



ETHAN SEDANO

architectural design portfolio

2022

selected work

2024



ethan jose sedano

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Queens, NY IG:@sedanodesign

I am a Queens-native designer that loves to get their hands dirty, live in the details, and quickly learn from their mistakes.

All while doing the utmost to retain empathy and curiosity.

EDUCATION

RENSSELAER POLYTECHNIC INSTITUTE
Bachelor's of Architecture
Expected Graduation: May 2024

AWARDS AND RECOGNITIONS

NORMAN WAXMAN AWARD for
exemplifying the spirit of unselfish giving to
the school and institute

PRESTON H. THOMAS SYMPOSIUM
EXHIBITOR for pre-college design teaching

FOLOGRAM PUBLISHEE for co-robotic
studio design work

BEDFORD TRAVEL WORKSHOP INVITEE for
interdisciplinary design work

LANGUAGES

ENGLISH *mother tongue*
SPANISH *fluent*

EXPERIENCE

RESEARCH ASSISTANT *Jan 2024*
CASE | Remote *-Present*

RESEARCH ASSISTANT *Jan 2023*
RPI | Troy *-June 2023*

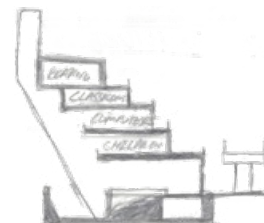
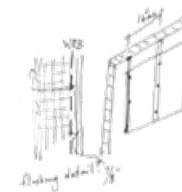
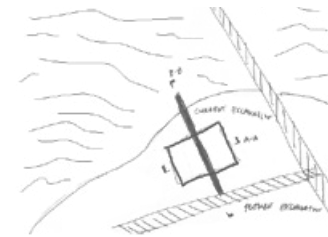
FREELANCE CAD DRAFTER *Aug 2022*
Multiple Clients | Remote *-Present*

COMPETITIONS

NOMAS COMPETITION 2024 *ongoing*
VOLUME ZERO TINYHOUSE 2023 *submitted*
NOMAS COMPETITION 2023 *submitted*

SOFTWARE

RHINOCEROS 3D *fluent*
ADOBE ILLUSTRATOR *fluent*
ADOBE PHOTOSHOP *fluent*
ADOBE INDESIGN *fluent*
GRASSHOPPER *proficient*
KARAMBA 3D *beginner*



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TRENCHES

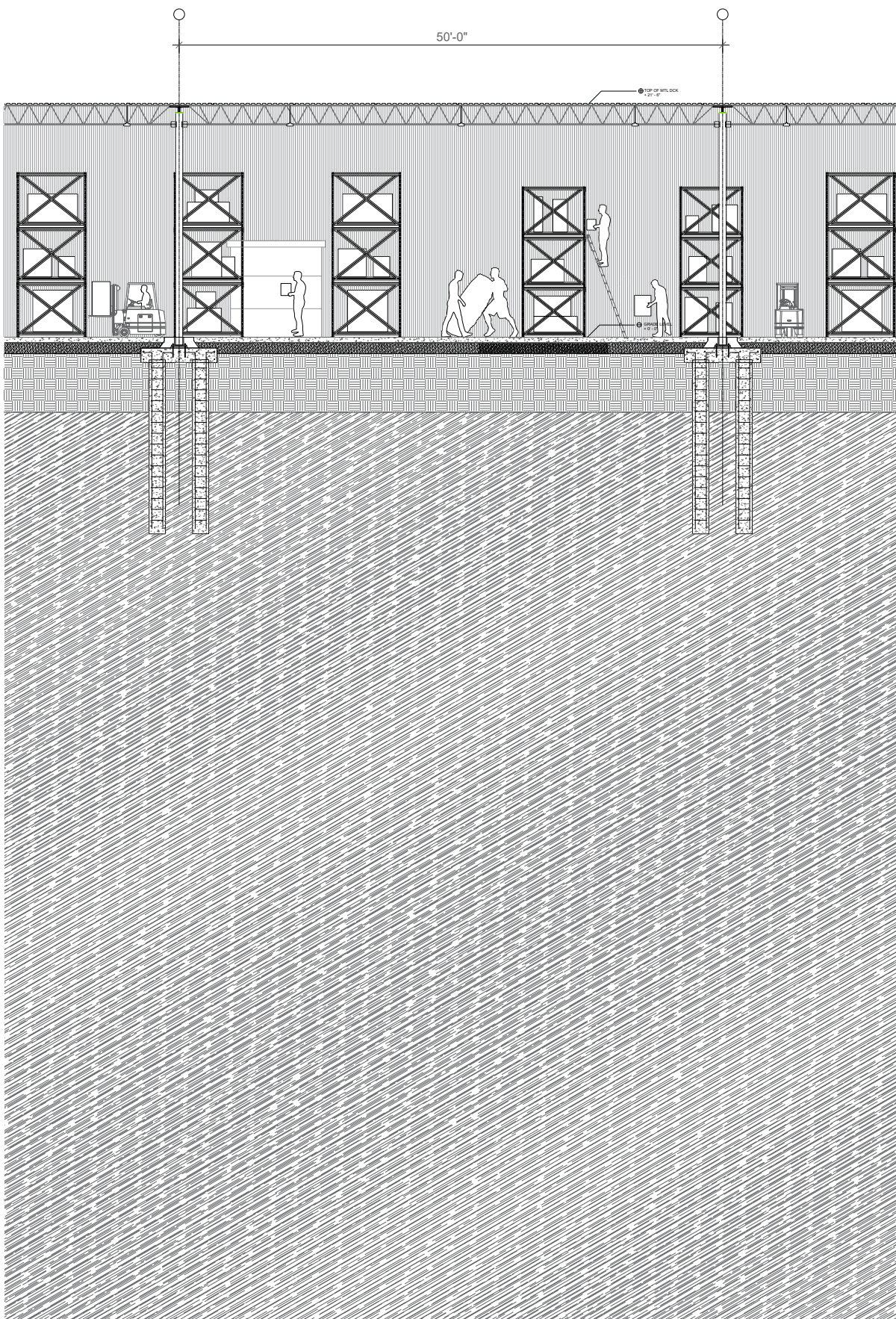
A speculative proposal of sanctuaries and future ruins for Key West's coral reefs and marine life.

Year : 2023
Location : Key West, Florida
Professor : Riley Studebaker
Course Assistant : Owen Lawler
Project Partners : Emerald Gunawan, William Carlisle

