

DAVID SELLERS
ARCHITECTURE PORTFOLIO
2016 B.ARCH GRADUATE



SKILLS

 Autodesk AutoCAD: Advanced [9 Years]

 Autodesk Revit: Advanced [8 Years]

Ps Adobe Photoshop: Advanced [8 Years]

Ai Adobe Illustrator: Advanced [6 Years]

ID Adobe InDesign: Advanced [6 Years]

 Autodesk 3ds Max: Proficient [7 Years]

 Hand-Drawing: Proficient [6 Years]

 Digital Fabrication: Proficient [5 Years]

 Autodesk Rhino: Proficient [5 Years]

 Google SketchUP: Proficient [4 Years]

CONTENTS



The New Church of Amherst



Eventarium



Helios House



ALCOSAN Riverside Park



Sphere



Brooklyn Bridge Museum



ID

Ps



New Church of Amherst

Advisor: Madis Pihlak

Architectural Thesis II

Fall 2015 - Spring 2016

30 Weeks

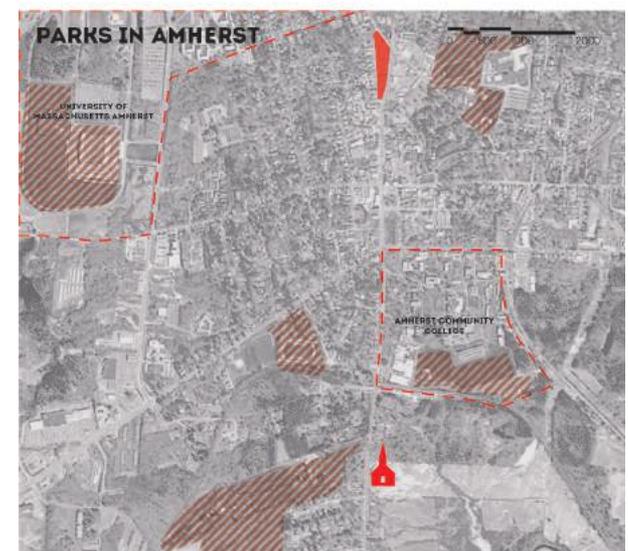
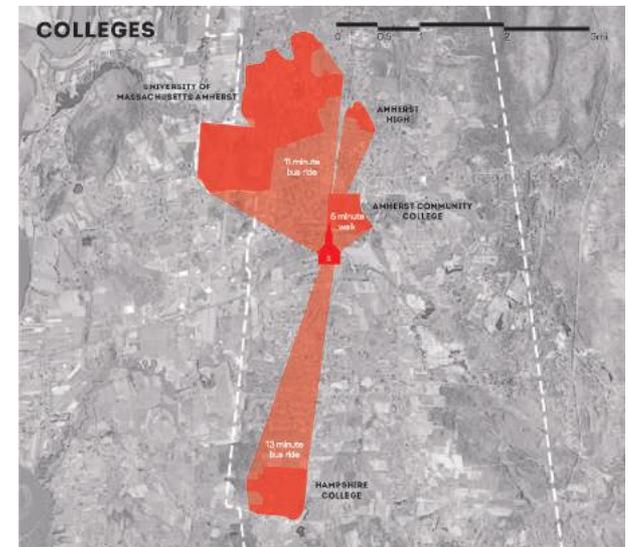
CHURCH ARCHITECTURE FOR HOLISTIC HEALTH

A study of how new hybrid church-community centers can improve holistic health in New England.

The New Church of Amherst is a new building typology located in Amherst, Massachusetts. This thesis is the cumulation of multiple studies, including research on the state of holistic health in America, existing programmatic breakdowns of churches, community centers, and holistic health centers, and the historic local context.

Holistic health is a problem, especially in New England, as New England is the least spiritual region of the country. The goal of introducing the New Church of Amherst is to provide a neutral location for the student and local population of Amherst to nurture mental, physical, and spiritual growth.

This new building typology will improve holistic health in New England, and act as an example for the rest of the country. Reintroducing the church as a place of growth and healing reinforces the Biblical roots of the church, and will change church perception in New England.



Growth in New England

NEW ENGLAND

Founded 1688

VERMONT

Population: 0.6 M.
Evangelical Church Attendance: 3.6%
Growth in last 10 years: +1.2%

NEW HAMPSHIRE

Population: 1.3 M.
Evangelical Church Attendance: 3.6%
Growth in last 10 years: +1.2%

MAINE

Population: 1.3 M.
Evangelical Church Attendance: 4.4%
Growth in last 10 years: +1.1%

MASSACHUSETTS

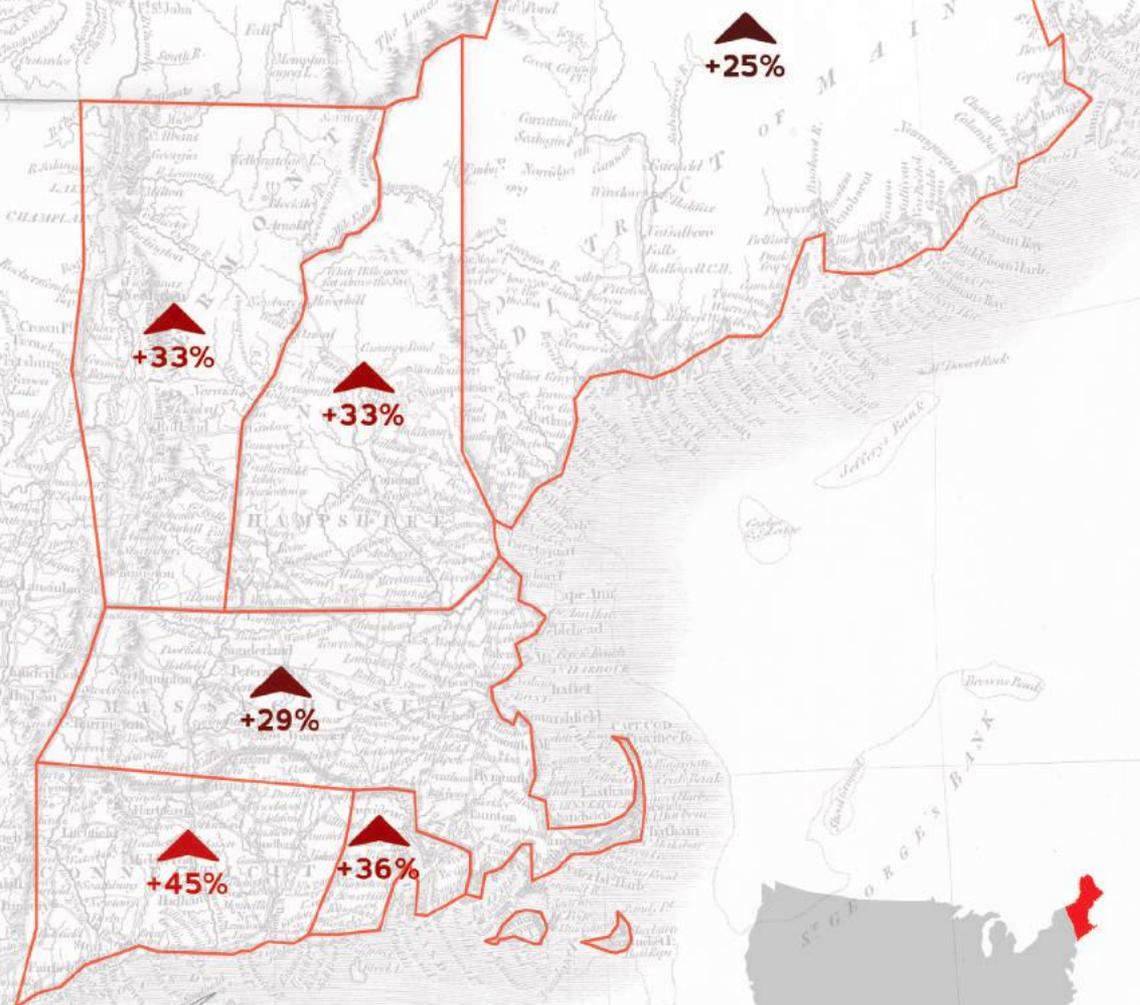
Population: 6.7 M.
Evangelical Church Attendance: 3.4%
Growth in last 10 years: +1.0%

RHODE ISLAND

Population: 0.6 M.
Evangelical Church Attendance: 2.5%
Growth in last 10 years: +0.9%

CONNECTICUT

Population: 0.6 M.
Evangelical Church Attendance: 4.4%
Growth in last 10 years: +2.0%



+25%

+33%

+33%

+29%

+45%

+36%



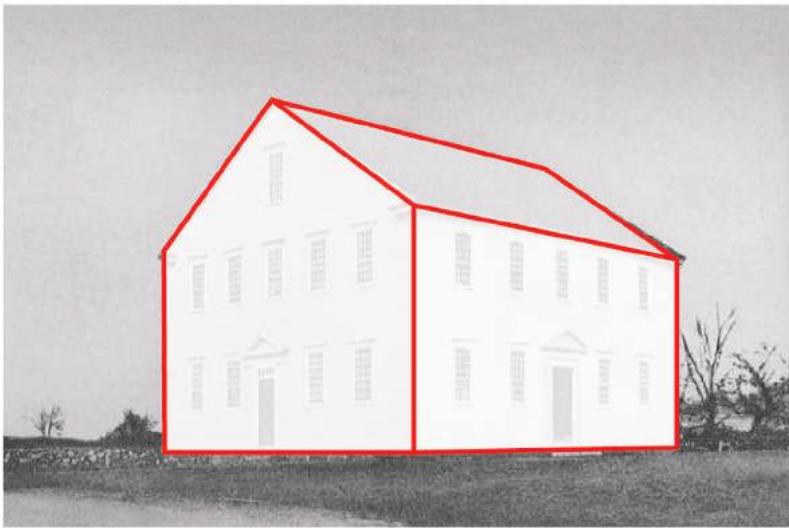
A T L A N T I C

New England Meeting House

"You're talking about the power of religion in New England. These buildings weren't created in a vacuum by their builders or housewrights. They're a reflection of communities that wanted them."

