2"=1')

Aluminum Tubing, Greenhouse Plastic, Galvanized Wire, Basswood



## FINAL CONSTRUCTION AND INSTALLATION

Greenhouse Plastic, 1/2" Conduit

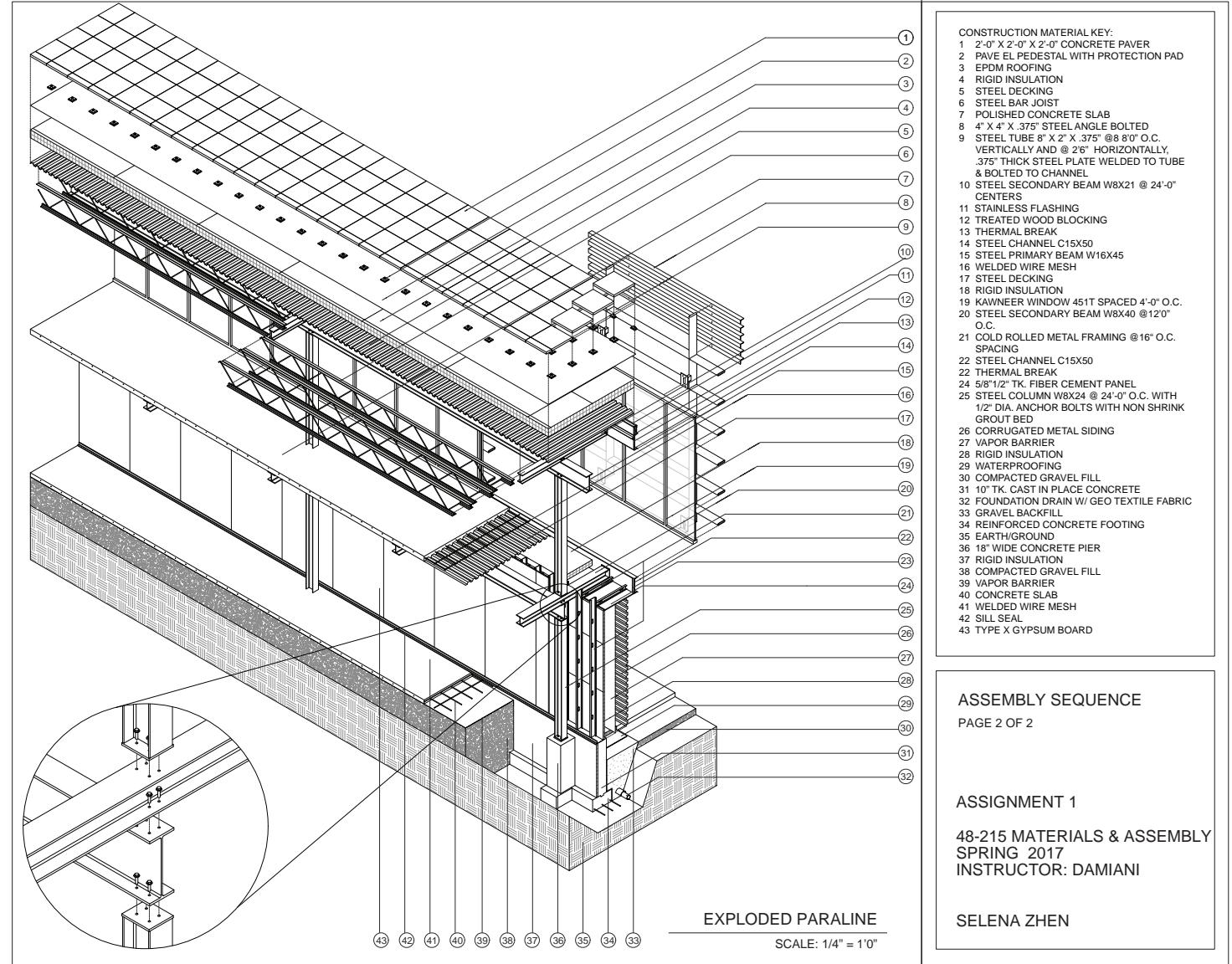
Final Construction Video  
[https://youtu.be/mjdTv\\_zwFyA](https://youtu.be/mjdTv_zwFyA)

- (A) Construction of Frame
- (B) Heat Shrinking Greenhouse Plastic
- (C) Loading
- (D) On-Site Installation
- (E) Connection Detail

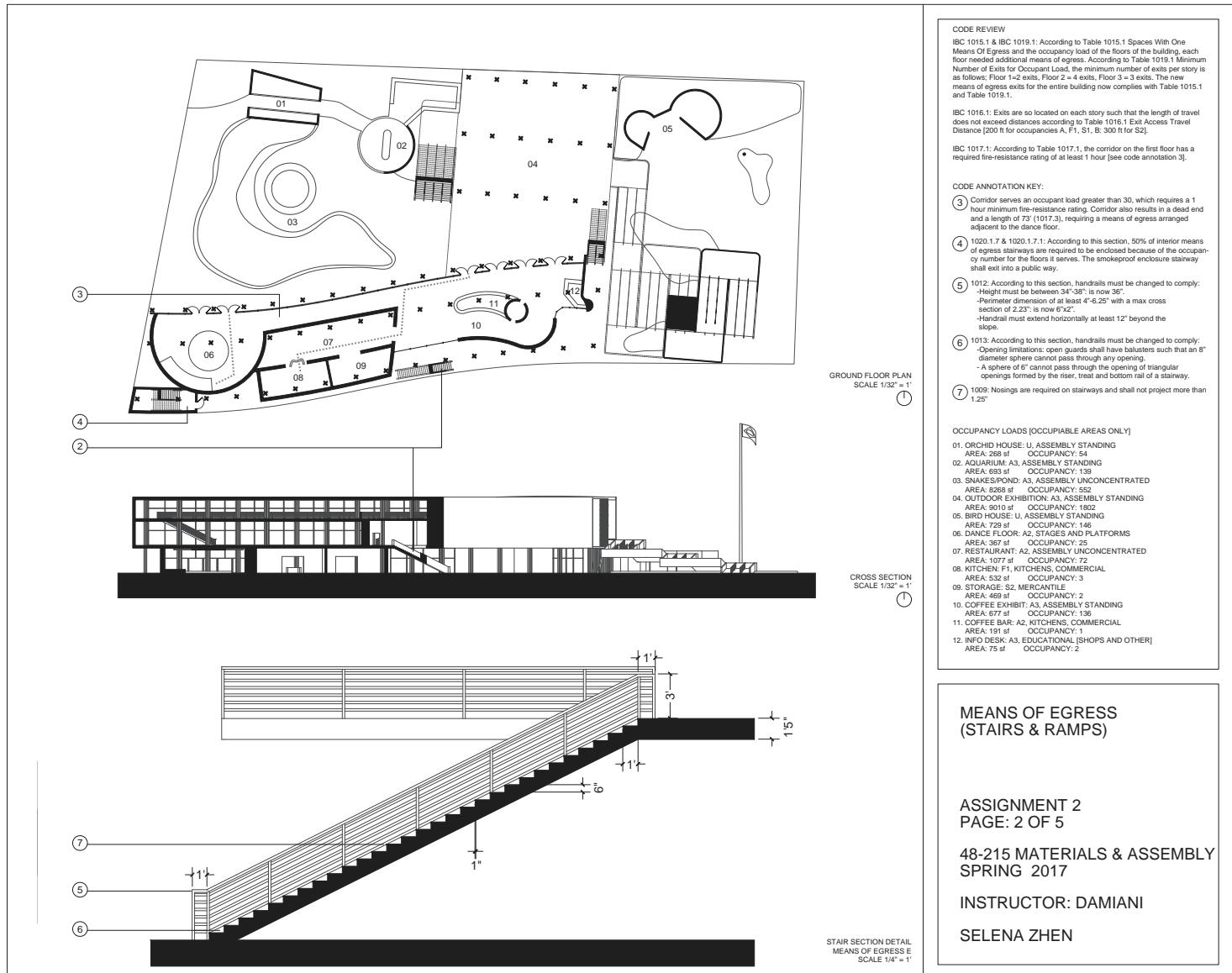
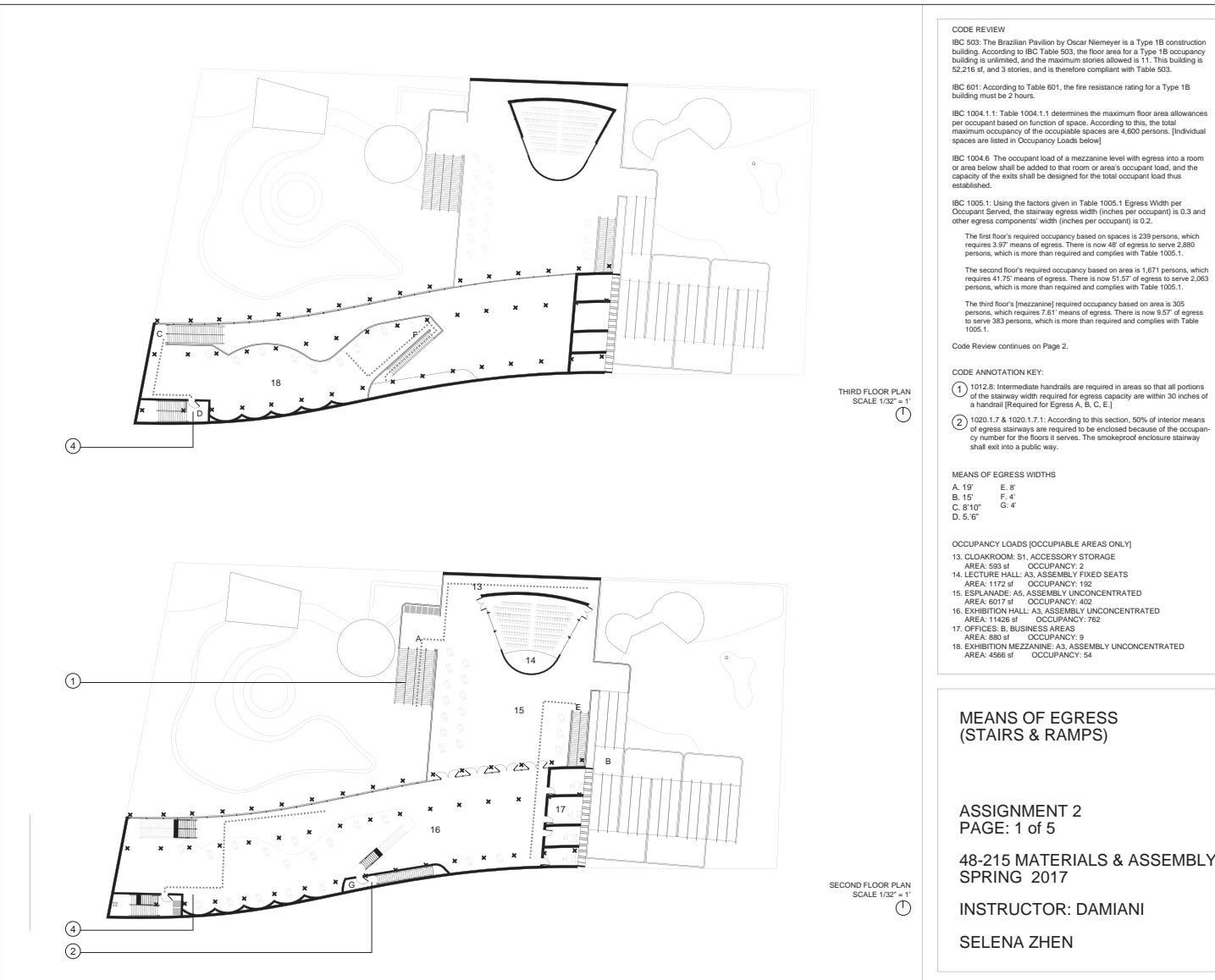