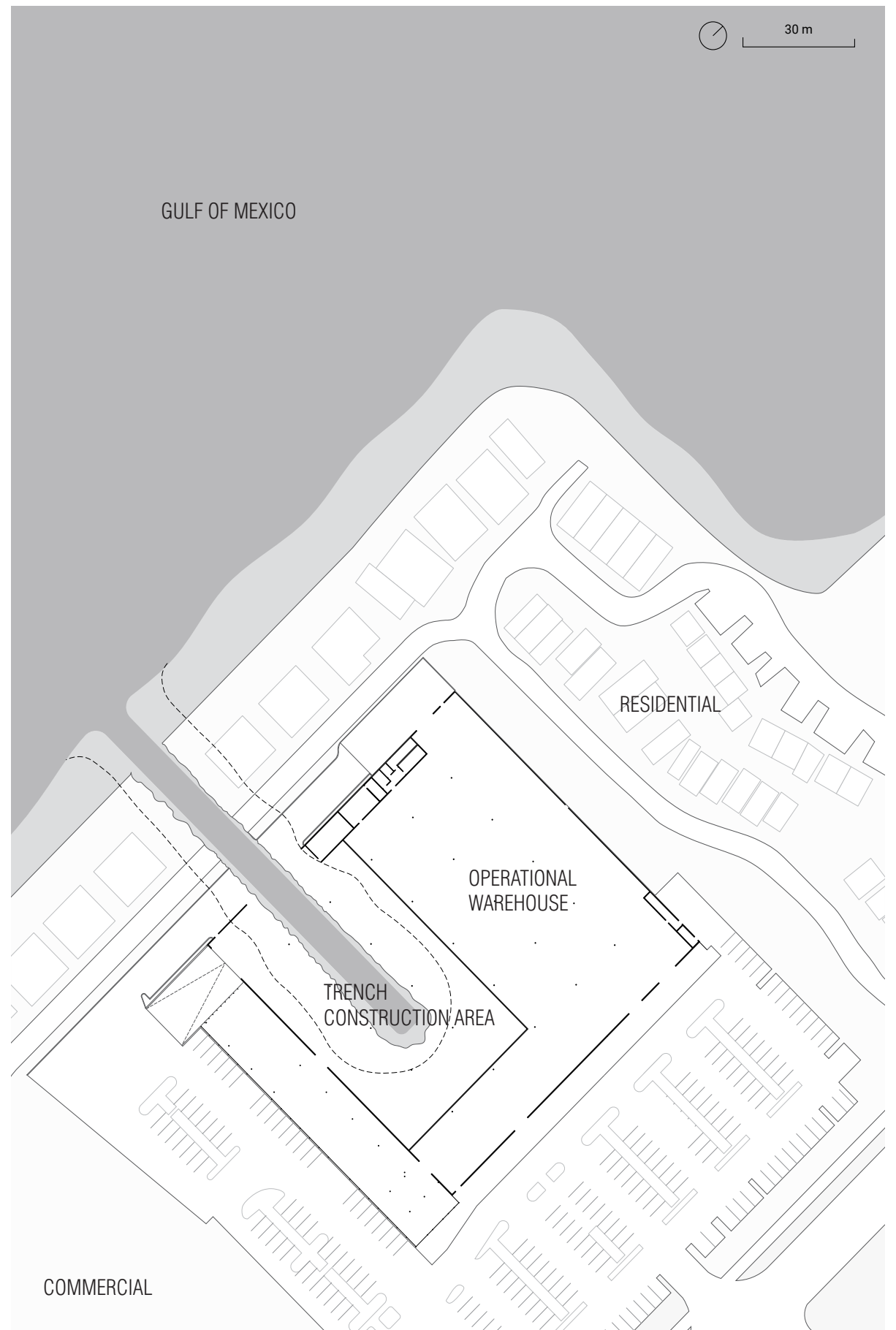
ABSTRACT

As the climate crisis worsens, insurance companies have pulled out from the state of Florida due to its vulnerability to rising sea levels. Key West, Florida will be one of the first areas impacted by sea level rise with its main roads being projected to be underwater as soon as 2025, according to the Miami Herald.

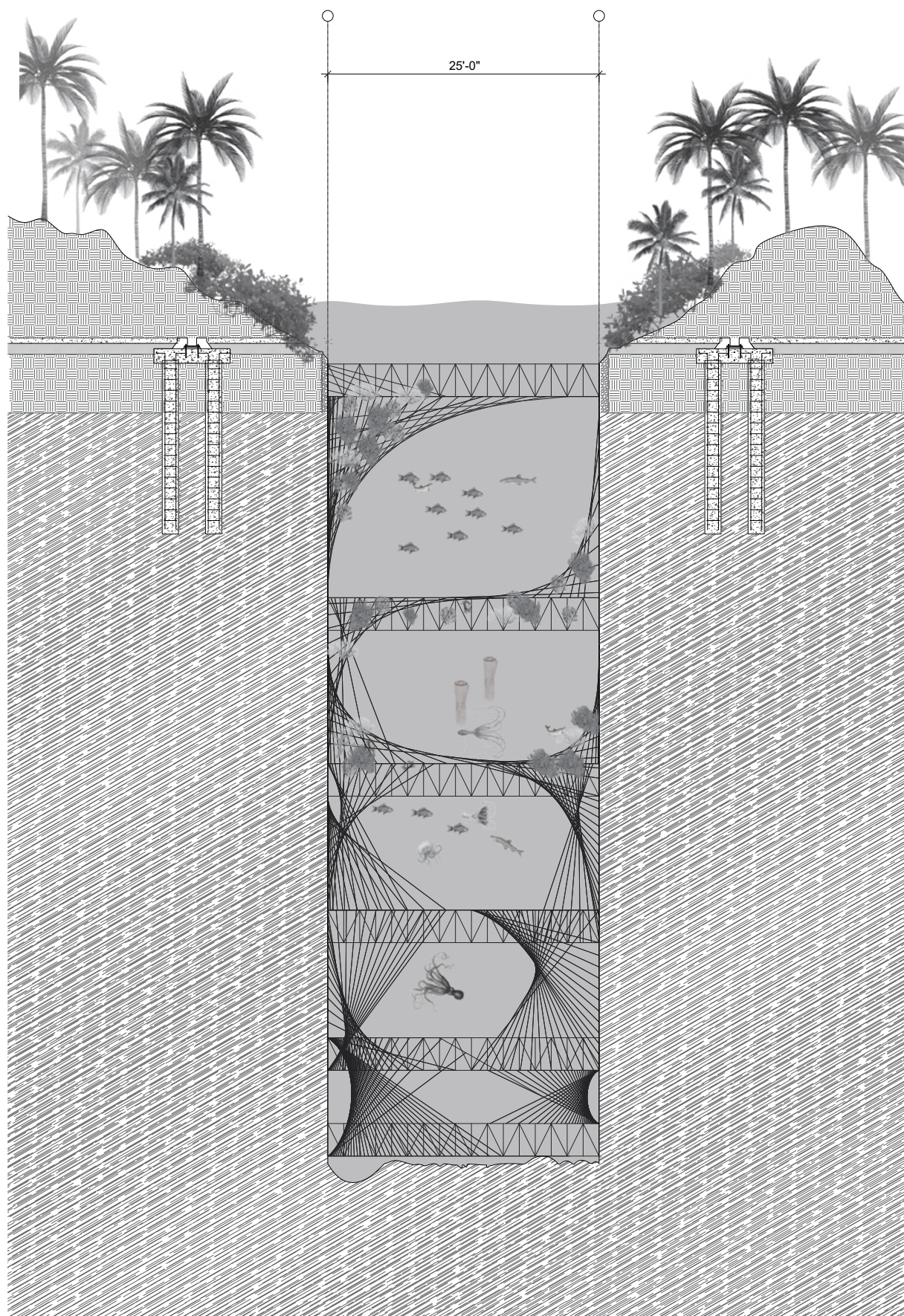
Our proposal takes advantage of this unfortunate opportunity to occupy a soon-to-be abandoned warehouse and create a trench sanctuary for marine life and coral. 7-axis robot arms, autonomous excavators, human and co-robotic fabrication are used to convert the structure of the warehouse into the shoring, or reinforcement, for the excavated walls of the trench sanctuary. What was once a storage building for construction materials, tools, and furniture, will become a habitat for marine life.