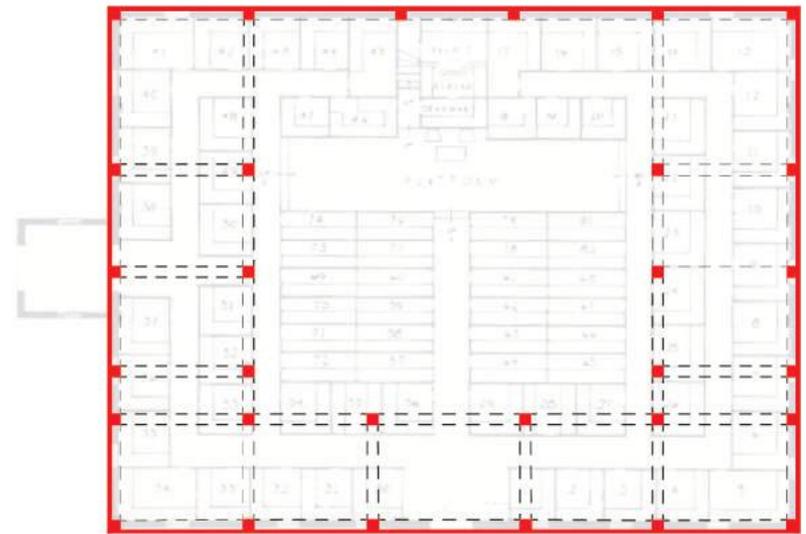
-Steve Rosenthal, Historian

Form

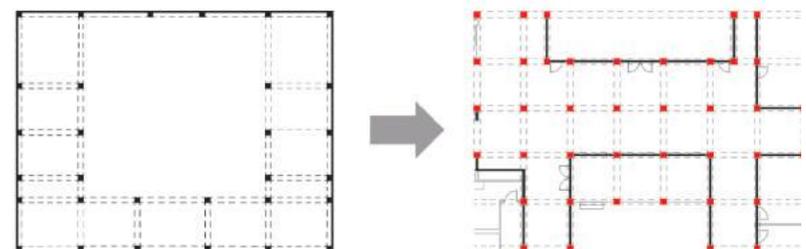
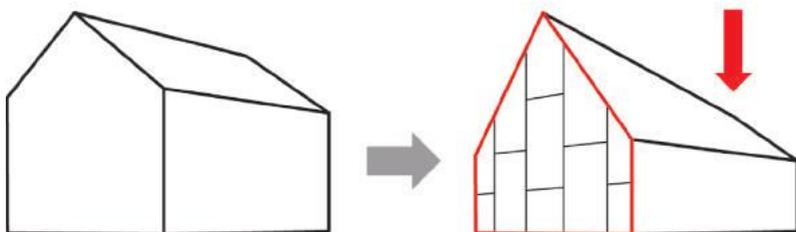


The form of the traditional New England Meeting House was based off of the colonial meeting house. Prior to being fully converted into the New England Church icon of whitewashed wood and tall steeple, the Meeting House had a more simple form. These buildings typically are two stories tall and have a traditional box gable roof. Variations on this form for the New Church of Amherst will include lowering the back gable wall to a single story height and converting the front gable wall to glass.

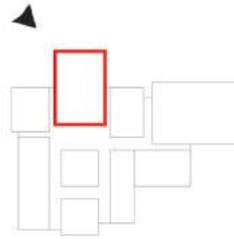
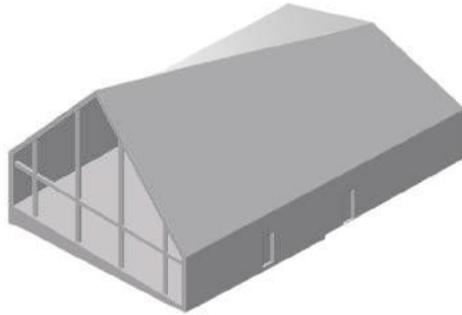
Grid



The traditional plan for the New England Meeting house focuses on the single-use nature of the building. The structural grid of the building was designed from the necessity of the second floor balcony. The structure, made using wooden post-and-beam construction, generates the building's grid. The idea of grid and wooden post-and-beam construction will be redesigned and influence the organization of the New Church of Amherst.



Church Room



CHURCH

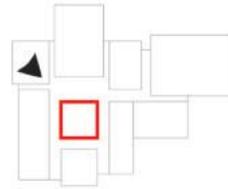
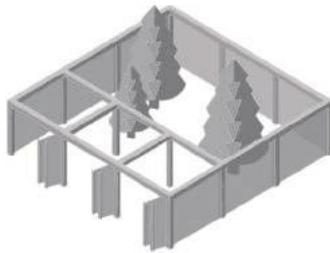
Church services, assemblies, meetings, sunday school, prayer meetings

COMMUNITY

Plays, performances

HEALTH

Courtyard



CHURCH

Meetings, bible studies, recreational activities

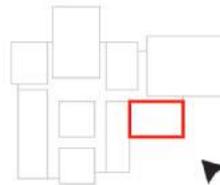
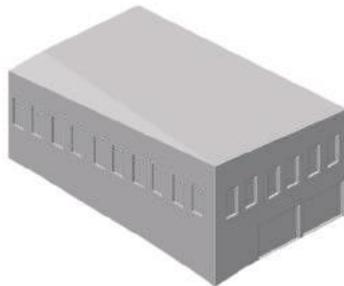
COMMUNITY

Meetings, recreational activities

HEALTH

Meetings, recreational activities

Recreation and Therapy



CHURCH

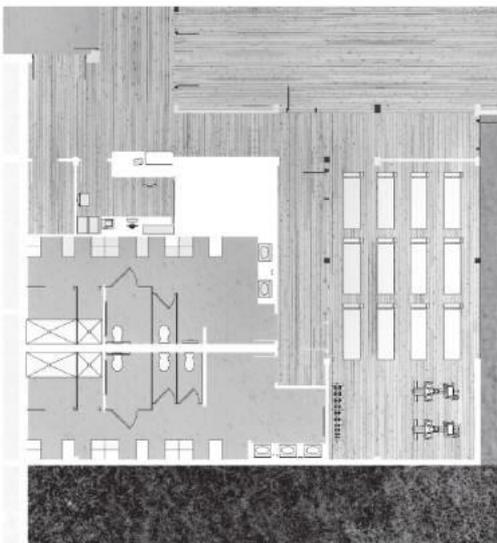
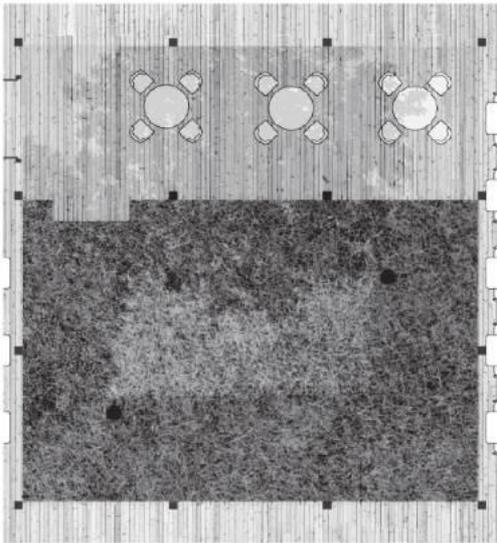
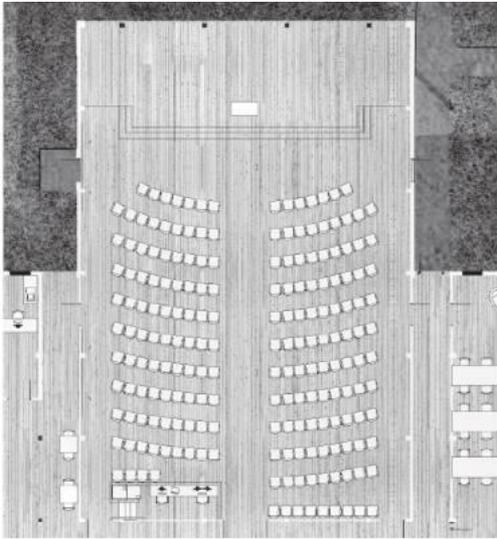
Youth events, meetings, counseling

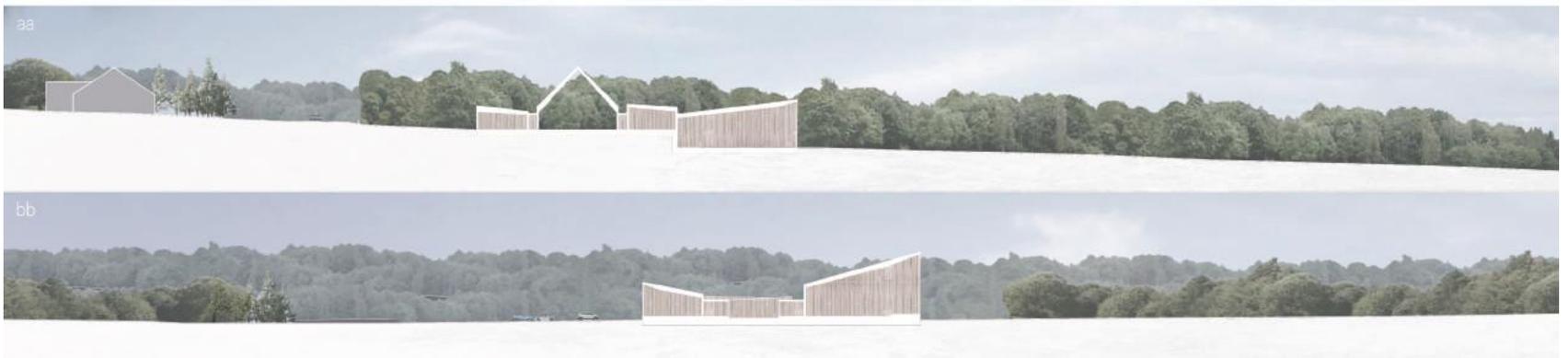
COMMUNITY

Meetings, youth events, yoga classes

HEALTH

Counseling, therapy, nursing classes, yoga therapy, physical therapy







Wall Section

SCALE: 1/2" = 1'-0"

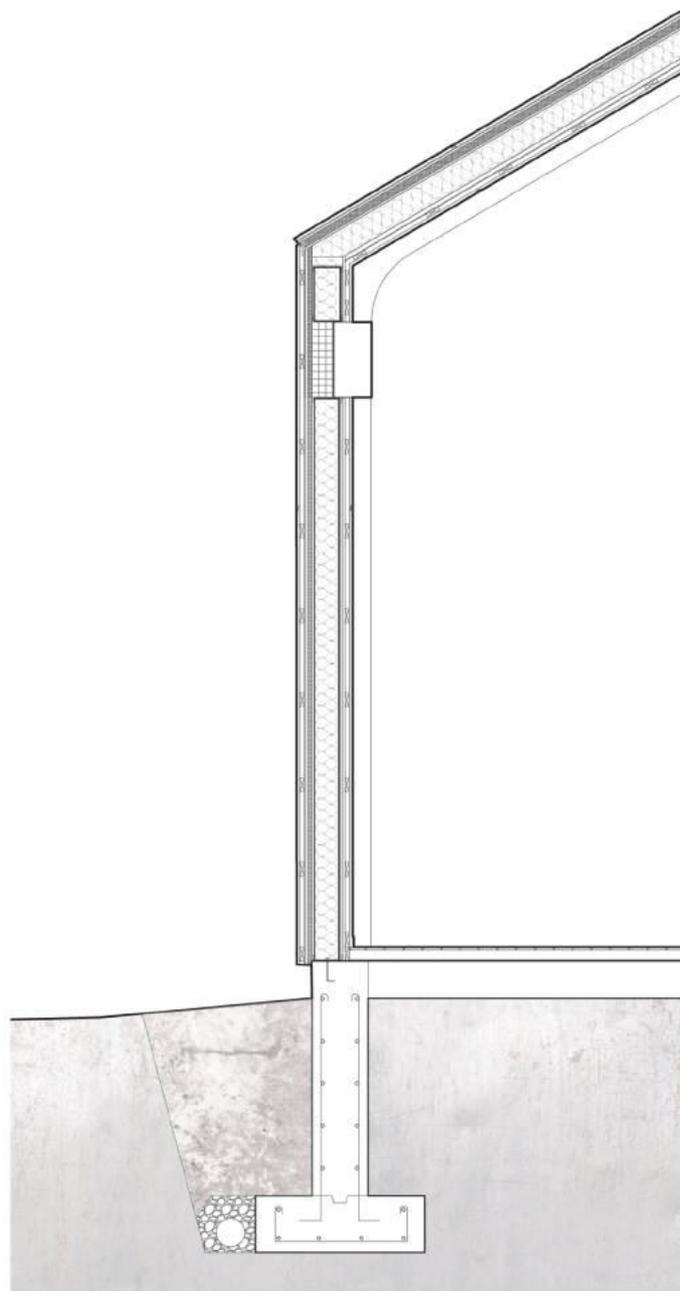


R O O F

Wood Panel Roofing
Water Protection Membrane
1/2" Roof Sheathing
1 1/2" Rigid Insulation
5/8" Roof Sheathing
Batt Insulation
5/8" Gypsum Wall Board
Vapor Retarder
Sealant
Flashing