# MATERIALS + ASSEMBLY

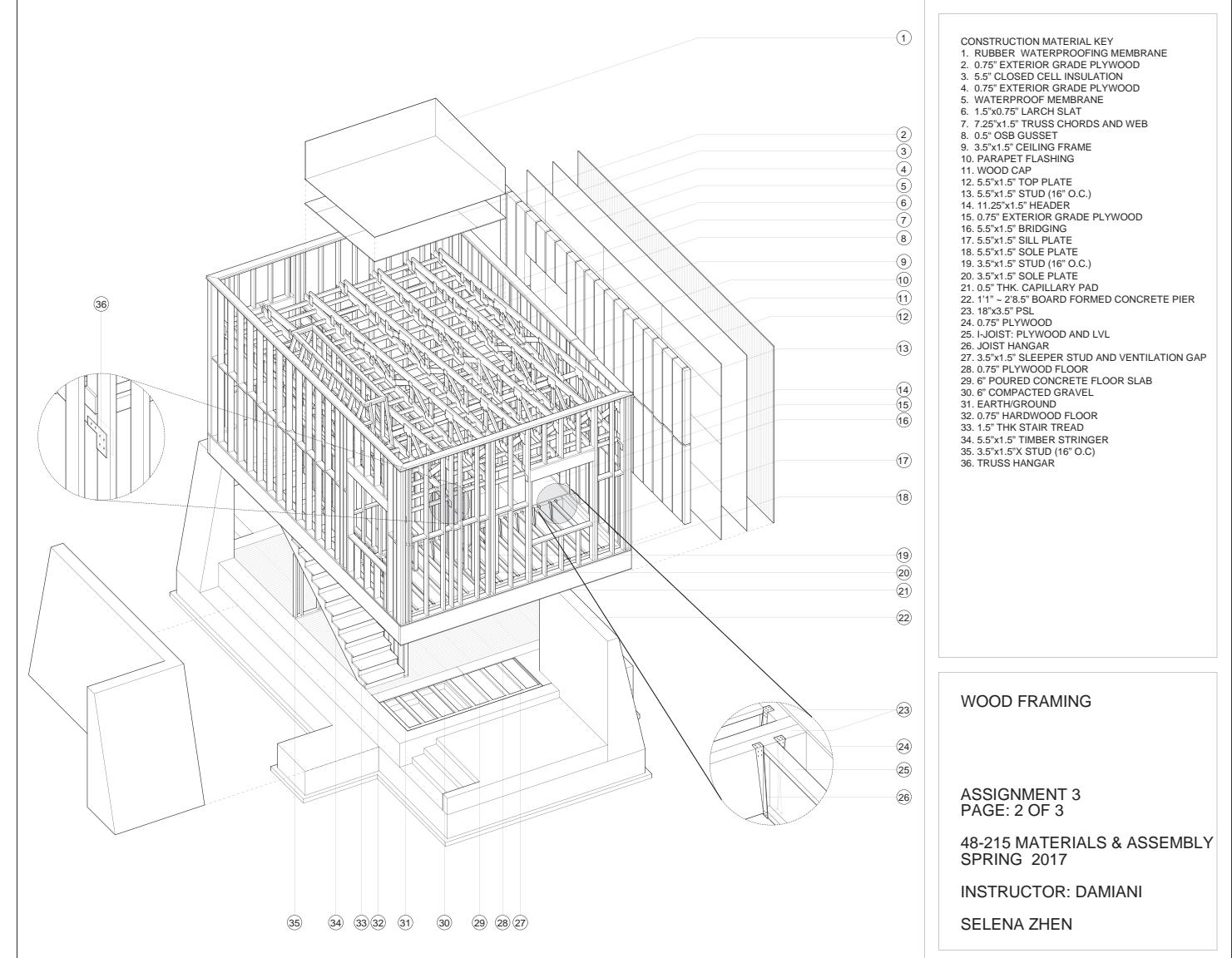
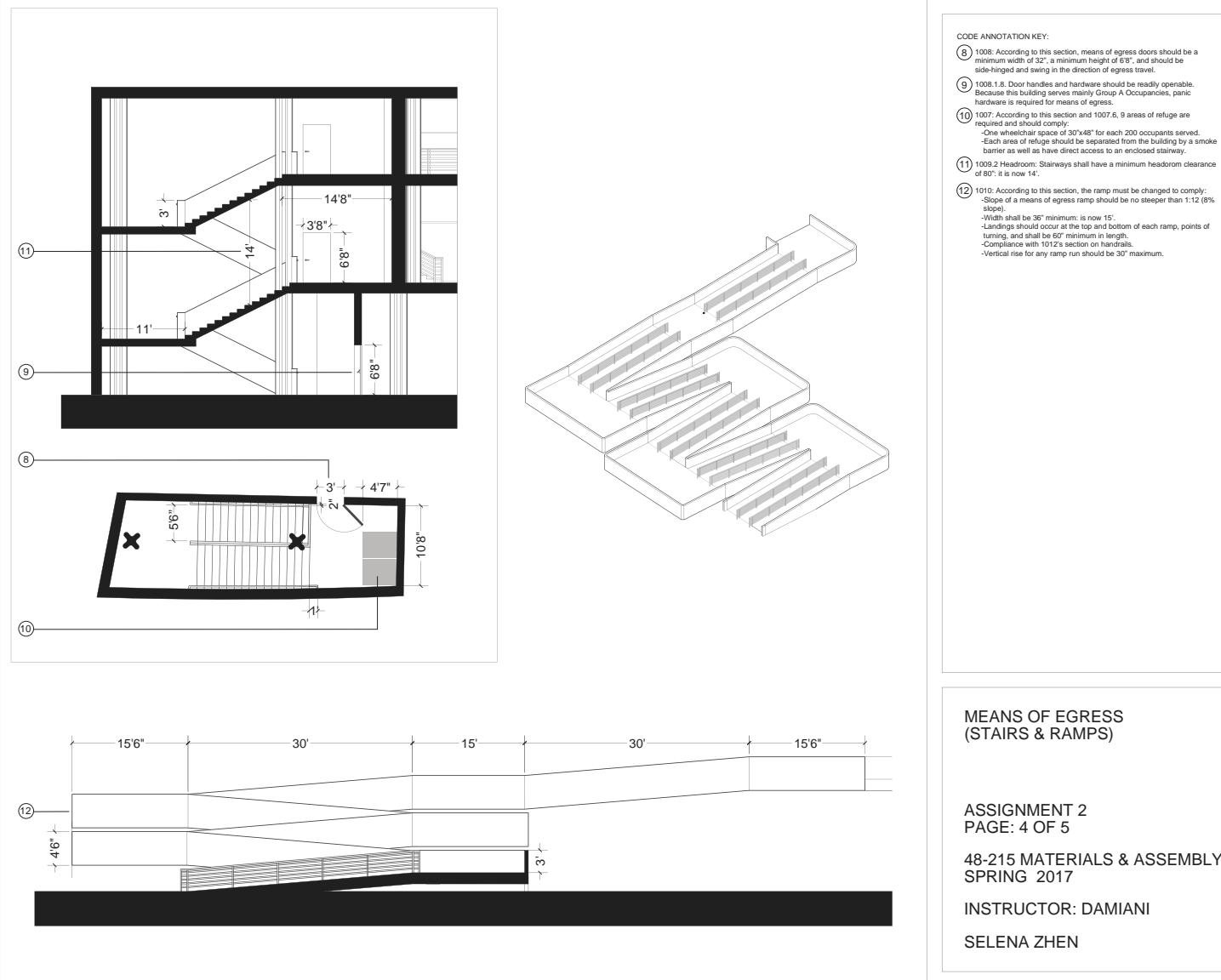
## PROJECT 1: ASSEMBLY SEQUENCE AND MATERIAL STUDY