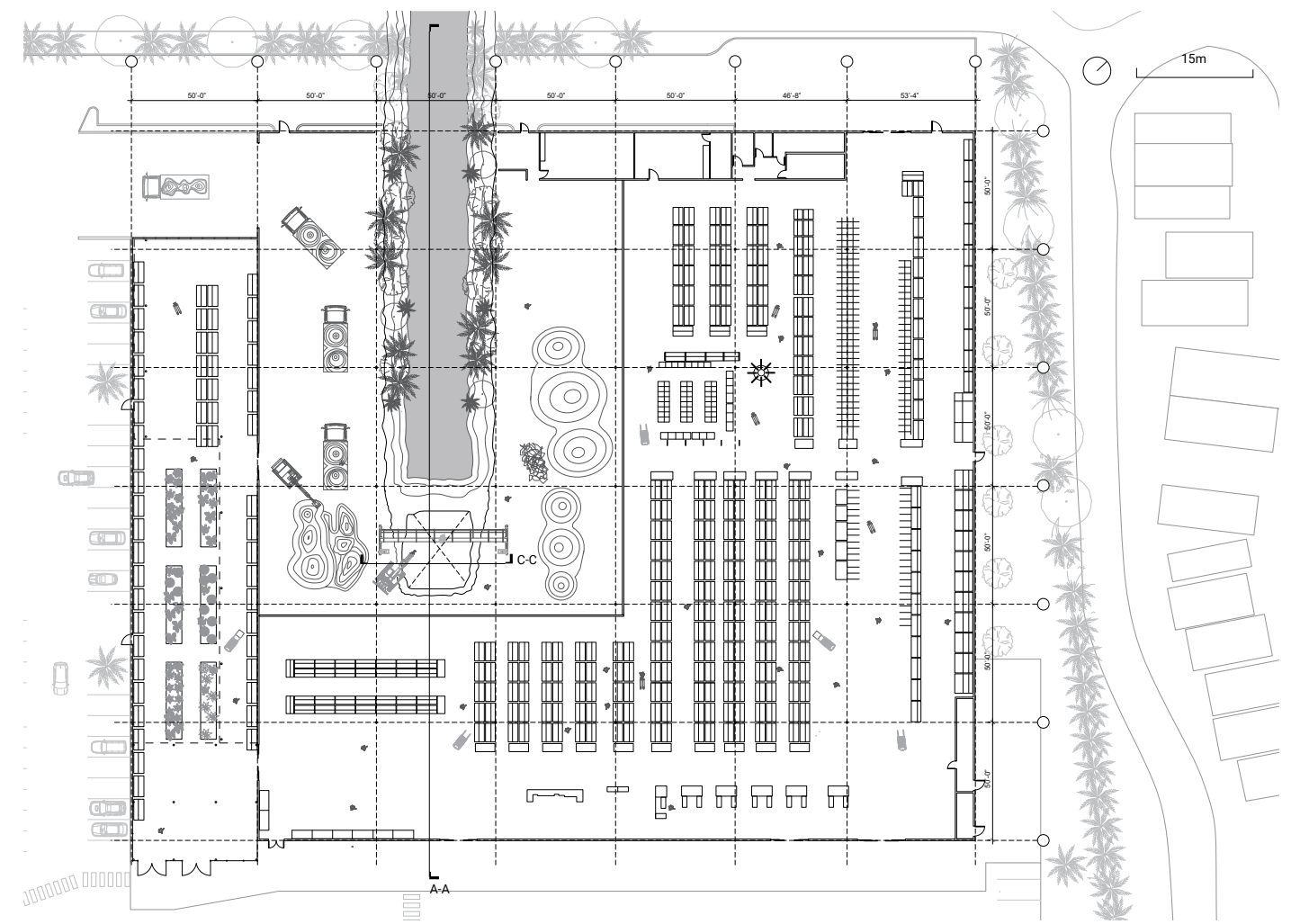
section through warehouse in 2023



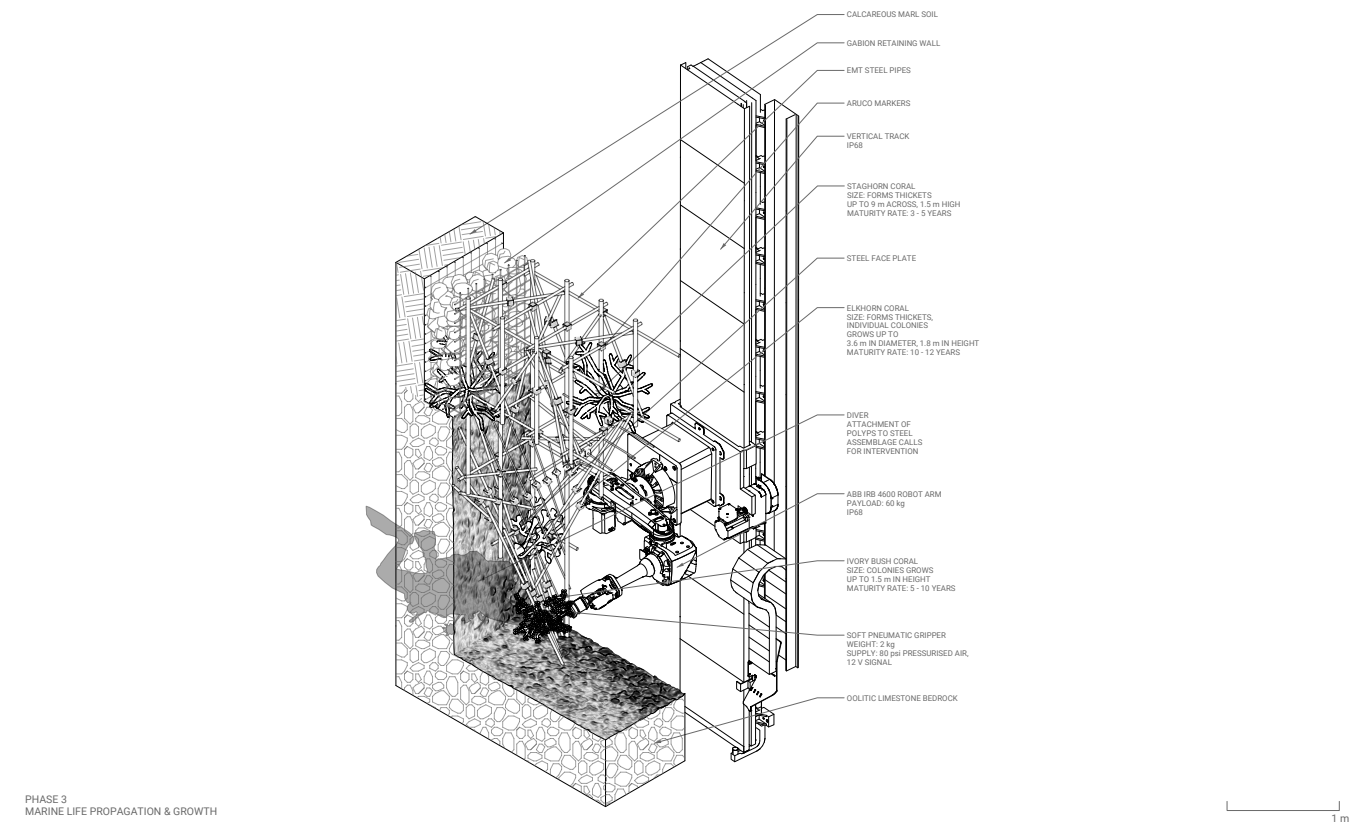