W A L L

Wood Panel Siding
4.5" Rigid Insulation
Glulam Beam
1/8" Expansion Clearance
1x3 Furring Channel
Building Wrap
1/2" Plywood Sheathing
1" Rigid Insulation
Metal Stud
Batt Insulation
Glulam Post
5/8" Gypsum Wall Board
Wood Panel Walls
Wood Baseboard
Metal Channel



C E I L I N G

1x3 Furring Channel
Wood Panel Ceiling
Sealant
Metal Rectangular Channel

F L O O R

Wood Flooring
2x4 Flooring Framing
Resilient Pads
Concrete Floor

F O U N D A T I O N

Insect Screen
Anchor Bolt
Concrete Foundation Wall
#6 Bars @ 8" o.c.
Concrete Footing



Ai Ps



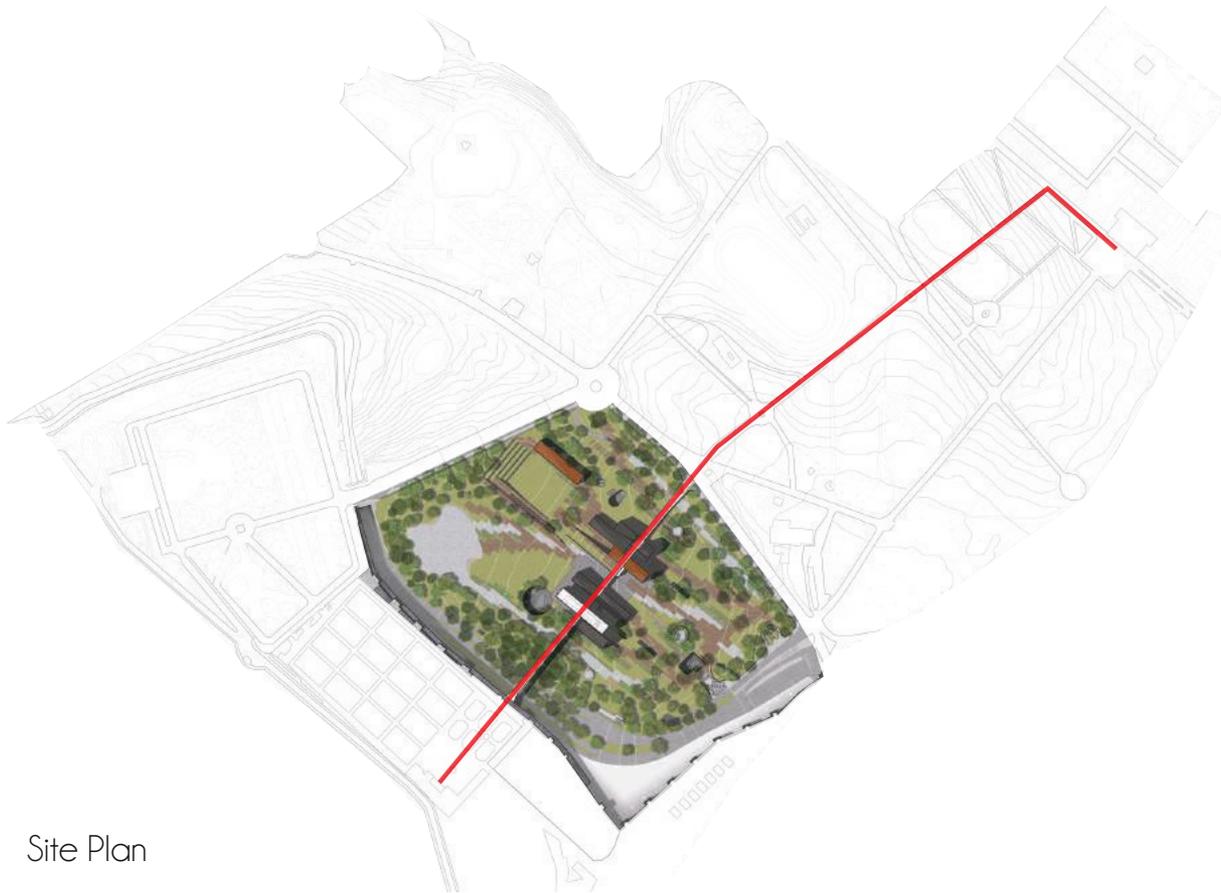
Eventarium

Professors: David Sabatello, Simone Bove

Architectural Design VI

Spring 2015

15 Weeks



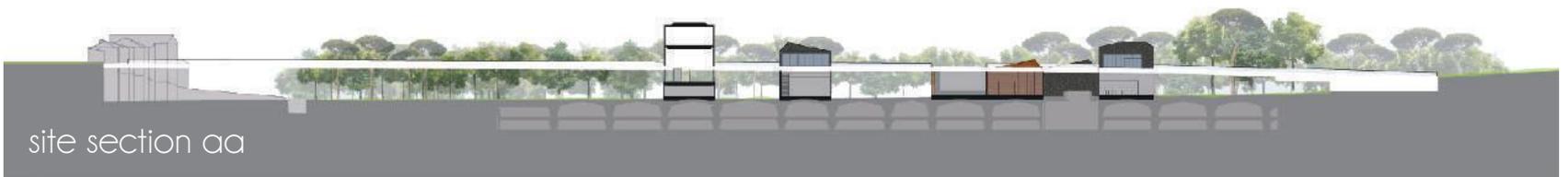
The Eventarium is located in the historic Villa Borghese located in the north of Rome, just outside the Aurelian Wall. The Villa is versatile in the different programmatic elements which hold public events, museums, and spaces for relaxing in the public parks. The prompt of this studio was to create a new museum, commercial buildings, and an eventarium to hold various events and to relieve some older parts of the Villa from overuse.

The site proper is located in the southern corner of the park and terminates the main axis from the Palazzo Borghese. The site currently has a parking garage underneath it with a column grid of 13 meters - which was used as an existing condition to generate the linear grid seen in the project.





overview



site section aa



site section bb



site plan



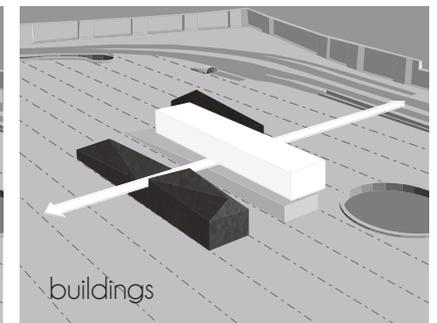
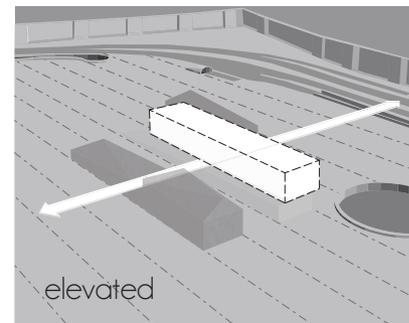
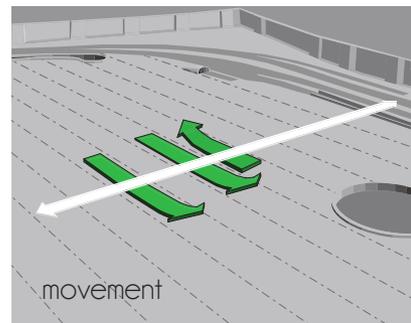
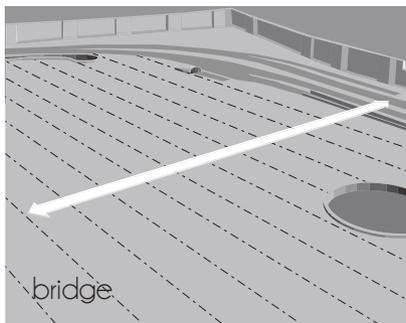
peperino

travertine

frosted glass

concrete

wood



The building cluster that was the focus of this project was broken down into two parts, the museum program and a welcome building - library for museum support. The museum is accentuated as the only building to have a different construction material and elevated form as it was the focus of the project..



library elevation



library section



museum elevation



museum section





↑ ▲ Ai + Ps



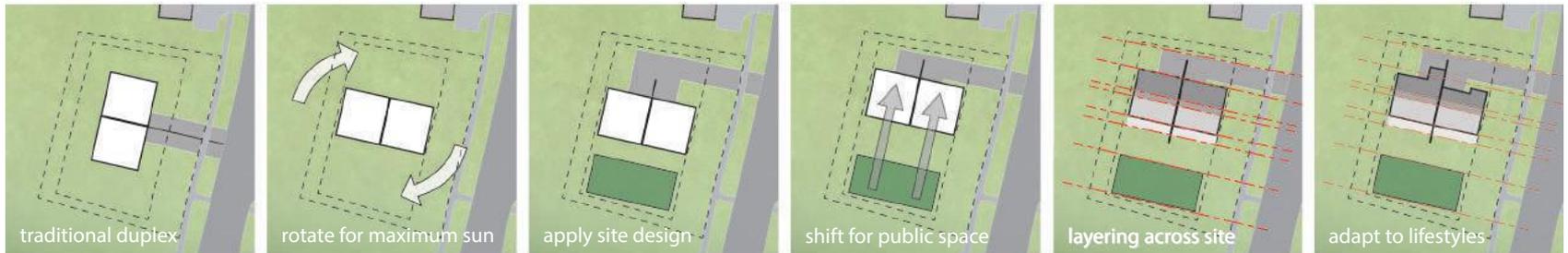
Helios House

Professors: Eric Sutherland, Lisa Iulo

Architectural Design V

Fall 2014

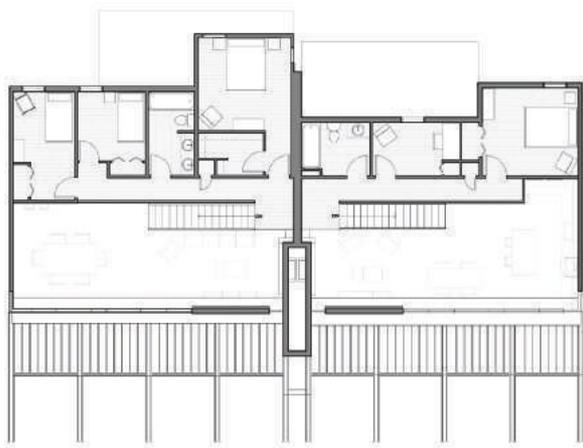
15 Weeks



The Helios House project was created in collaboration with the State College Community Land Trust (SCCLT). The SCCLT is a non-profit housing assistance organization that helps income-qualified individuals and families purchase a home in the Borough of State College. The SCCLT helps to reduce the cost of buying a home by "splitting" the ownership of the property between the SCCLT and the individual homeowner.