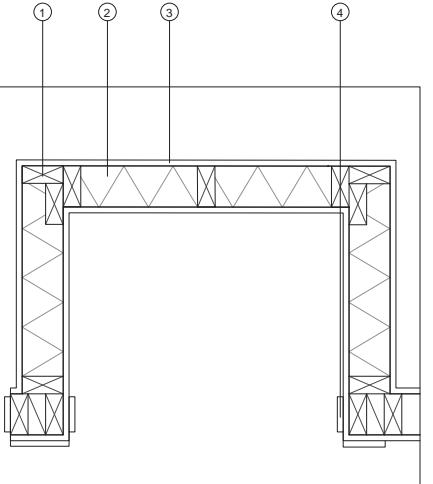


## PROJECT 2: MEANS OF EGRESS AND CODE REVIEW (THE BRAZILIAN PAVILION)

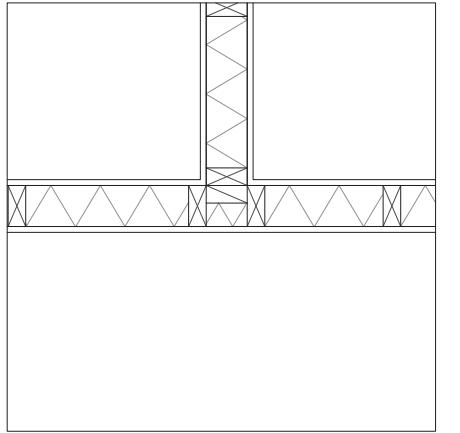


## PROJECT 3: WOOD FRAMING (CASA EL VIGILANTE)





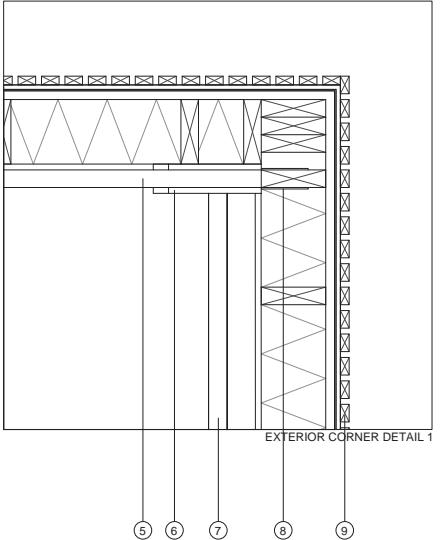
INTERIOR CORNER DETAIL 1



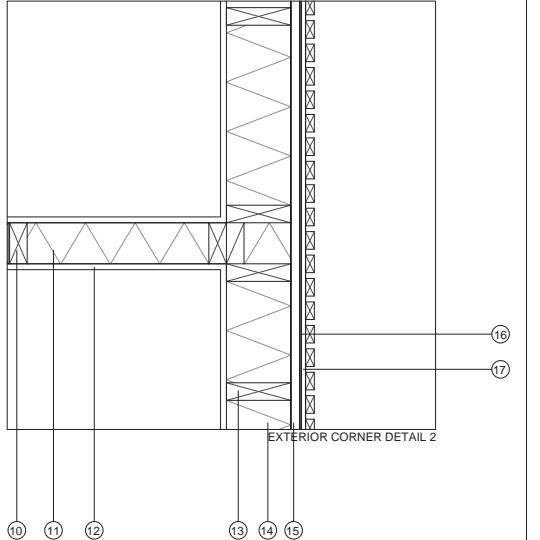
INTERIOR CORNER DETAIL 2

**CONSTRUCTION MATERIAL KEY**

- 1. 3.5"x1.5" STUD (16" O.C.)
- 2. 3.5" CLOSED CELL INSULATION
- 3. 0.5" DRYWALL
- 4. DOOR FRAME
- 5. 7.25"x1.5" TRUSS CHORDS AND WEB
- 6. 0.5" OSB GUSSET
- 7. 3.5"x1.5" CEILING FRAME
- 8. TRUSS HANGER
- 9. 1.5"x0.75" LARCH SLAT
- 10. 3.5"x1.5" STUD (16" O.C.)
- 11. 3.5" CLOSED CELL INSULATION
- 12. 0.5" DRYWALL
- 13. 5.5"x1.5" STUD (16" O.C.)
- 14. 5.5" CLOSED CELL INSULATION
- 15. 0.75" EXTERIOR GRADE PLYWOOD
- 16. WATERPROOF MEMBRANE
- 17. LARCH SLAT RAIN SCREEN CLIP



EXTERIOR CORNER DETAIL 1



EXTERIOR CORNER DETAIL 2

### WOOD FRAMING

ASSIGNMENT 3  
PAGE: 3 OF 3

48-215 MATERIALS & ASSEMBLY  
SPRING 2017

INSTRUCTOR: DAMIANI  
SELENA ZHEN



# HIGH RISE 'UNTITLED'

4th Year | Fall 2019  
Advanced Synthesis Option Studio 48-500  
High\_Rise 'Untitled' 2018, New York, NY

## PROJECT INTRODUCTION

The introduction to the studio was initially written by Professor Gerard Damiani, and is paraphrased here.

"This studio will look at the role of the architectural promenade and how it can be adapted to the typology of the high-rise. The promenade architecturale first described by Le Corbusier as a sequence of spaces and direction of movement in the Acropolis in Athens is a way of constructing views, vistas and experiences. The high-rise, an American typology, acknowledges maximizing building area but does not address the role of the architectural sequence. This studio will investigate the high-rise typology through the hybridization of the typology with the architectural promenade.

This studio will focus on the writings and artistic output of Donald Judd as the intellectual underpinning of the studio, which will inform the spatial and detailing agenda of the studio project. Often considered an artist of obdurate space, Judd's works are highly refined being conscious of their context (what he called fundamental realities), space, material, color and detail. An inspiration to architects such as Steven Holl and Herzog & de Meuron, the works of minimalist artist Donald Judd (1928-1994) spanned both art and architecture through a search for autonomy and clarity for the objects and the spaces they occupy."