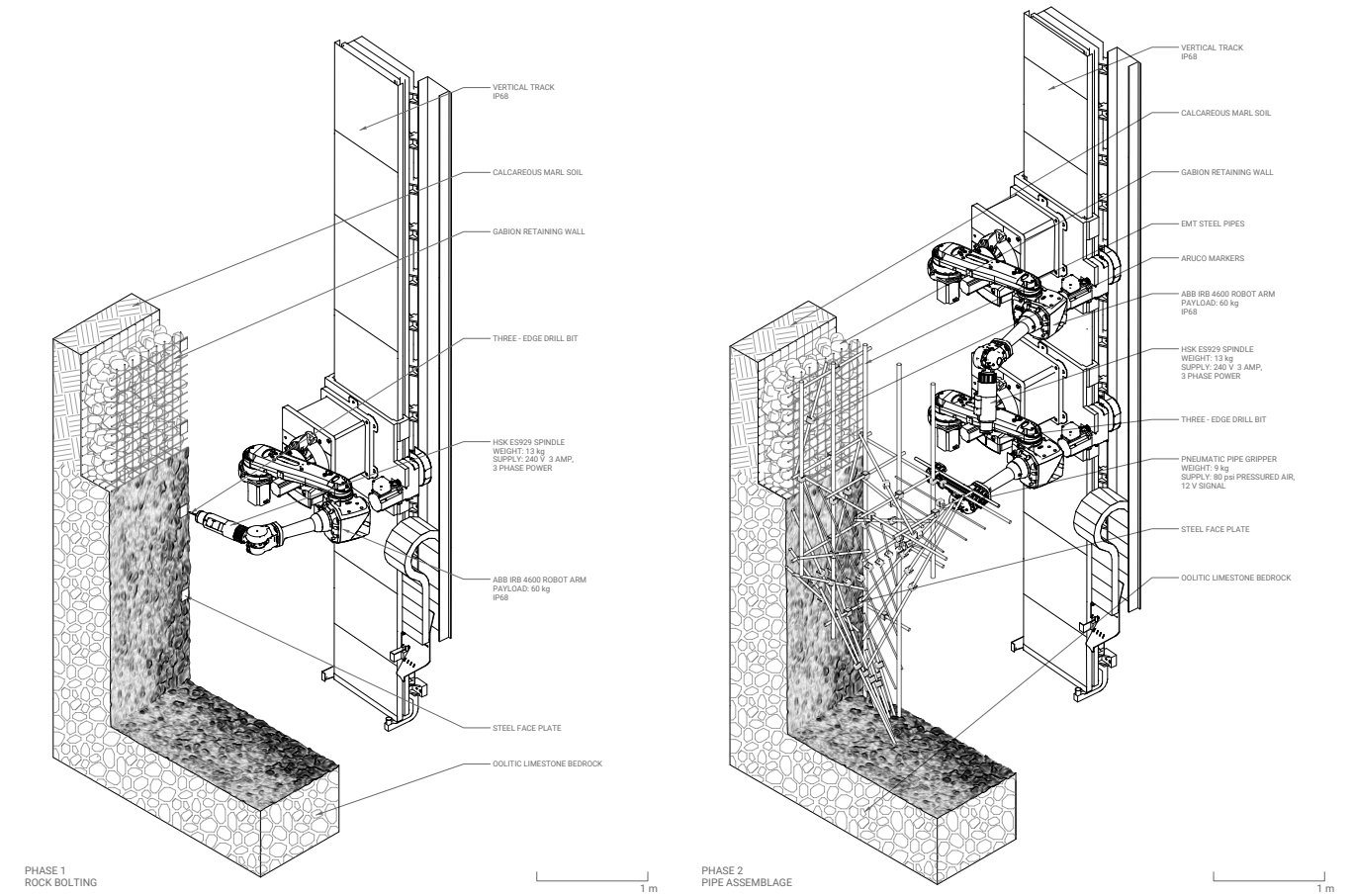
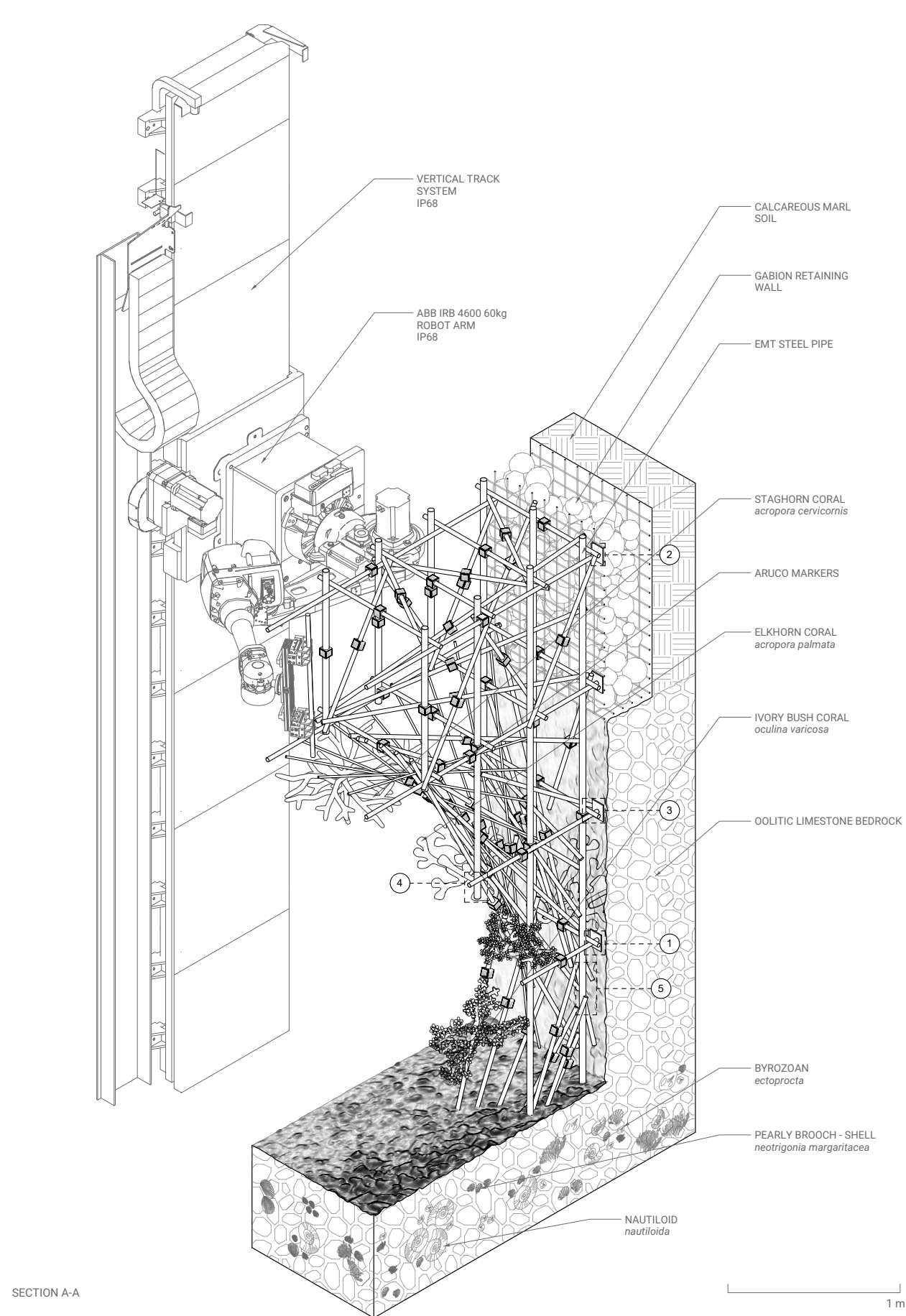
2035 site plan