The project was challenged by a strict budget and location, an empty lot in State College Borough. The site was being used as a small community garden, something that my group took into account when we looked at the landscape design. The house was assigned to be an affordable duplex that provided structure and flexibility to young, growing families. The lower half of the proposed project, "Phase 2," was not part of the original project brief, but we found it an important element to reintroduce to the neighborhood.



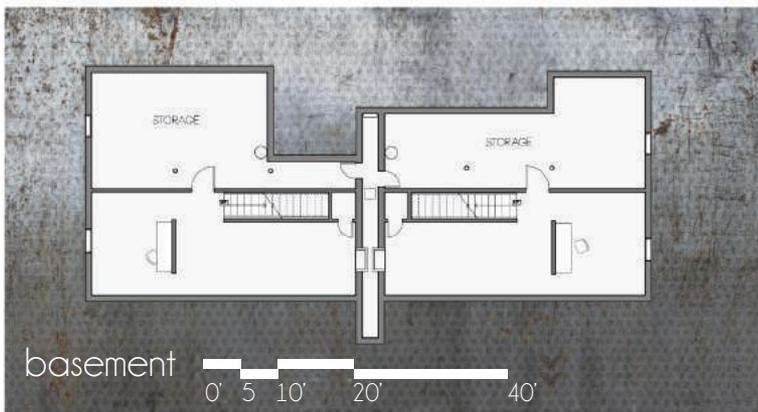


first floor

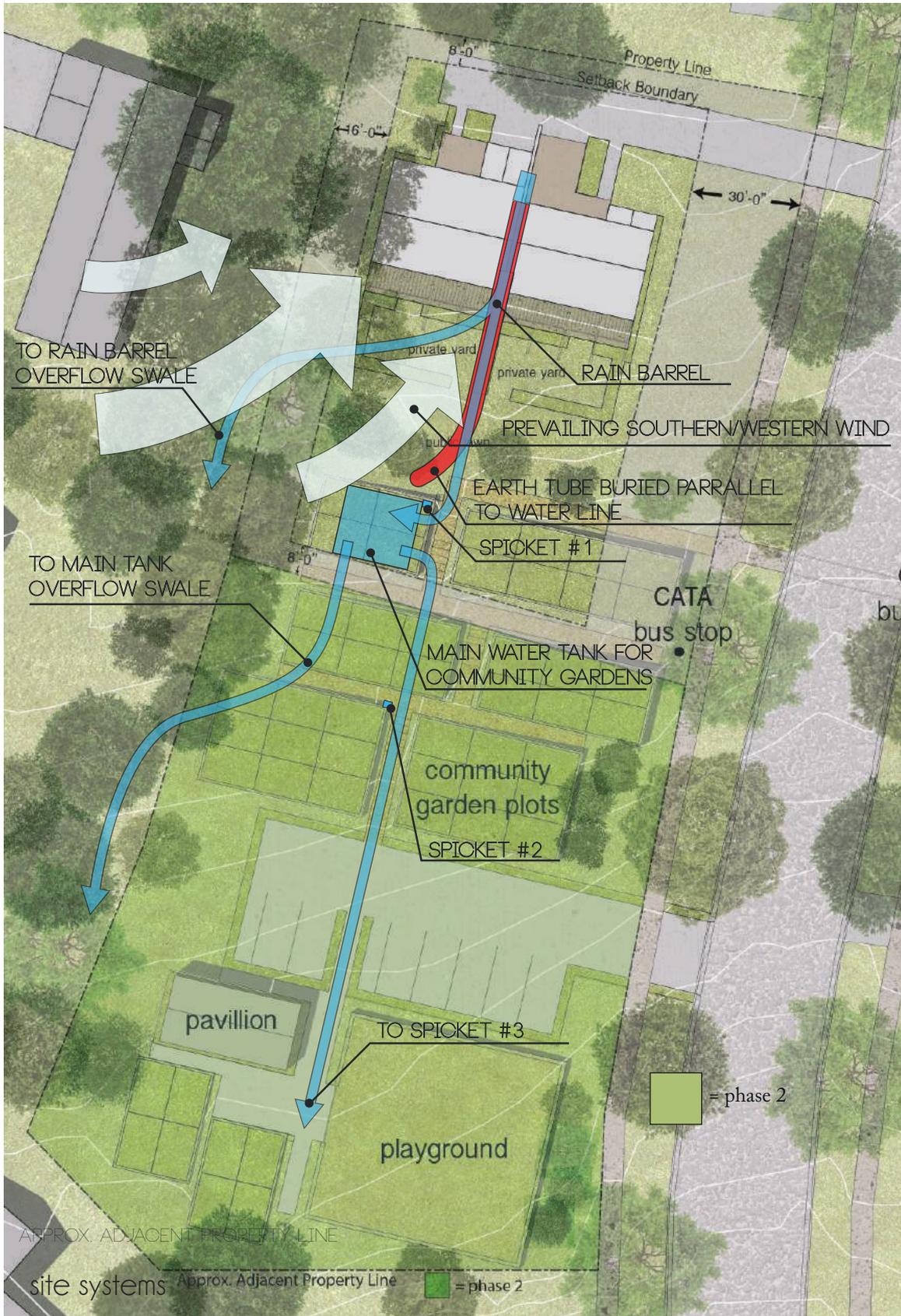
The Helios House was oriented facing south rather than to the street as to allow both sides of the duplex an equal amount of sunlight. The idea of light penetrating the house became the language by which the spaces of the house were organized. The planning of the site and building were layered from south to north as to give priority to the southern exposure. Radial organization of spaces inside the building allowed for the perimeter to house living spaces.



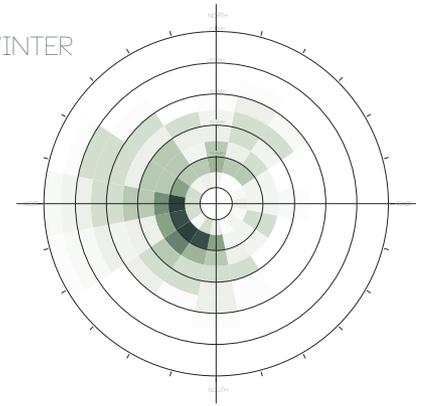
ground floor



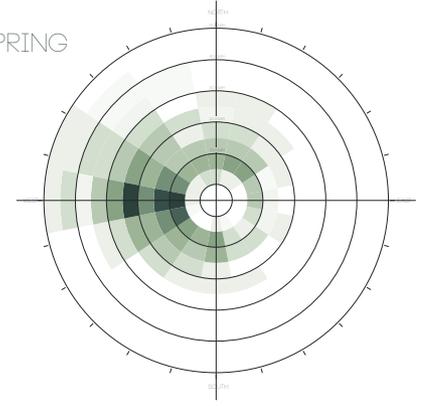
basement



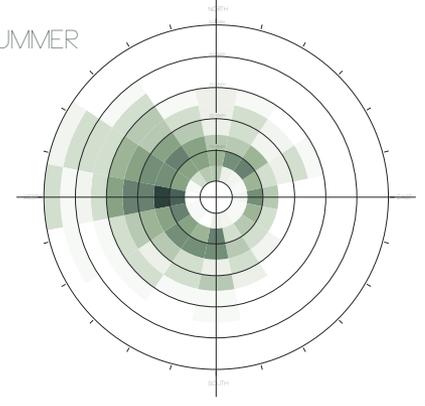
WINTER



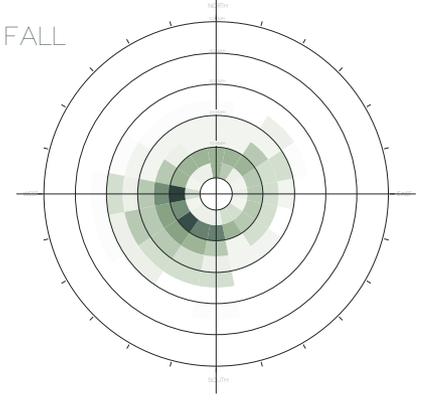
SPRING

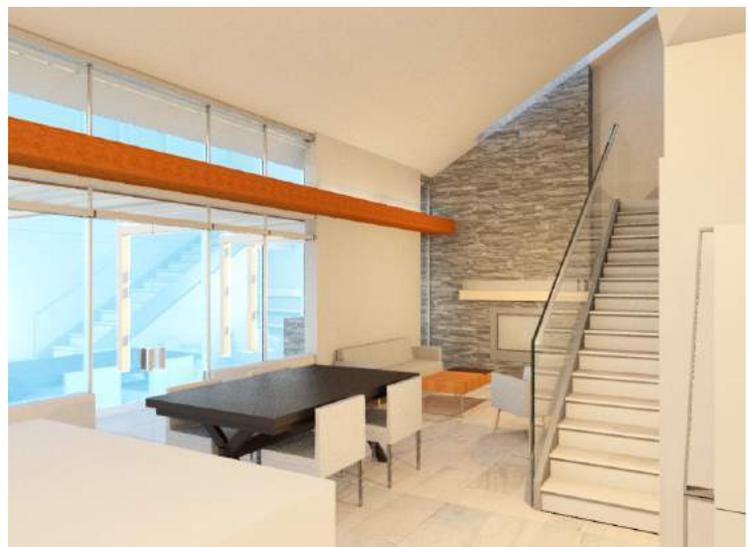
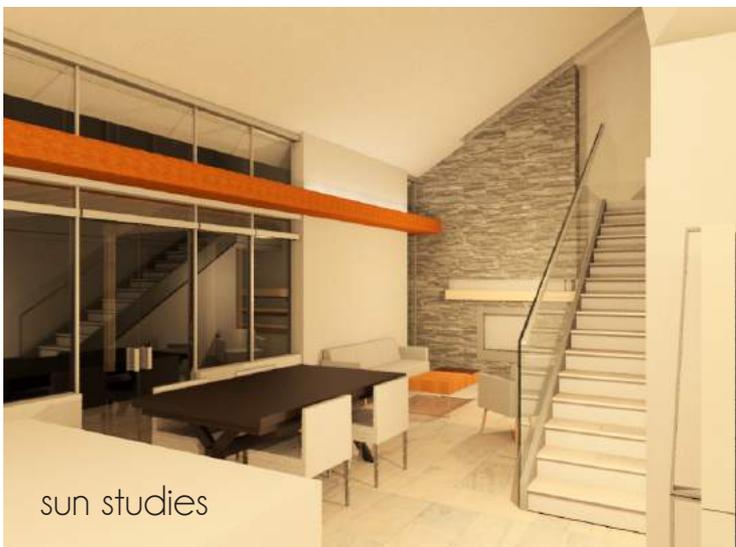