## PROGRAM

The program will focus on a urban high-rise structure located in SoHo in New York City directly across from the Judd Foundation. The building is to be a high-rise construction (75 feet or higher) consisting of vertical galleries, a museum store, studio workspaces for visiting artists, and apartments.

## MUSEUM ANNEX

This mixed-use tower is to provide additional exhibition space for artists curated by Flavin and Rainer Judd. The spatial container provided must allow for artwork to be presented in a number of formats.

1 Gallery: Interaction with daylight

1 Gallery: Integration within a neutral spatial container (white box)

1 Gallery: Integrated within the architectural context you provide  
Museum Store  
Ticketing Desk  
Public Restrooms

Staff Offices

Director & Assistant Office Suite

Special Programs Director Office

Docent Lounge

Administration Assistant Office

Conference Room & Research Library

Conservation Room

Staff Unisex Restroom

Public Entry for Museum

Building Service Entry

Central Mechanical Floor Servicing both Galleries and Residential Units

## RESIDENTIAL TOWER

The residential tower is to accomodate any number of residences while creating an understanding of Donald Judd's residential spaces.

Unit types must contain:

Entry & Entry Closet

Kitchen

Dining

Living

1/2 Bath

Full Bath (tub and shower)

Master Bedroom with Walk-In Closet

One to Two Bedrooms with Closets

Shared Bath

Or

Entry & Entry Closet

Kitchen

Dining

Living

Full Bath (tub and shower)

One Bedroom with Closet

## CONCEPT

*...These ideas were precedents for some small pieces and then for the 100 mill aluminum pieces in the Chinati Foundation. The renovation of the building and the permanent purpose of the building are precedents for the larger spaces in my place in Texas, La Mansana de Chinati, for the Chinati Foundation, and will be for Ayala de Chinati.*

- Donald Judd, "101 Spring Street, 1989"

This section from Judd's writings looks at his renovation of 101 Spring St. as inspiration and precedent for many of his later works and for the Chinati Foundation. I found this statement insightful on his ideas as an artist and an architectural designer, particularly when understanding how he drew from his previous ideas as precedent for all of his later work, and that all of his pieces are inherently precedents of each other.

In the same way that Donald Judd used 101 Spring St. as precedent for many of his later work in Marfa, TX, I wanted to use his projects in Marfa, TX as precedent for the new Museum Annex and Residential Tower adjacent to 101 Spring St. in New York City.



## MOMENTS

When visiting Marfa, I was struck by the incredible scale of each work in the 15 Untitled Works In Concrete. Each concrete piece that was cast and assembled on the site is of the same dimensions, making the layout of these pieces the varying factor in the designs. The potential habitable scale of these works left an impression on my experience at the Chinati Foundation, which I used as inspiration for creating habitable moments within my building.

For the residential tower, the 15 Untitled Works In Concrete served as inspiration for indoor/outdoor flexible living spaces, and for the museum annex, the pieces served as inspiration for key gallery moments.



15 Untitled Works In Concrete - The Chinati Foundation

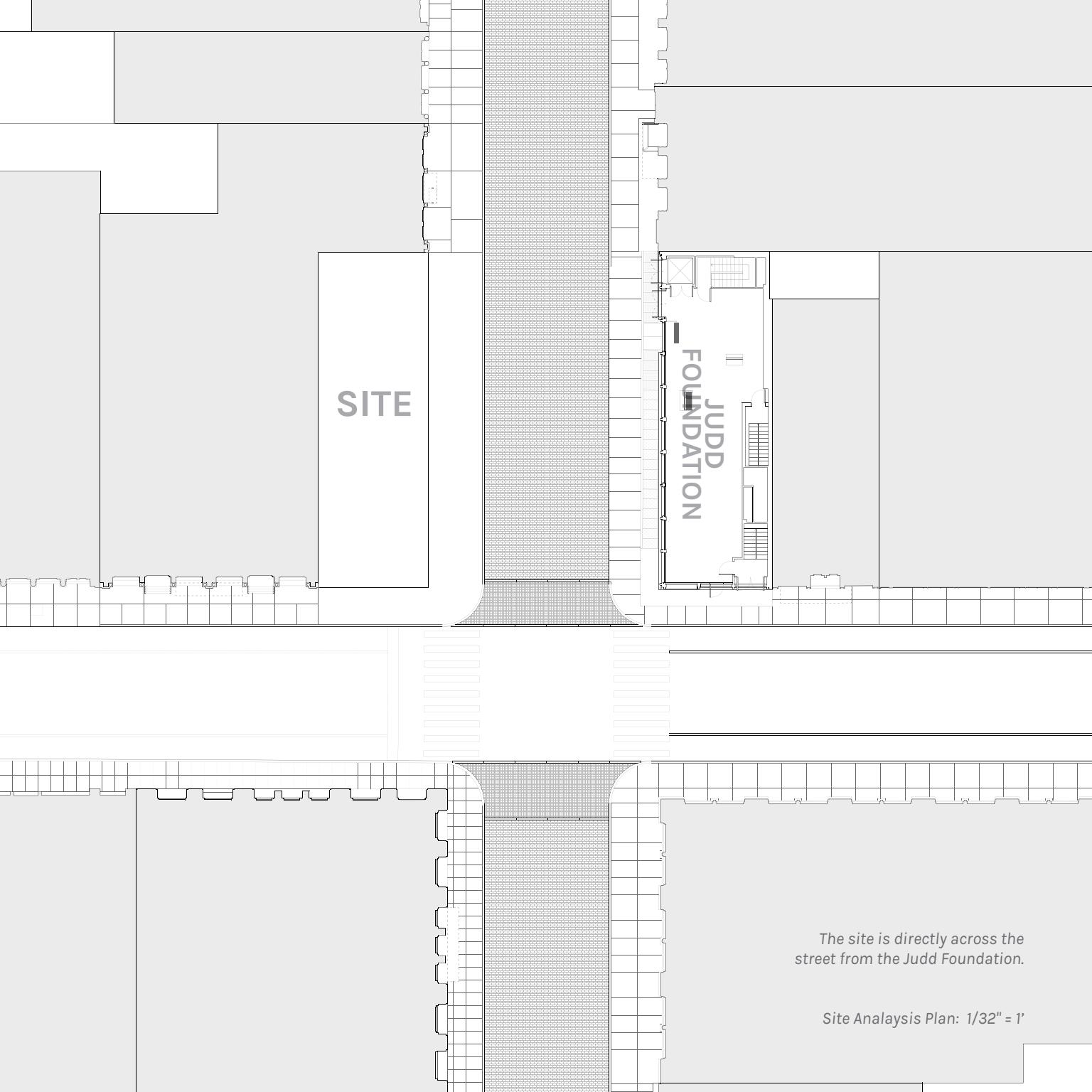
## FACADE

For the exterior facade of the building, I chose to use a 10 x 3 bay system, as a reference to the same bay system as the adjacent 101 Spring St. This allowed the building to fit in with the rest of the Soho context, as well as draw a visual connection to the neighboring Judd Foundation. When considering the more detailed aspect of the exterior facade, I looked to another of Donald Judd's pieces, a small extruded colored aluminum piece that looked as though it could be an adaptation of a mullion. I saw this extrusion piece as a representation of what Judd would perhaps consider a 'detailed' piece in his design studies, and used it as inspiration for a Miesian, modernized, neo-classical facade system.

A larger collection of these works were later manufactured and displayed at the Judd Foundation (101 Spring St.) as an installation titled '15 x 105 x 15 Installation of 12 Extruded Aluminum Pieces.'



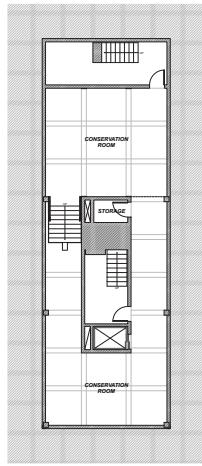
15 x 105 x 15 Installation of 12 Extruded Aluminum Pieces.



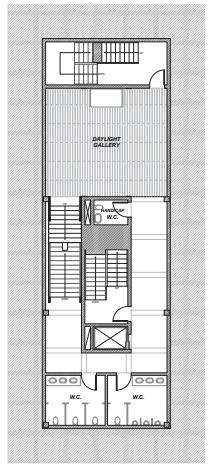
The site is directly across the street from the Judd Foundation.