section through trench in 2050

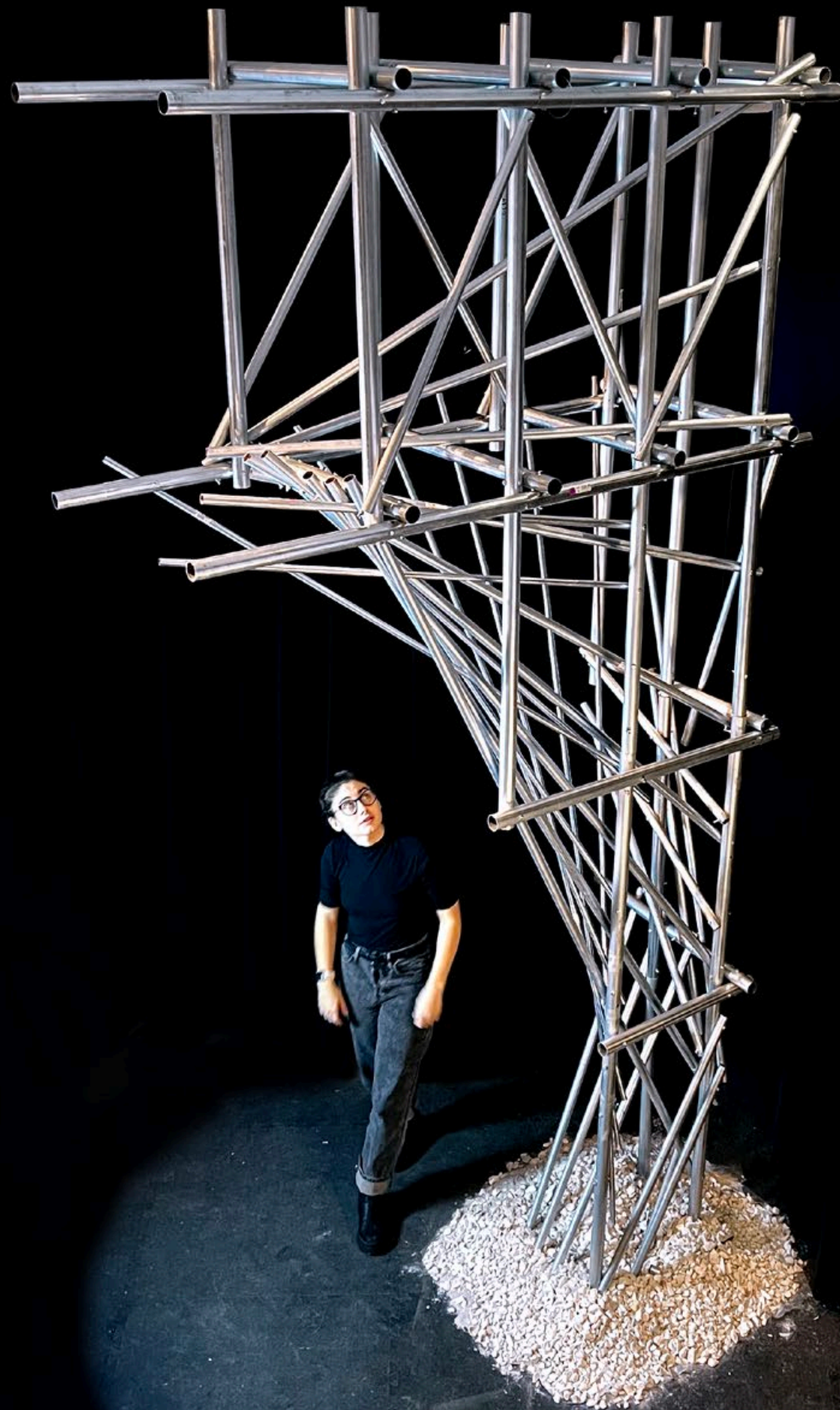


2050 warehouse plan

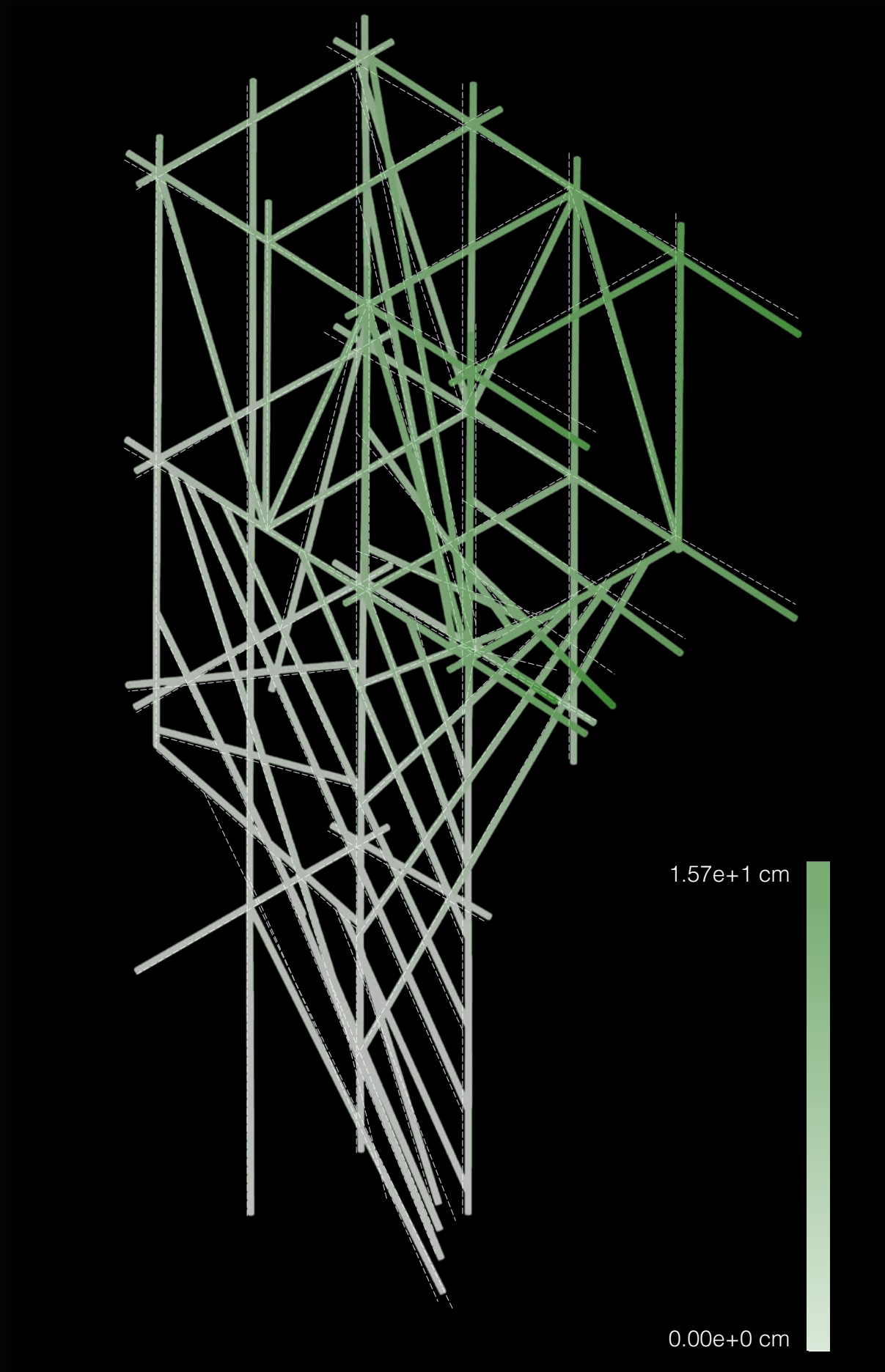


isometric of robotic assembly

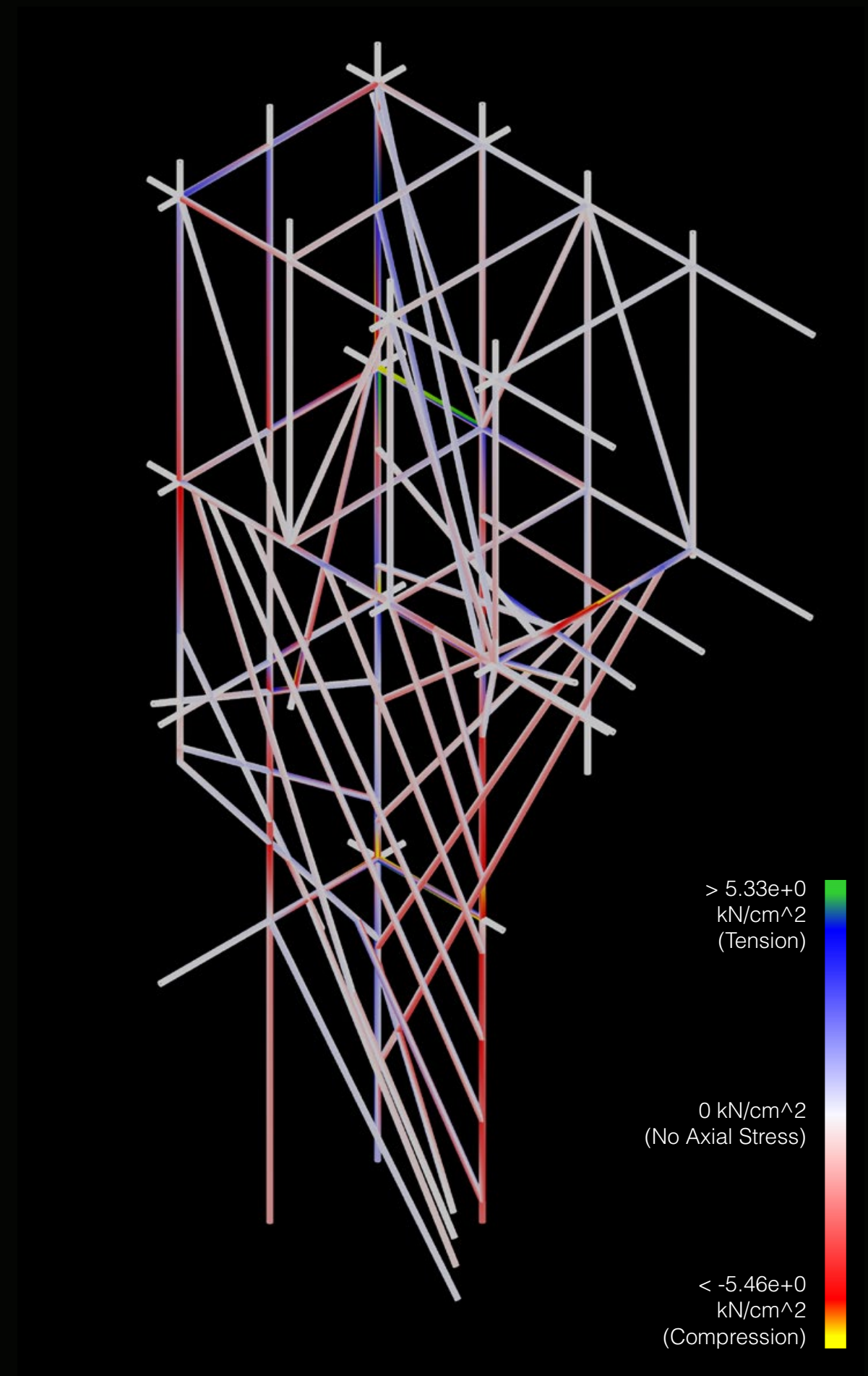
speculative phases of fabrication



drone shot of steel prototype



karamba3d displacement analysis



karamba3d axial load analysis

FLUX

An adaptive reuse of previous church property and grounds for refugee and immigrant services and programs.

Year : 2023

Location : Albany, New York

Professor : Matthew Burgermaster

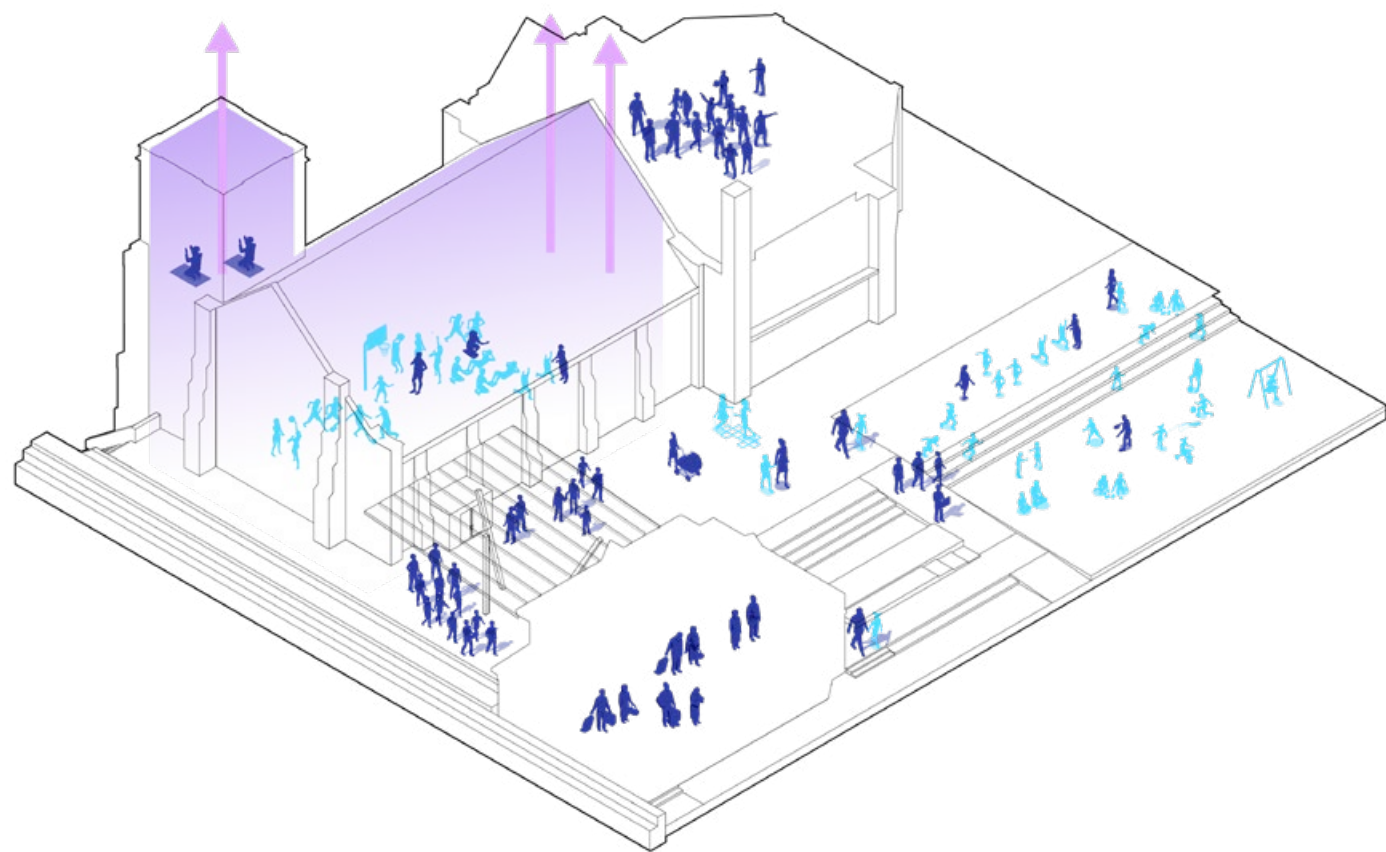
Project Partners : Yuselbio Novas, Megan Ung, Elyssa Yonta

ABSTRACT

RISSE (Refugee and Immigrant Social Services of Emmaus) is constantly growing and changing with the community it serves. These changes are part of their client's immigration and resettlement experience, as well as part of their buildings alteration over time.

For this reason, our design recognizes that life requires flexibility - that buildings, like people, are a part of a larger transitional process. Our overall site design unifies the currently disjointed complex by framing a series of open and open-ended "flux" spaces. The new site becomes a terraced plaza for both children and adults to use and enjoy the outdoors. We redesigned RISSE's interior to include more open floor spaces and vertical circulation cores which allow for a smoother flow of people, light, and wind.