SUMMER



FALL

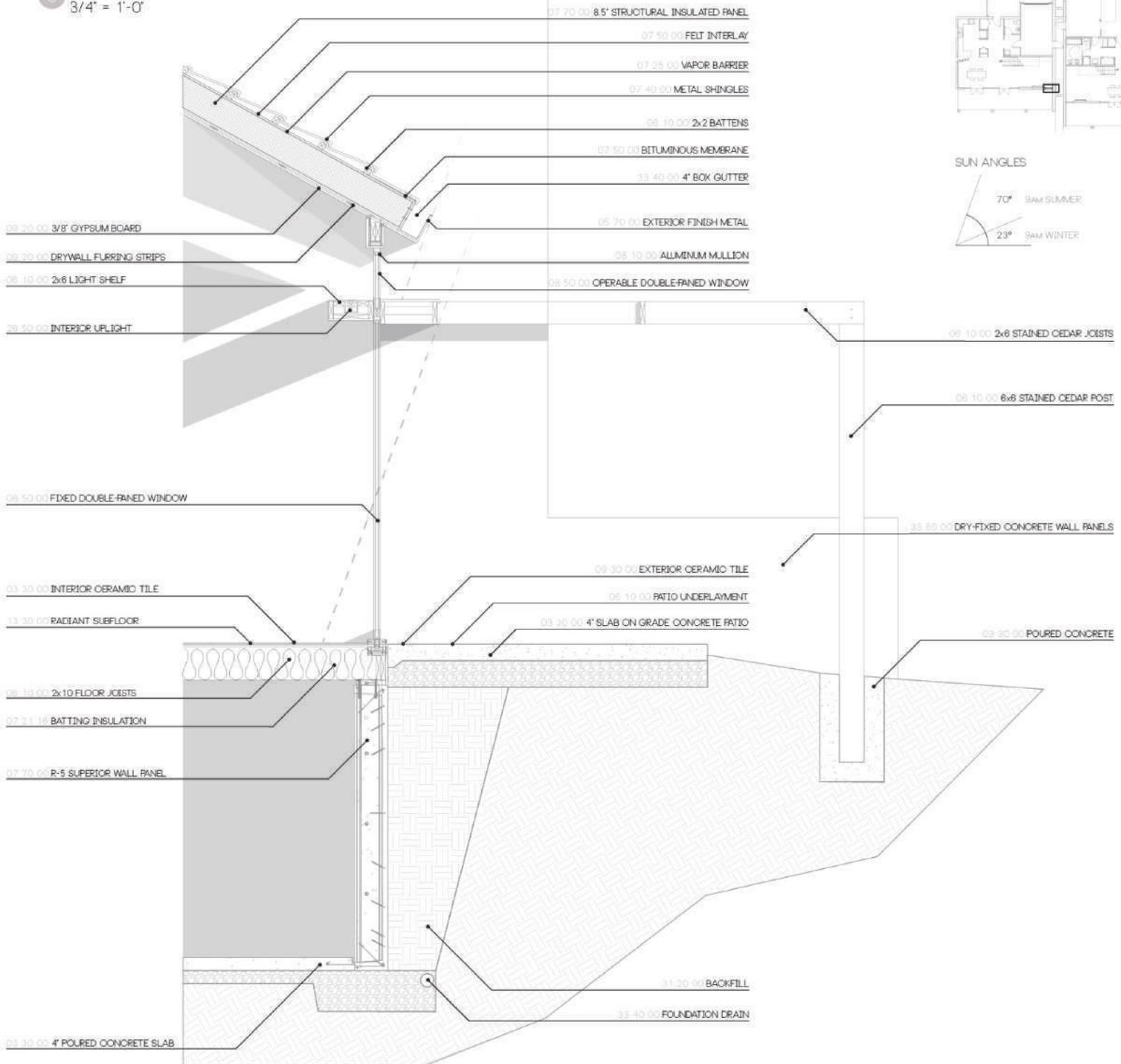






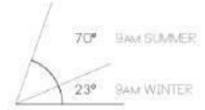
living room

3 WALL SECTION FULL LENGTH WINDOW ON SOUTH FACADE
3/4" = 1'-0"



KEY PLAN
N.T.S.

SUN ANGLES



A R Ai Ps

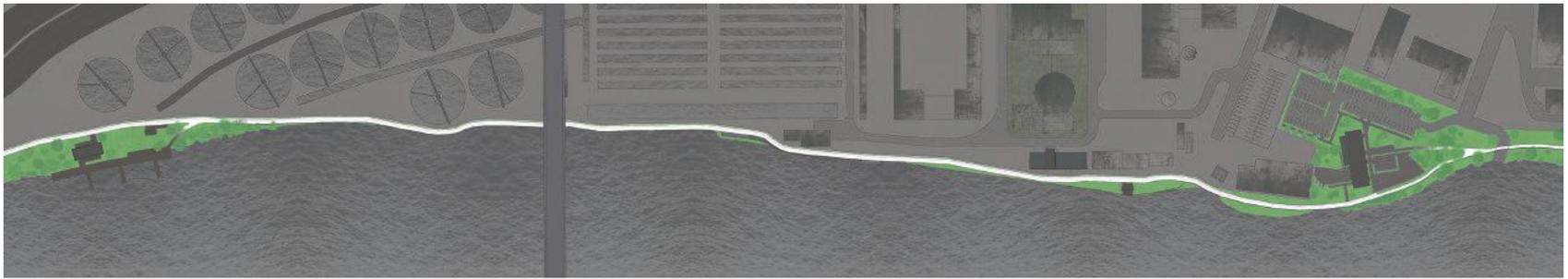
ALCOSAN Riverside Park

Professor: Rebecca Henn

Architectural Design IV

Fall 2013

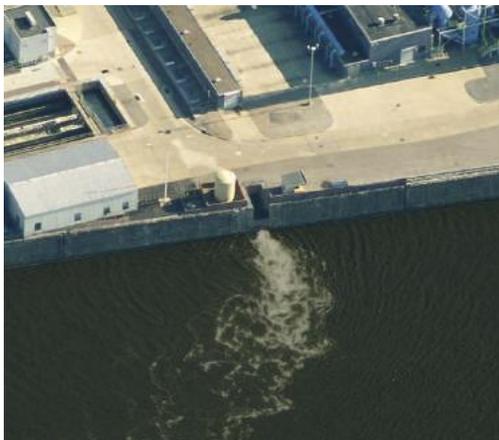
15 Weeks



an escape from the industrial context

The ALCOSAN Education center was proposed as a welcome center and museum that would educate the public about the wastewater treatment plant in Pittsburgh, PA. I proposed a extending the existing bike path, connecting it into a loop as well as showcasing the hidden parts of the plant. The mission statement for the project was as follows:

Offering an escape from the abrasive urban and industrial context by providing recreational and educational facilities. Education through connections. The bike path connects the public with the site in a macro scale. The bike path connects the users along the site to the various elements. The dock and boat storage connects the public back to the river. The water outflow showcases the connection alcosan has with the river-and therefore-the impact it has on the residents of pittsburgh.



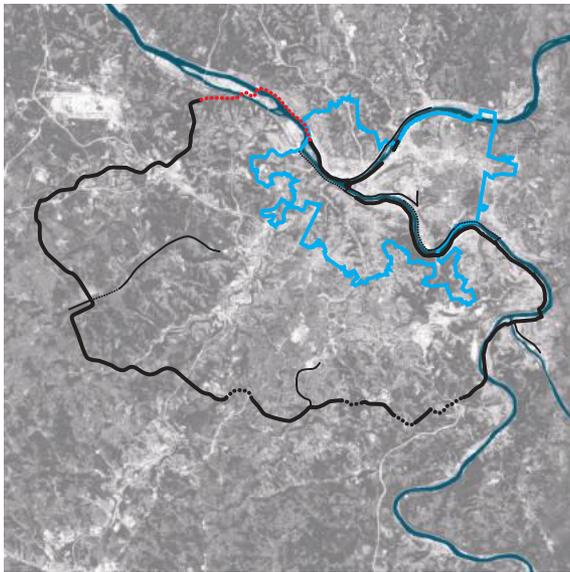
water outflow



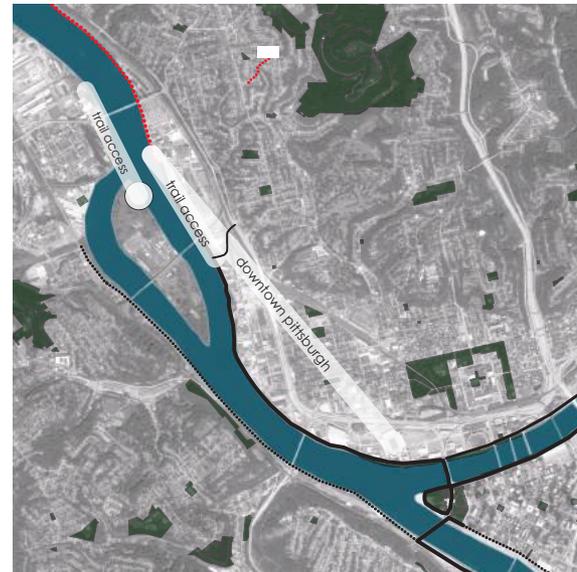
end of three rivers trail



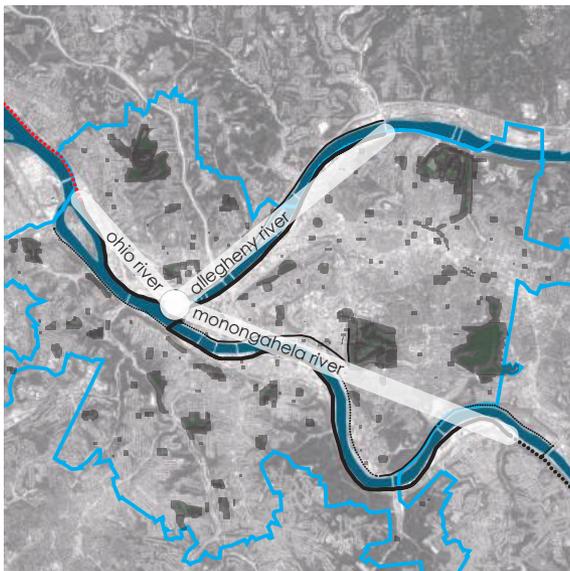
end of montour trail



- existing trail
- trail under construction
- pittsburgh city limits
- additional trail to complete loop: 5.5 mi.