Site Analysis Plan: 1/32" = 1'

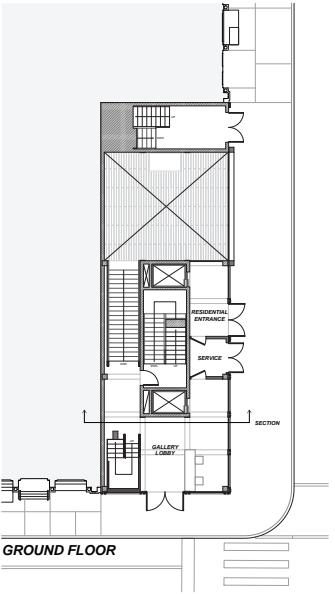
## MUSEUM ANNEX



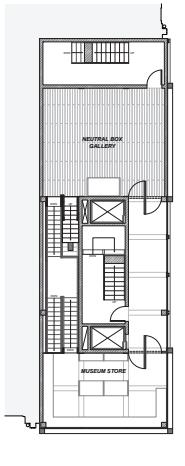
FLOOR 2B



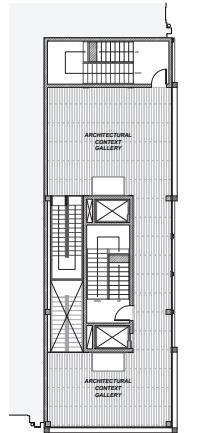
FLOOR 1B



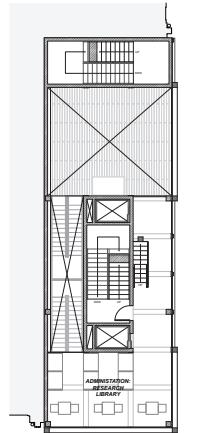
GROUND FLOOR



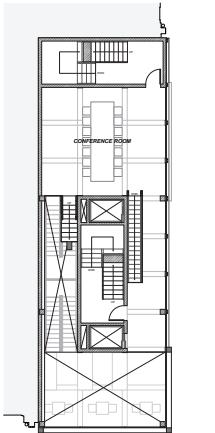
FLOOR 2



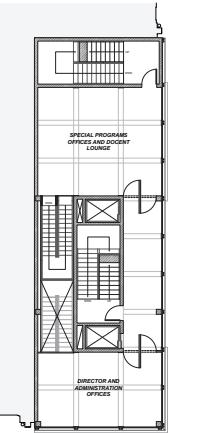
FLOOR 3



FLOOR 4



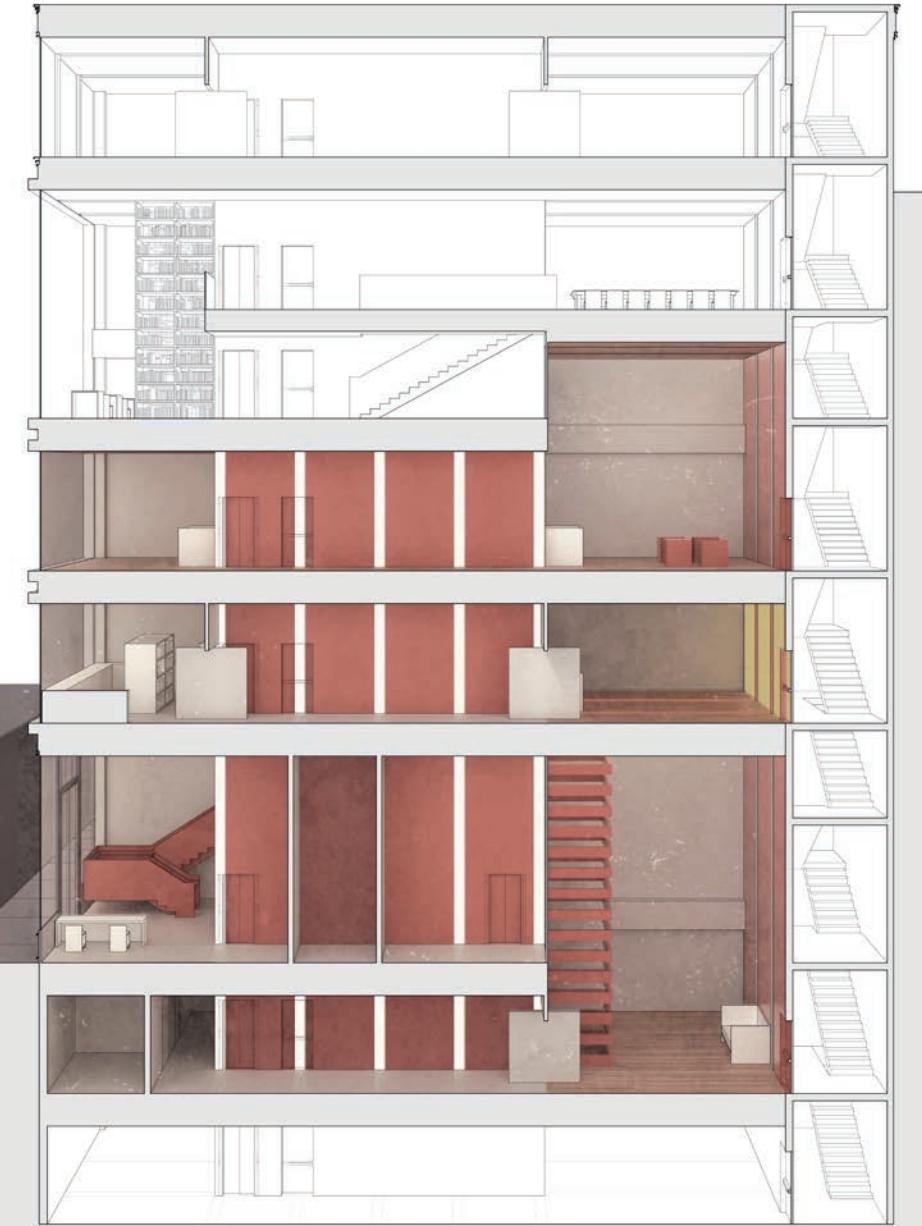
FLOOR 5



FLOOR 6



**SECTION PERSPECTIVE**

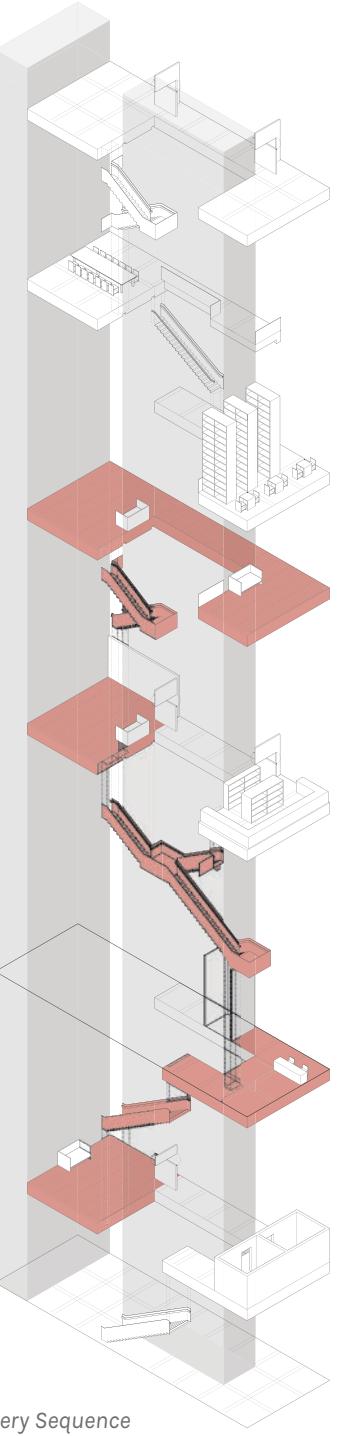




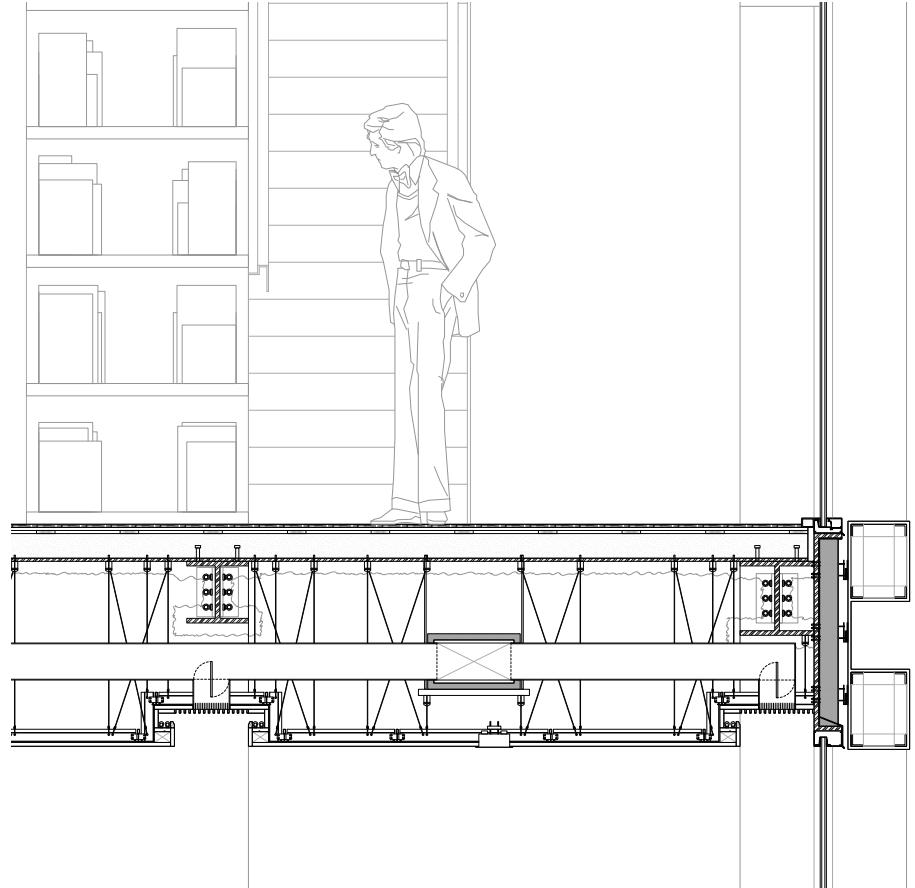
Architectural  
Context Gallery



Neutral Room  
Gallery -  
Dan Flavin  
Inspiration

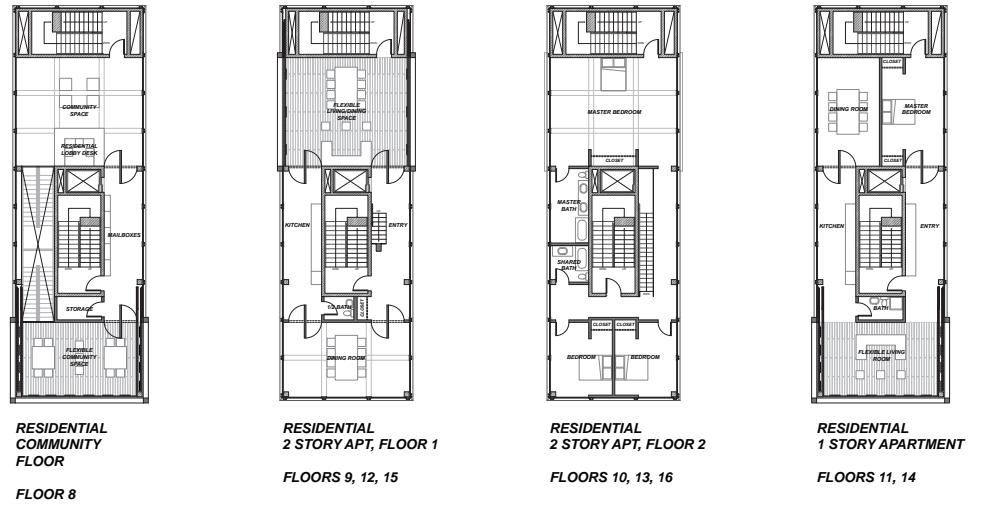


Gallery Sequence

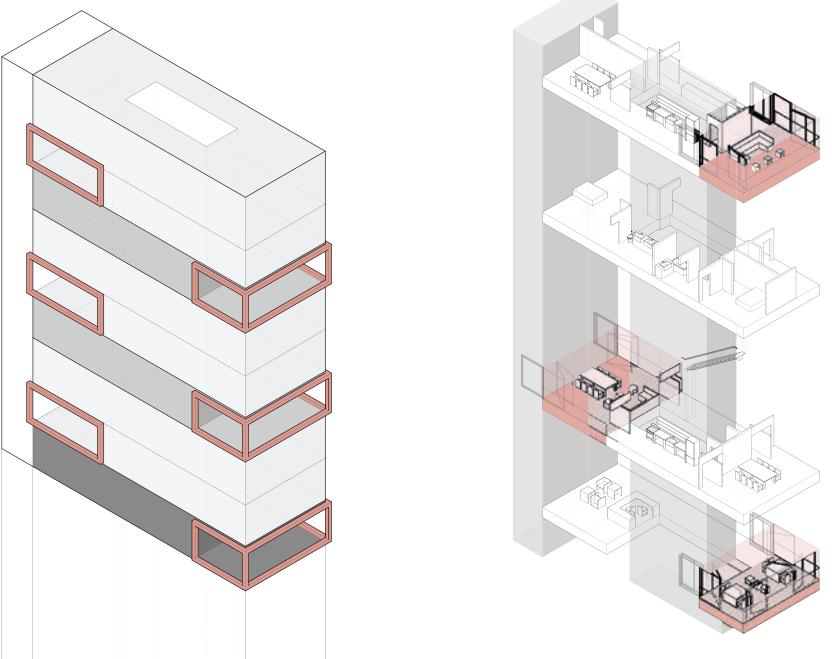


Section Detail

## RESIDENTIAL TOWER

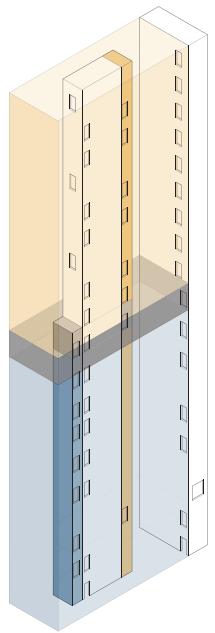


1 Story  
Apartment  
Living