concept drawing



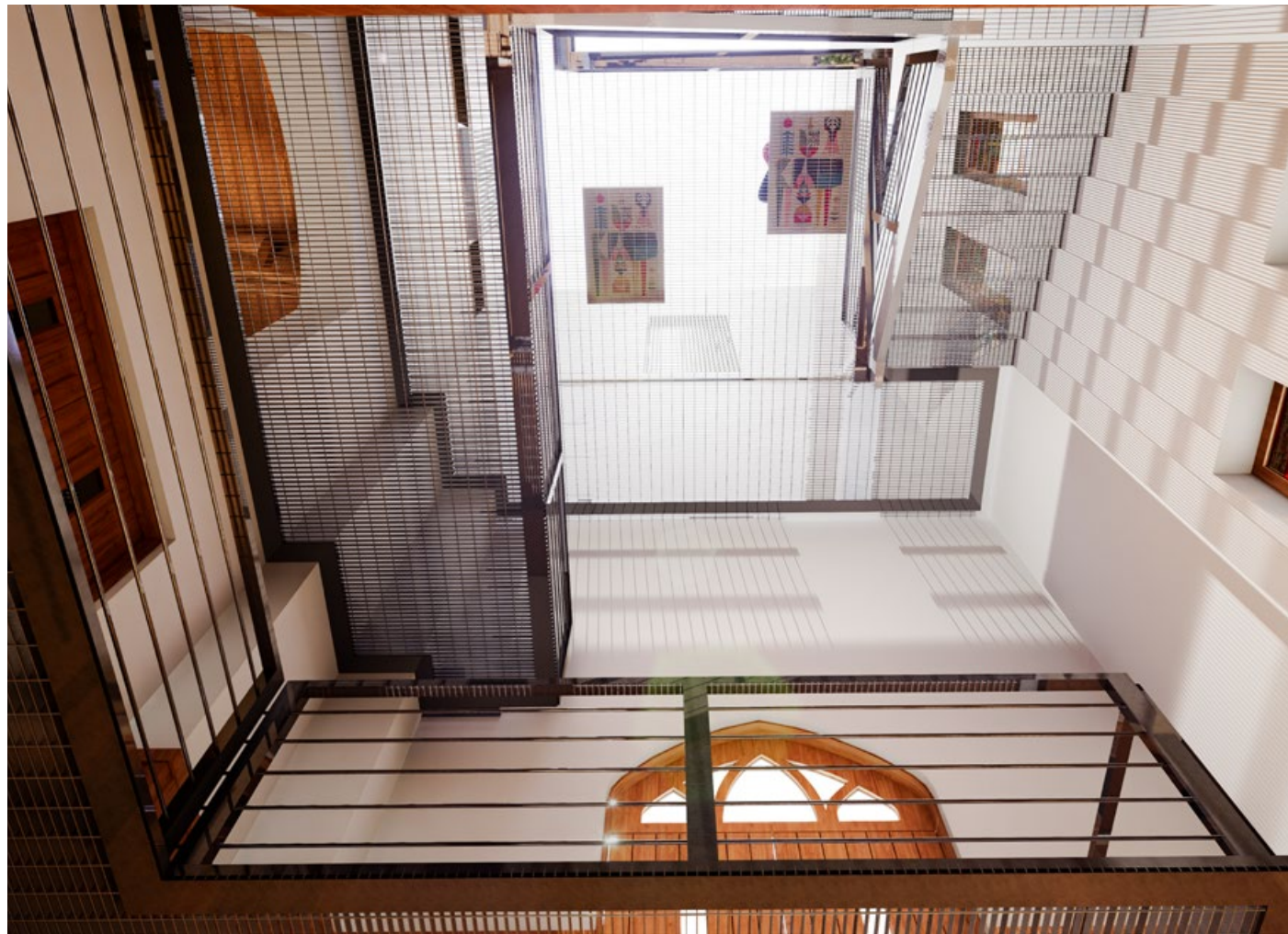
axonometric of proposal



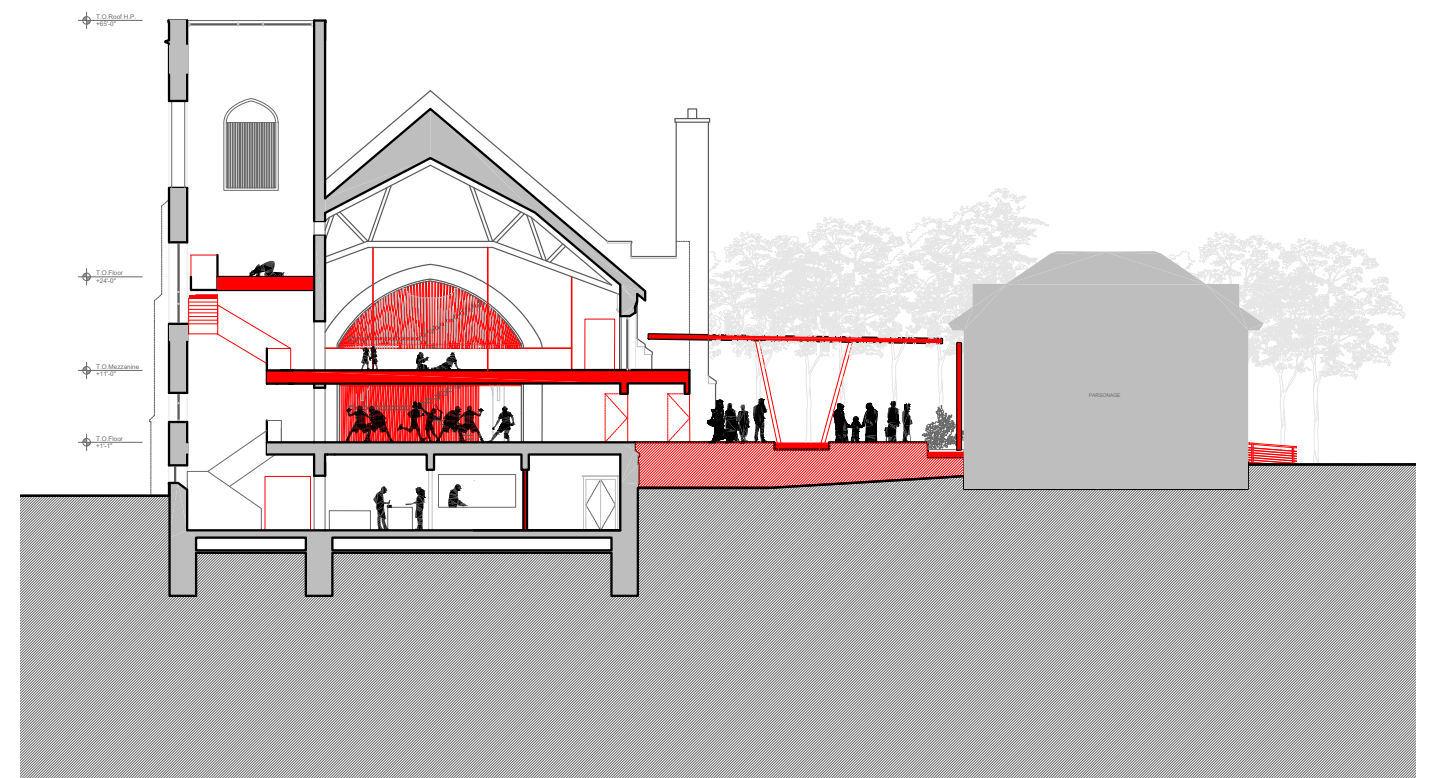
plan of proposal



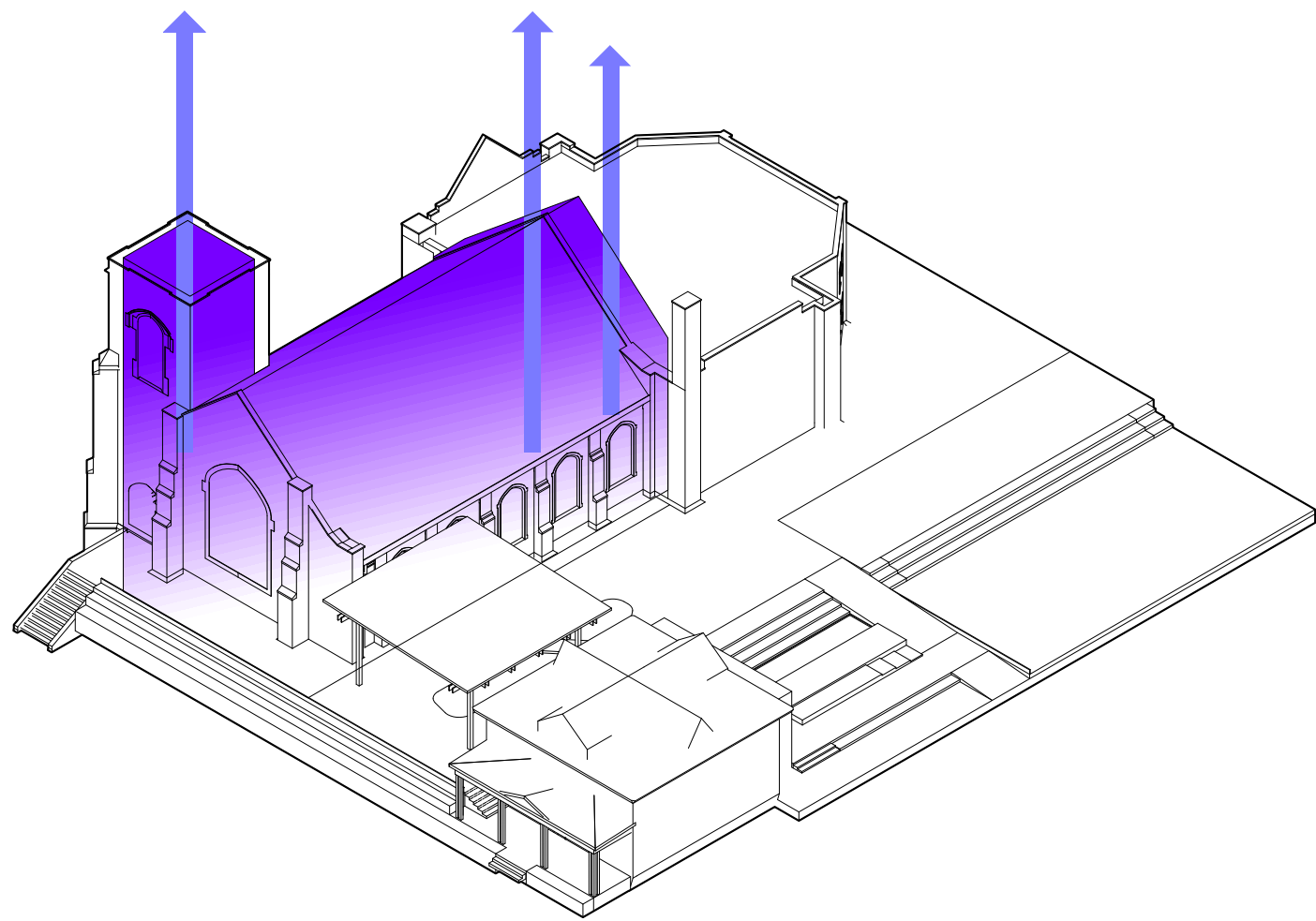
view from Yates Street



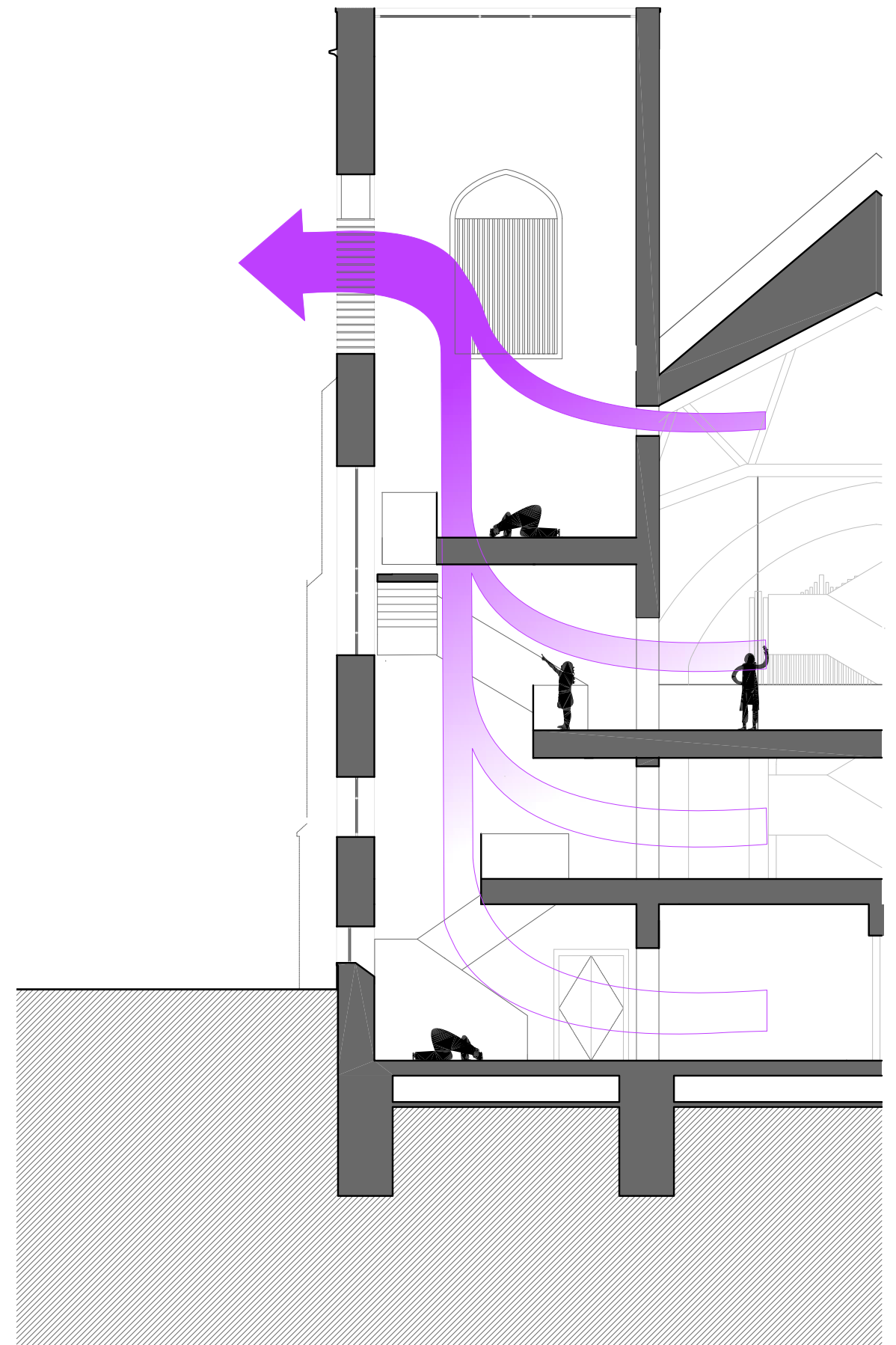
interior view of adapted belltower



cross section through adapted belltower