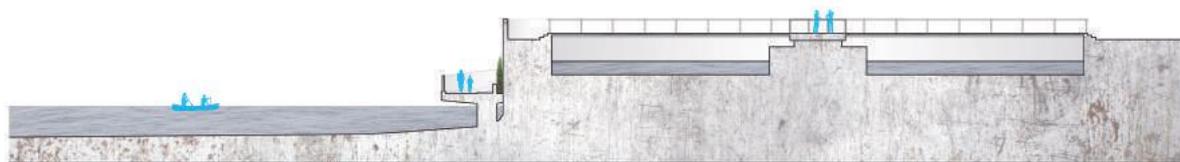
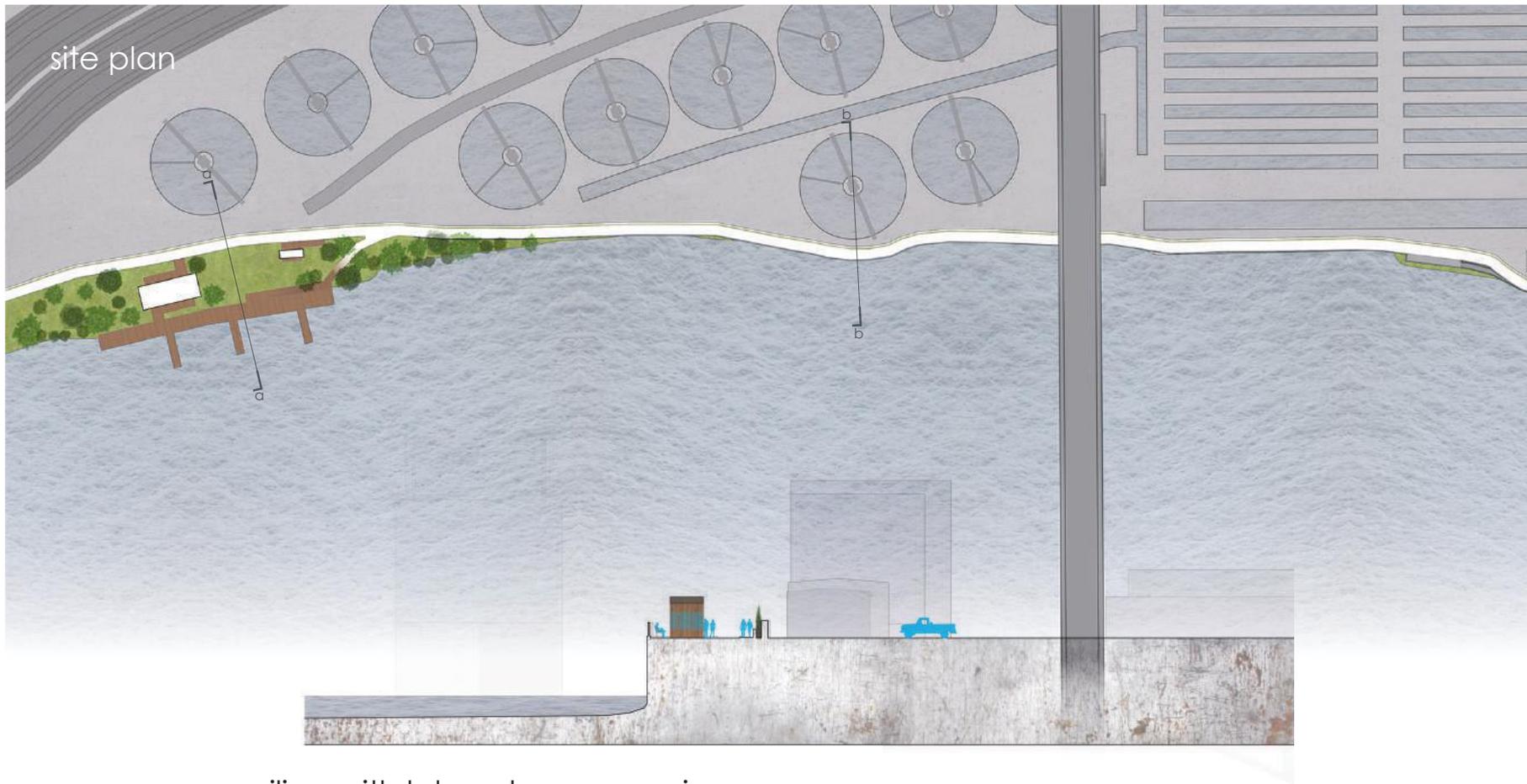
- public parks
- distance to proposed trail access: 0.9 mi
- distance to existing trail access: 1.2 mi
- distance to downtown pittsburgh: 2.6 mi.



- pittsburgh city limits
- existing trail along the ohio river: 2.6 mi.
- existing trail along the allegheny river: 4.5 mi.
- existing trail along the monongahela river: 9 mi.



- alcosan
- residential
- industrial: strip district
- local eateries

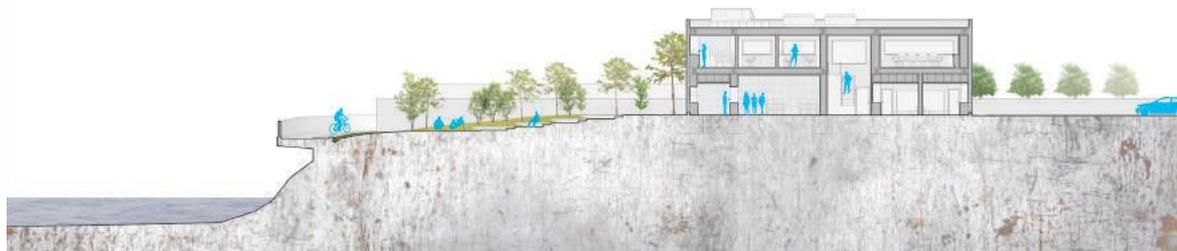




ff: beer garden with welcome building



ee: welcome building interior



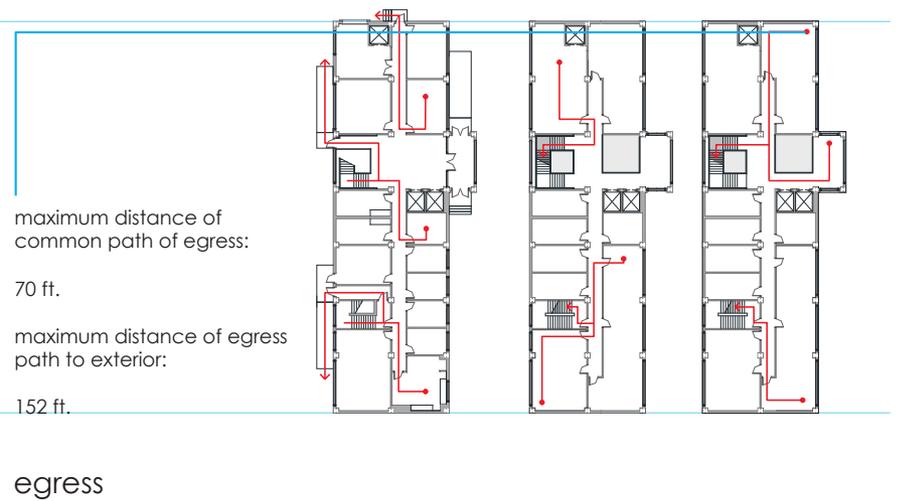
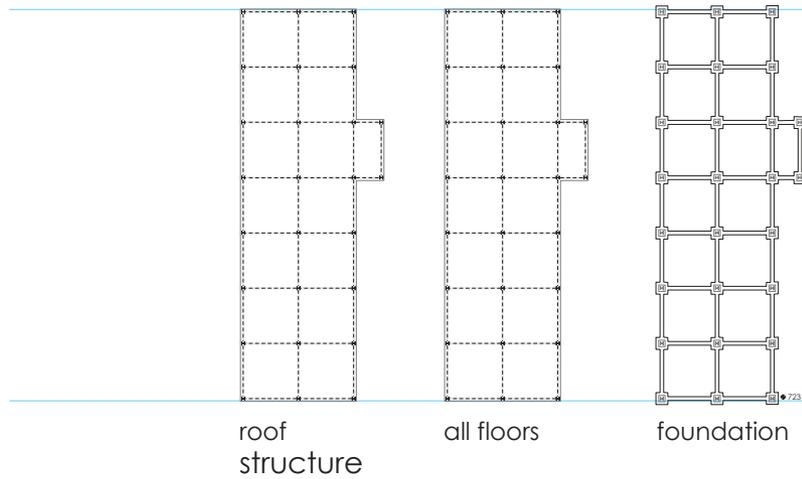
dd: welcome building core



boathouse and dock



laboratory expansion

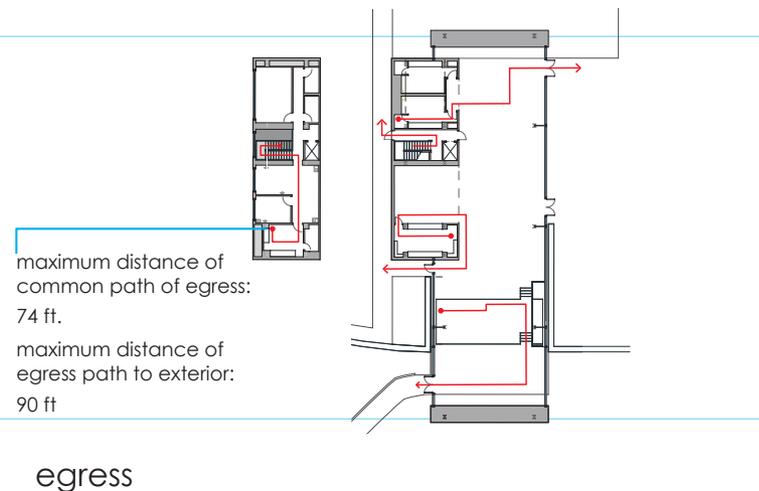
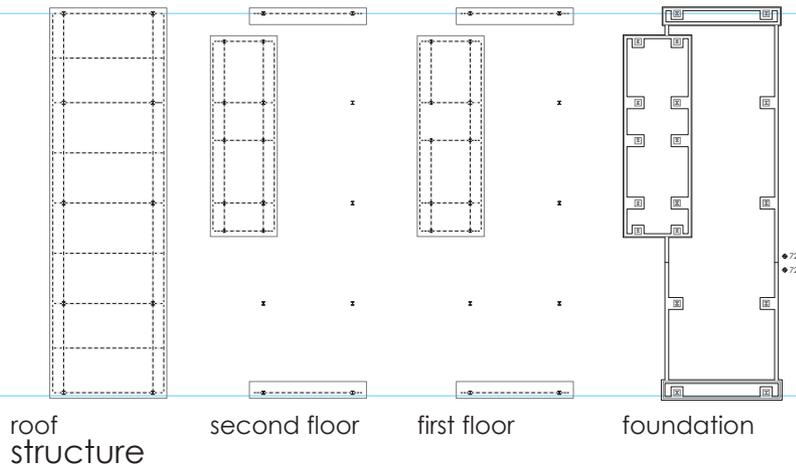