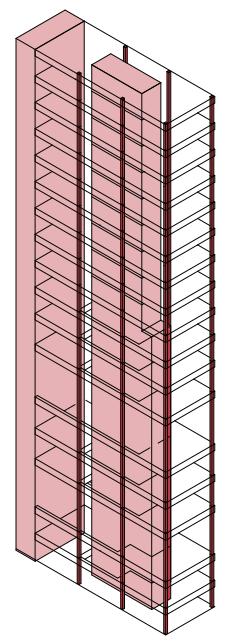


2 Story  
Apartment  
Dining





Core Diagram



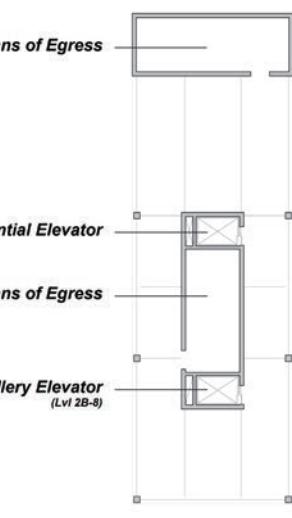
Structural Diagram



Spring St. Elevation



Mercer St. Elevation



# LUNAR GALA - SURFACE

Fall 2017 - Spring 2018

SURFACE explores the issue of the distortion and trivialization of the human body into objects of desire. The veneer of mesh, overlayed with cut contours, is a constructed external appearance that illustrates areas of the socially ideal body, exposing those who wear it to appreciation and admiration, but also leaving them vulnerable to objectification. As the line progresses, the body becomes more clearly exposed than upon first impression. It is meant to represent an exaggerated set of physical attributes that emphasize the scrutiny of our bodies – conscious and subconscious, external and internal.

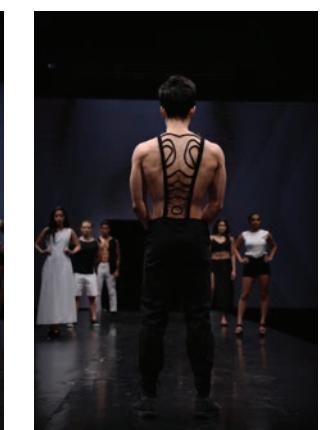
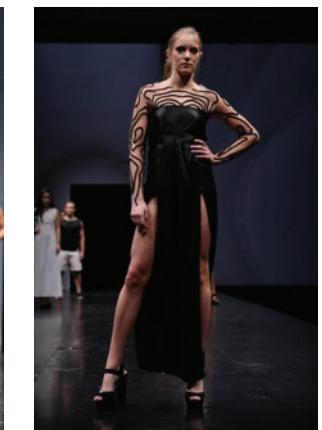
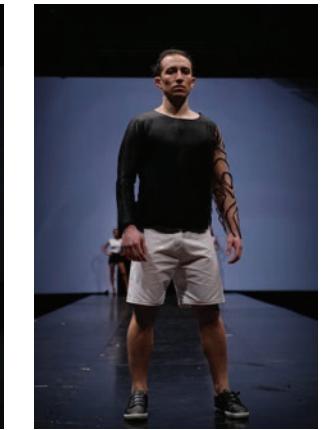
#### About Lunar Gala:

Originally created in 1997 to ring in the Chinese New Year, Lunar Gala has transformed into a highly anticipated event that hundreds hope to be part of and thousands hope to come see. While staying true to its original intent, it has developed into a much larger production and has become a more impactful organization to the CMU and Pittsburgh community. Every year, the theme of the show is centered around the Zodiac animal of the lunar calendar.

Now, Lunar Gala is arguably one of the largest fashion events in Pittsburgh, having sold out over 1200 seats each year with 140+ students involved in producing, designing, modeling, and dancing in the show. Students across all majors and cultures create original and creative lines, infusing technology and complex materials with wearable fashion.

In collaboration with Michael Powell.





# ATLANTIS TRANSPORTATION HUB

4th Year | Spring 2019  
Course: 05-392 Interaction Design Overview  
Duration: 2 week project

## INTRODUCTION PROMPT (PROVIDED)

You will need to design an interactive, data-driven display that structures and presents the data in an engaging, appealing manner and meets the needs of your stakeholder and users.

We will provide you with:

A set of data about a fictional transport hub called the "Atlantis Transportation Hub" for the San Juan Islands (a real set of islands), which are located off of the coast of Washington State. The data includes information about planes, trains, and ferries.

Personas of one stakeholder and two users, with accompanying use cases.

## Programs Used:

Sketch  
Invision/Invision Studio/Freehand  
Illustrator

## DETAILS

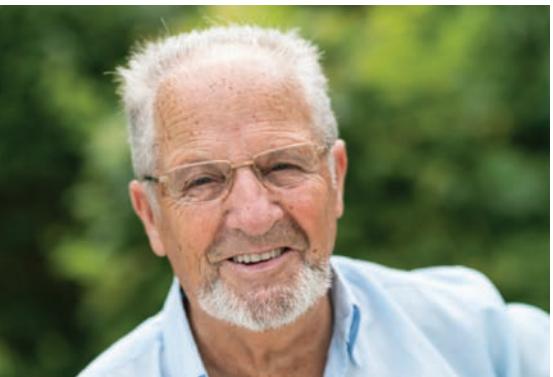
1. The hub is located in the San Juan Islands on the main island of San Juan.
2. The display is only for this hub.
3. The display is a data-driven interactive touchscreen, i.e., you cannot use a smartphone to interact with the screen.
4. Apply basic tenets of type, color, composition, grid, information hierarchy, interactions, etc., to apply to your design.
5. The display will require the use of simple animations for interactive elements and to signal data changes.
6. Consider adding additional information and visual elements to enhance the experience.



## ELIZABETH DUARTE

Transportation Director fo the Municipality of San Juan Islands

Elizabeth Duarte is the Transportation Director of the Municipality of the Greater San Juan Islands, a division of the local government that operates Atlantis Hub. Her department is responsible for displaying transportation data on large environmental displays in the Hub for Atlantis customers. In addition to offering highly readable displays of changing transportation data, Elizabeth aims to educate the public about the ease with which travelers can make itineraries by combining plane, train, and ferry trips through her new program, the PTF Pass, which allows customers a great value and a lot of flexibility.



## GEORGE SHIMKO

Property owner and retired resident of San Juan Islands

A long-time resident of the San Juan Islands, George Shimko is an avid outdoorsman who owns modest fishing cabins on nearby Orcas Island and Stuart Island. He regularly invites his children and grandchildren to his house on San Juan Island and intends to give them PTF passes so that they can travel throughout the San Juan Islands and to his cabins on Orcas Island and Stuart Island. He wants to be able to use his home on San Juan Island as a base so his guests can plan fun tourist itineraries.



## PATRICK MULVANEY

EnCo Environmental Engineer

Patrick Mulvaney, is an environmental engineer for EnCo, a large energy company in the region. As an engineer for EnCo who is stationed in Seattle, Patrick spends an average of three days per week visiting drilling and wind power sites throughout the San Juan Islands. Because weather often influences his travel between the islands, Patrick welcomes the new PTF Pass program that allows him to plan multiple trips via planes, trains, and/or ferries so that he can optimize his travel on-the-fly despite changing weather conditions.

## CONCEPT SKETCHES

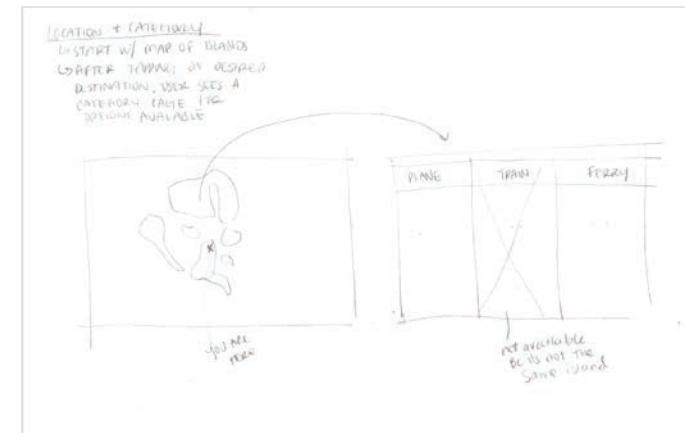
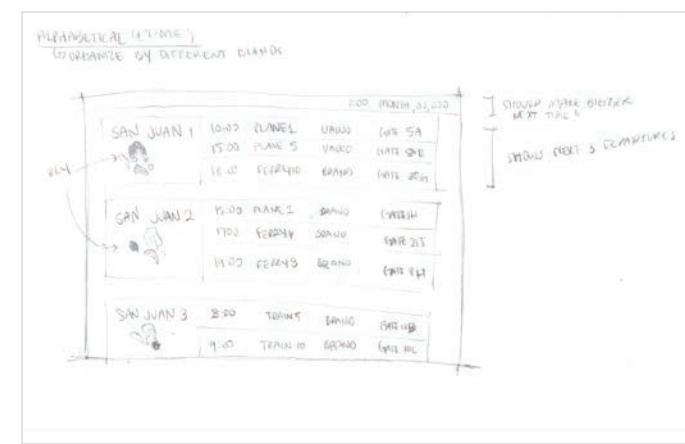
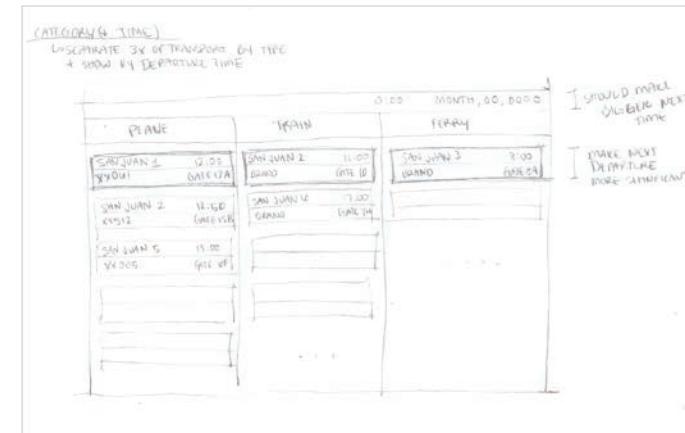
For my first concept sketches, I investigated different approaches to how to display the complex information provided in the data.

Each approach organizes the information by 1-2 methods from Richard Saul Wurman's "Five Hat Racks."