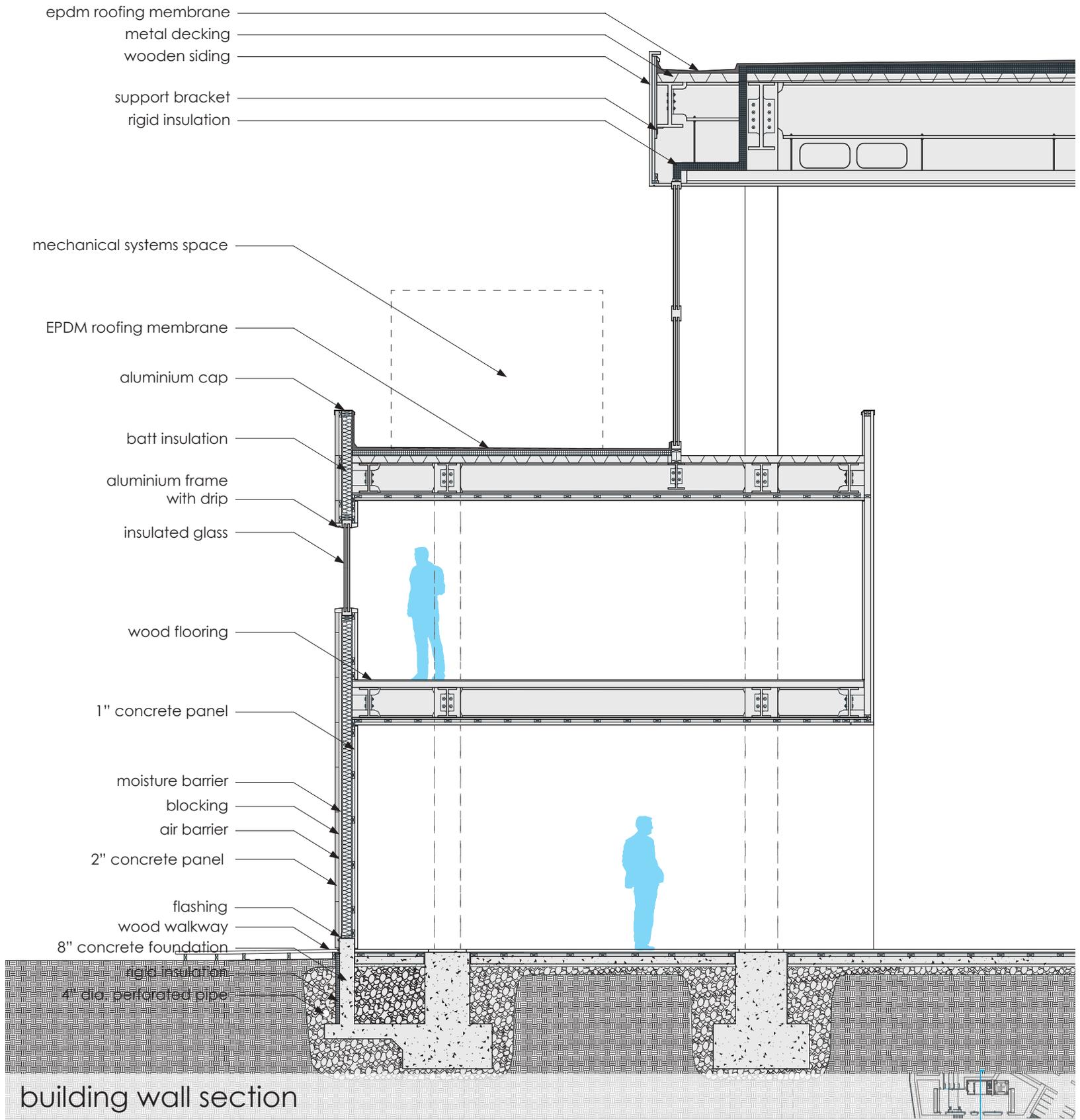


welcome building and beer garden

The proposed program was split into multiple buildings that ran along the bike path on the ALCOSAN property. This split was so that the buildings could remain at a smaller, more inviting scale. The different buildings serve different purposes that correspond to their relation to the bike path, and the wastewater treatment plant.

- 1 boathouse and dock
the boathouse and dock act as the missing connection to the ohio river, one that does not exist anywhere near the ALCOSAN plant.
- 2 education pavilions
the education pavilions work as passive education for the wastewater treatment plant, inviting park-goers the chance to sit and rest while learning about wastewater treatment.
- 3 laboratory expansion
the laboratory expansion was designed to allow the scientists at the plant work at a local laboratory, on ALCOSAN property.
- 4 welcome building and beer garden
the welcome building is a place for events and field trips that would educate large groups about the wastewater treatment plant. Also, a cafe and beer garden are on the site to appeal to commuting bikers and the local population.







Ai



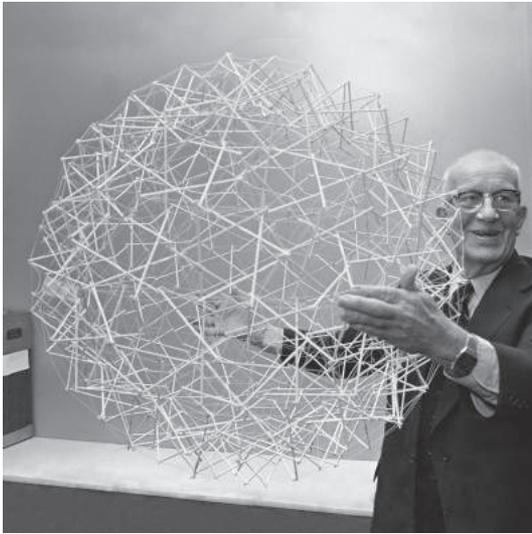
Geodesic Sphere

Professor: Eric Sutherland

Materials and Building Construction I

Fall 2012

4 Weeks

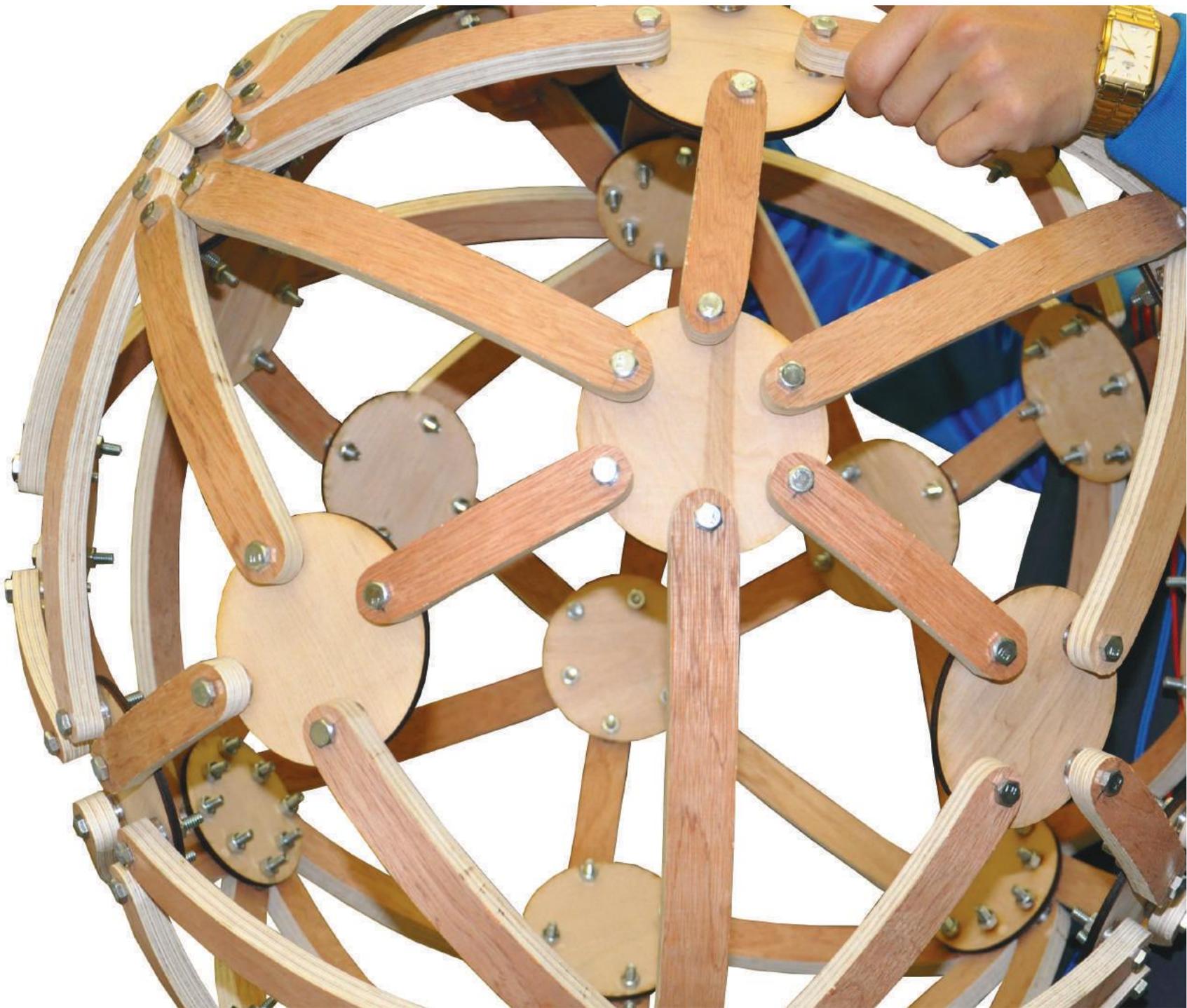


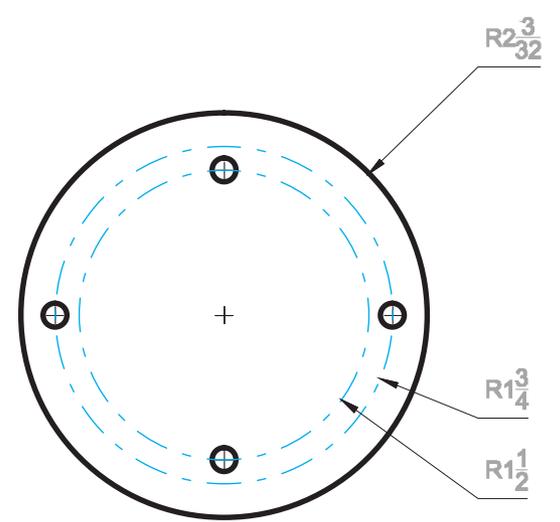
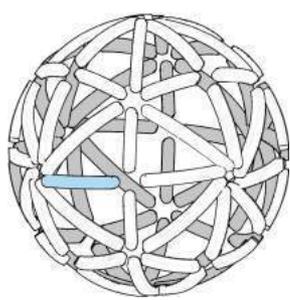
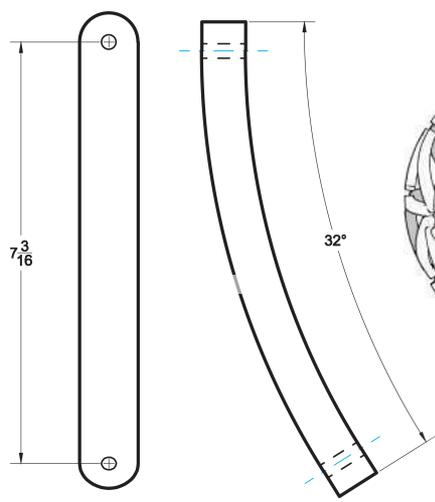
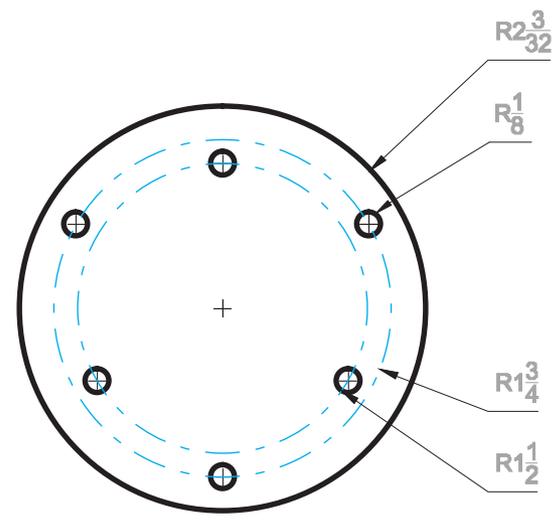
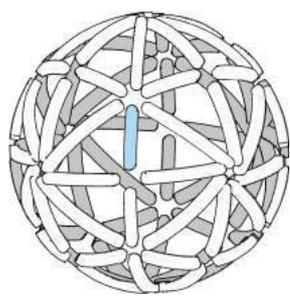
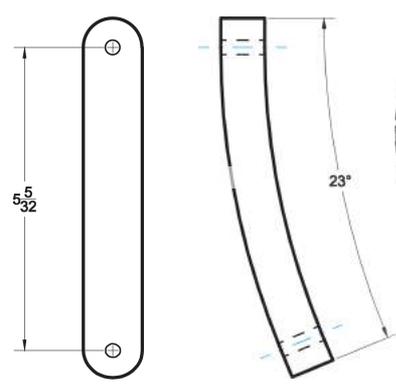
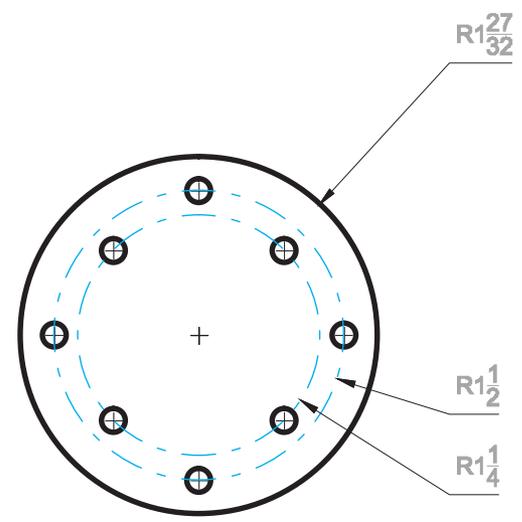
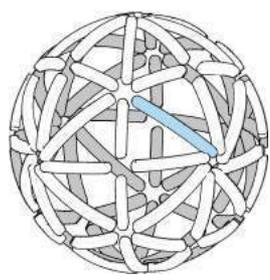
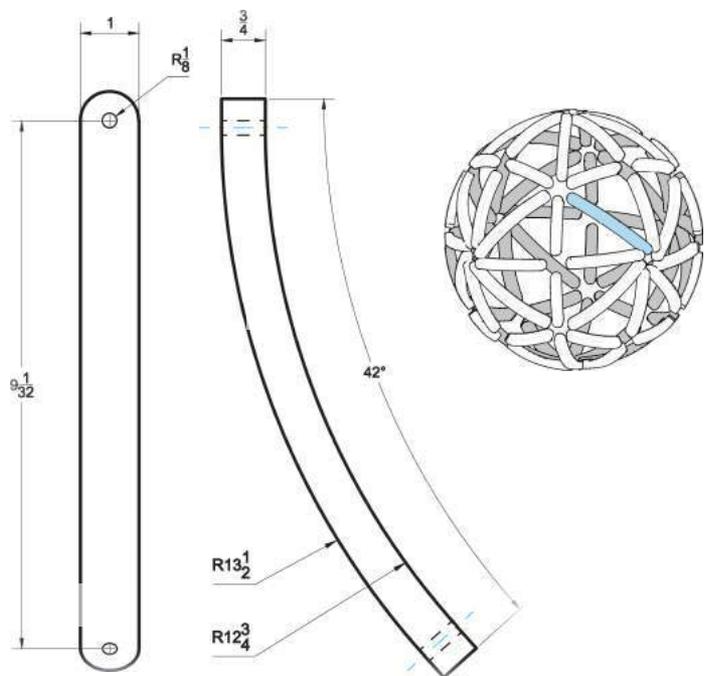
geodesic - the shortest line between two points
that lies in a given surface