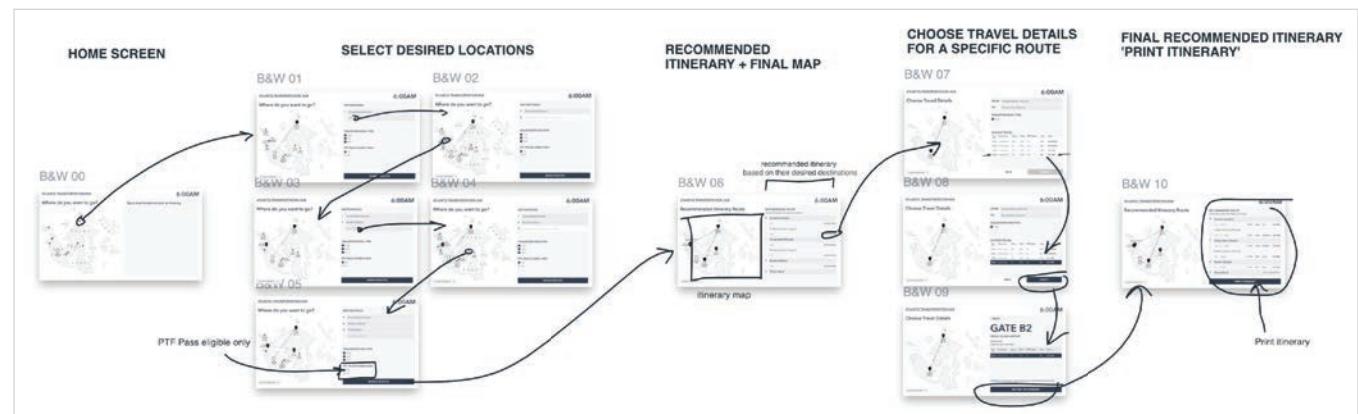
1. Location
2. Alphabetical
3. Time
4. Category
5. Hierarchy

Though each of the three concepts was able to organize the current data information, they did not address the PTF pass and did not allow a user to create an itinerary to travel through the islands.

The third option, which includes a larger map design, has the most potential to become a more complex interface, which would have to include information about the PTF pass and an itinerary scheduler.

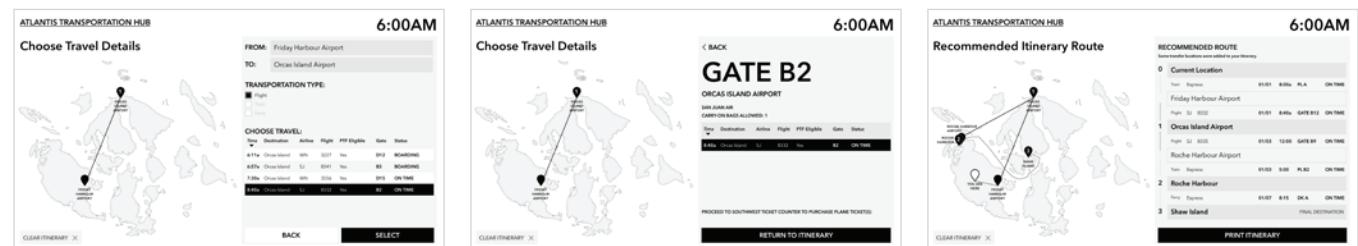


## USER FLOWS (INVISION FREEHAND)



## BLACK & WHITE MOCKUP

- a map with marked locations as a way for the user to navigate the transportation hubs around the islands
- a recommended route calculator (based on the desired destinations) with automatic transfer locations
- options for travel types and details
- detailed information about each travel option
- 'print your itinerary'



Sample Screens from Black & White Mockup

## COLOR MOCKUP 1



#E9633E

Introducing color into the mockup allowed for a greater variety of hierarchy, in addition to type hierarchy and opacity. I chose a Burnt Orange as the accent color, paired with a deep navy blue and a light blue-grey wash.



#34424F



#F5F5F7

The screenshots show the user selecting travel details from a map. The first screenshot shows a map of the San Juan Islands with a red dot indicating the starting point. The second screenshot shows a detailed view of Orcas Island with a red dot. The third screenshot shows a list of flight options from Friday Harbour Airport to Orcas Island Airport.

The screenshots show the recommended itinerary route. The first screenshot shows the user's current location at Orcas Island Airport. The second screenshot shows the full itinerary route, which includes flights from Friday Harbour to Orcas Island, then to Roche Harbour, and finally to Shaw Island. The itinerary also includes transfers by ferry and train.

Sample Screens from Color Mockup 1

## COLOR MOCKUP 1

The second color mockup integrated the terminal data information provided in the prompt into the current design, by moving the itinerary scheduler to the left half of the screen, and placing the current information about flights on the right. This allowed multiple users to interact with the display; they could view the current transportation information at a glance while another user could use the itinerary scheduler.

Because the itinerary scheduler was now given less screen real estate, a lot of thought was given to only displaying important information in the "Recommended Route" page, which gives users a step-by-step travel itinerary, along with transfer

The home screen displays a map of the San Juan Islands with a red dot indicating the user's current location. To the right, there are three main sections: "DEPARTURES" (listing flights, trains, and ferries), "FLIGHTS" (listing flights from various airports), and "TRAINS" (listing train departures). The "DEPARTURES" section also includes a "PRINT ITINERARY" button.

Time	Destination	Airline	Flight	PTF Eligible	Gate	Status
6:11a	Orcas Island	AA	1051	No	A9	BOARDING
6:17a	Friday Harbour	AA	1123	No	A1	BOARDING
7:01a	Roche Harbour	AA	1001	No	A11	ON TIME
7:32a	Friday Harbour	SJ	8009	Yes	B1	ON TIME
8:35a	Stuart Harbour	SJ	8943	Yes	B8	ON TIME

Time	Stops	Platform	Status
8:00a	Atlantis Hub, Roche Harbour, Yacht Haven, Atlantis Hub	A	ON TIME
8:00a	Atlantis Hub, Friday Harbour, Atlantis Hub	B	ON TIME
11:00a	Atlantis Hub, Roche Harbour, Yacht Haven, Atlantis Hub	A	ON TIME
11:00a	Atlantis Hub, Friday Harbour, Atlantis Hub	B	ON TIME
2:00a	Atlantis Hub, Roche Harbour, Yacht Haven, Atlantis Hub	A	ON TIME

Time	Destination	Arrival Time	Connection	Dock	Status
6:00a	Lopez Island	6:25a	No	A	DEPARTING
6:15a	Shaw Island	6:45a	Yes	B	BOARDING
7:00a	Orcas Island	7:20a	Yes	B	ON TIME
8:00a	Lopez Island	8:25a	No	A	ON TIME
8:15a	Shaw Island	8:45a	Yes	B	ON TIME

Home Screen from Color Mockup 2

## FINAL MOCKUP & ANIMATION

For the final mockup, I chose to remove the Burnt Orange border around the screen to remove potential distractions and emphasize the white space around the page elements.

The screenshots illustrate the following steps:

- Step 1: Initial Search**  
The user is on the "DEPARTURES" screen at 6:00AM, looking for travel options from the Atlantis Transportation Hub. They select "Orcas Island Airport" as their destination.
- Step 2: Destination Selection**  
The user adds "Roche Harbour" as a second destination. The map shows the route between the two locations.
- Step 3: Route Recommendation**  
The system recommends a route involving flights to Orcas Island and Roche Harbour, and a train to Shaw Island.
- Step 4: Itinerary Details**  
The user views detailed travel information for each leg of the trip, including flight times, arrival times, and connection details.
- Step 5: Travel Type Selection**  
The user chooses specific travel types (Flight, Train, Ferry) for each leg of the journey.
- Step 6: Recommended Route**  
The recommended route is highlighted on the map.
- Step 7: Itinerary Confirmation**  
The user reviews the confirmed itinerary, which includes flights to Orcas Island and Roche Harbour, and a train to Shaw Island.
- Step 8: Final Confirmation**  
The user confirms the itinerary, and the system prints a ticket.
- Step 9: Print Confirmation**  
The user is prompted to print the ticket.
- Step 10: Final Confirmation**  
The user is informed that the document is being printed.

## ANIMATION 1

When designing the animation between interactions, I chose to create a fade-in/appearing location marker for the destination that the user selects; when they touch the destination's marker, they are able to immediately see the state change in which that location's marker changes to an orange and increases scale. This results in a fluid and dynamic transition between pages.

This screenshot shows the "Select Your Destinations" interface. The user has selected "Orcas Island" and "Roche Harbour" as destinations. The map highlights the route between these locations. The right side of the screen displays a table of departures and a search bar.

## ANIMATION 2

This animation serves as a fluid transition between the "Recommended Route" page and the "Choose Travel" page by visually linking which travel you are searching for.

This screenshot shows the "Recommended Route" interface. The user has selected "Orcas Island" and "Roche Harbour" as destinations. The map highlights the route between these locations. The right side of the screen displays a table of departures and a search bar.