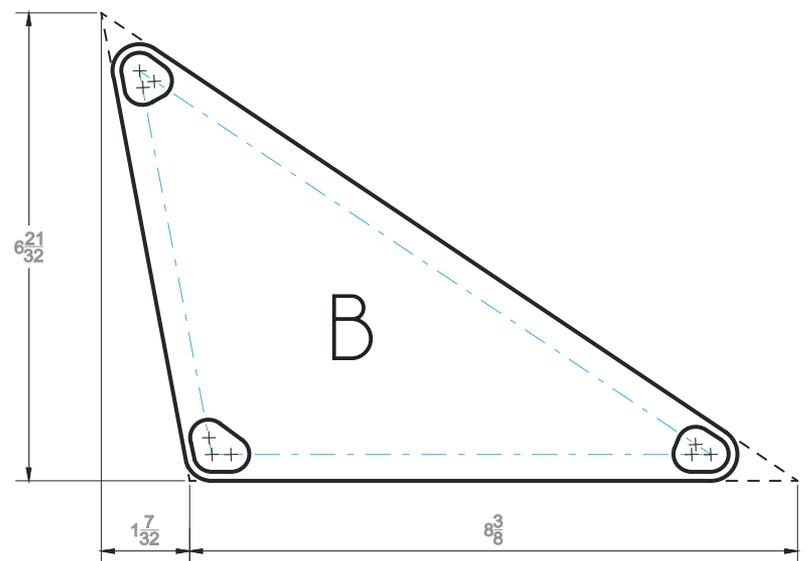
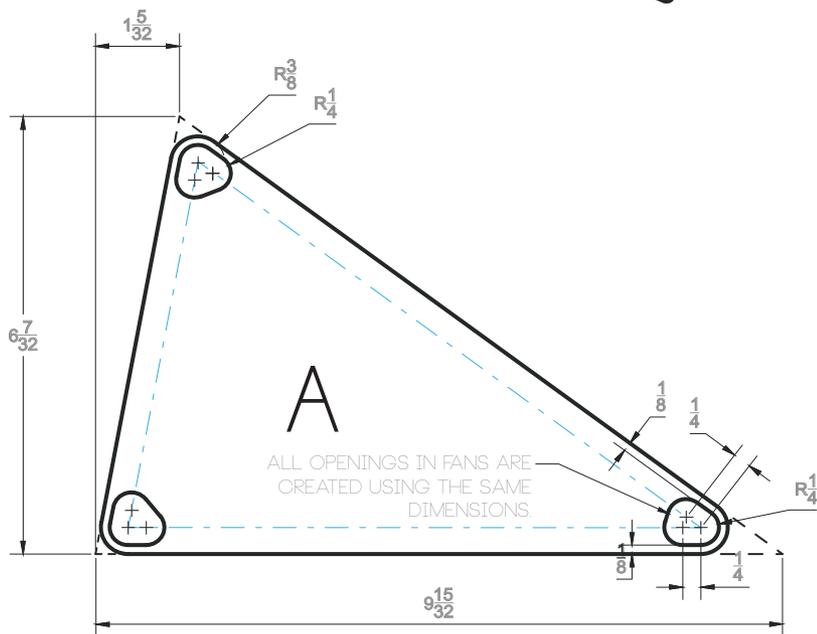
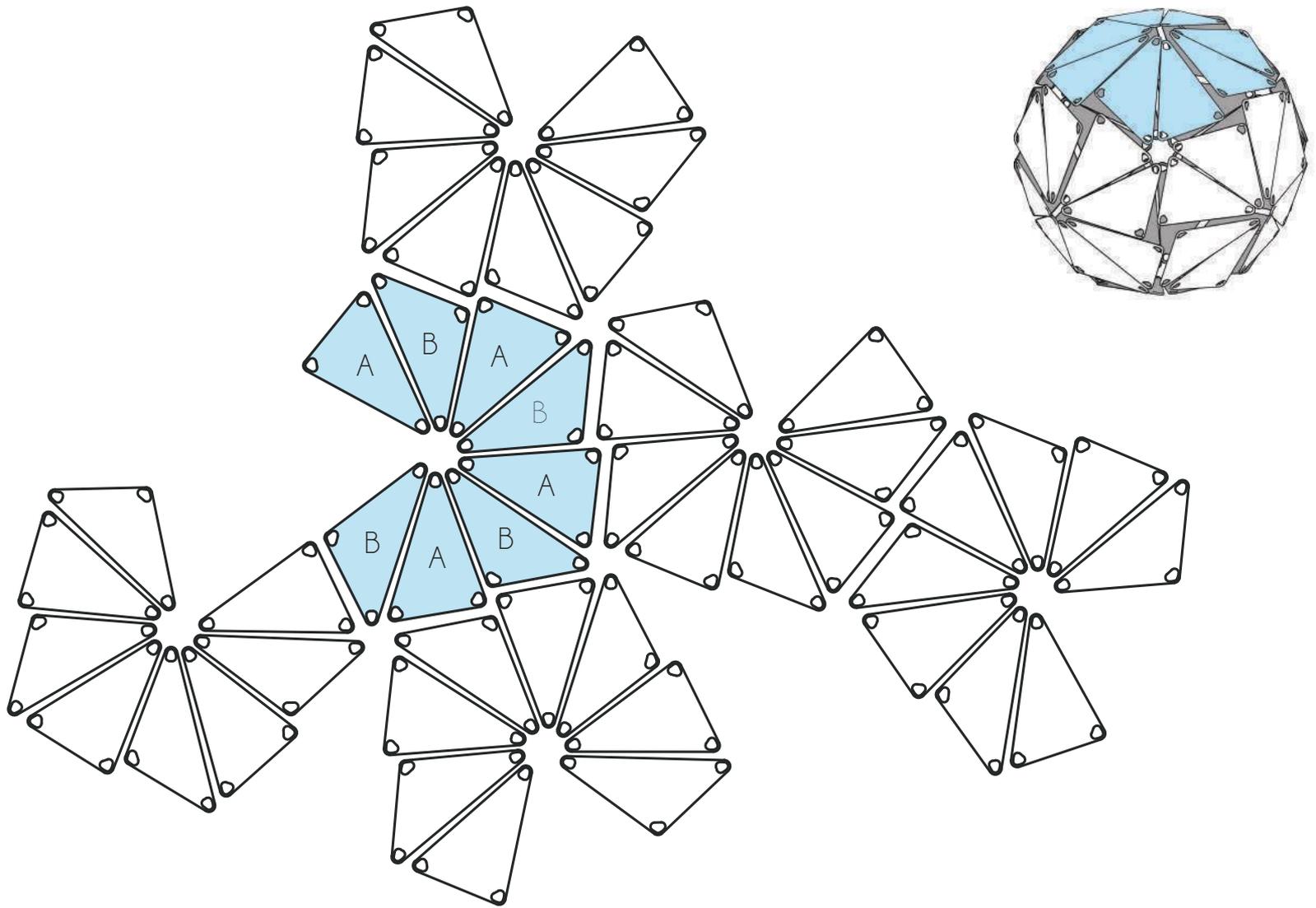
The sphere project was inspired by geodesic spheres in architecture. The sphere was to be made from individual segments of our design, being no larger than 12in x 12in. The sphere was to have a set diameter and have no internal supports. My group took the idea of geodesic in its purest form and created curved segments to form the sphere. The sphere was modeled using Autodesk Rhino to ensure the curved pieces of wood were accurate. The wooden discs and sails were created using Autodesk AutoCAD.



The sphere was formed using curved wooden pieces and wooden disks connected with metal hardware. The pieces were bent to the desired curve as to form a spherical shape. Paper sails were added later to form the facade of the sphere. The sails and disks were cut using the laser cutter.









EXIT

Brooklyn Bridge Museum

Professor: Loukas Kalisperis

Architectural Design III

Spring 2012

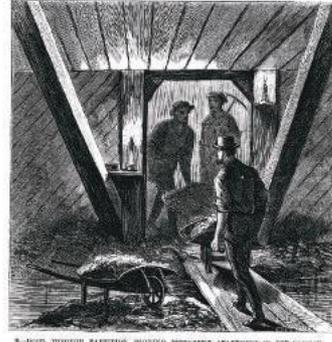
15 Weeks



1.—ENTRANCE TO THE AID-ROOM OF THE CAISSON.



2.—VIEW OF THE CAISSON AT LUN.



3.—BOYS DESTROYING PAPERING, MOVING DIFFERENT PARTS OF THE CAISSON.



4.—BURROW FOR RAIL AT THE END OF THE CAISSON.

CAISSON ETCHINGS



SITE MODEL AND PROPOSAL



PHYSICAL MODEL AND VISUALIZED CONTEXT



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