natural ventilation diagram



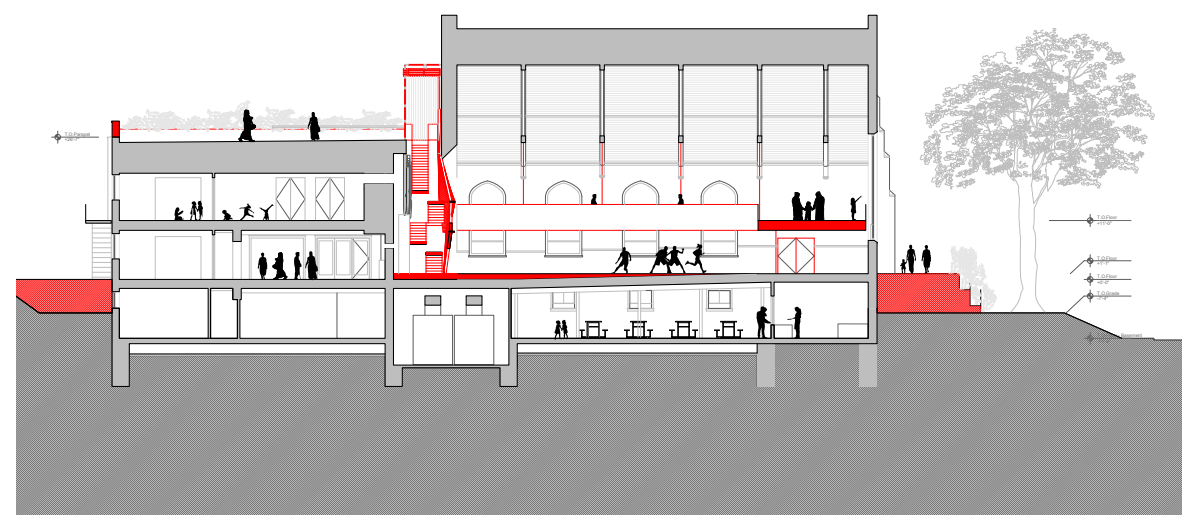
schematic of air flow within solar chimney



interior view of staircase



interior view of sanctuary



transversal section through church

SLIDE TO WORK

TinyHouse Design Competition

Year : 2024

Location : *Mobile Home*

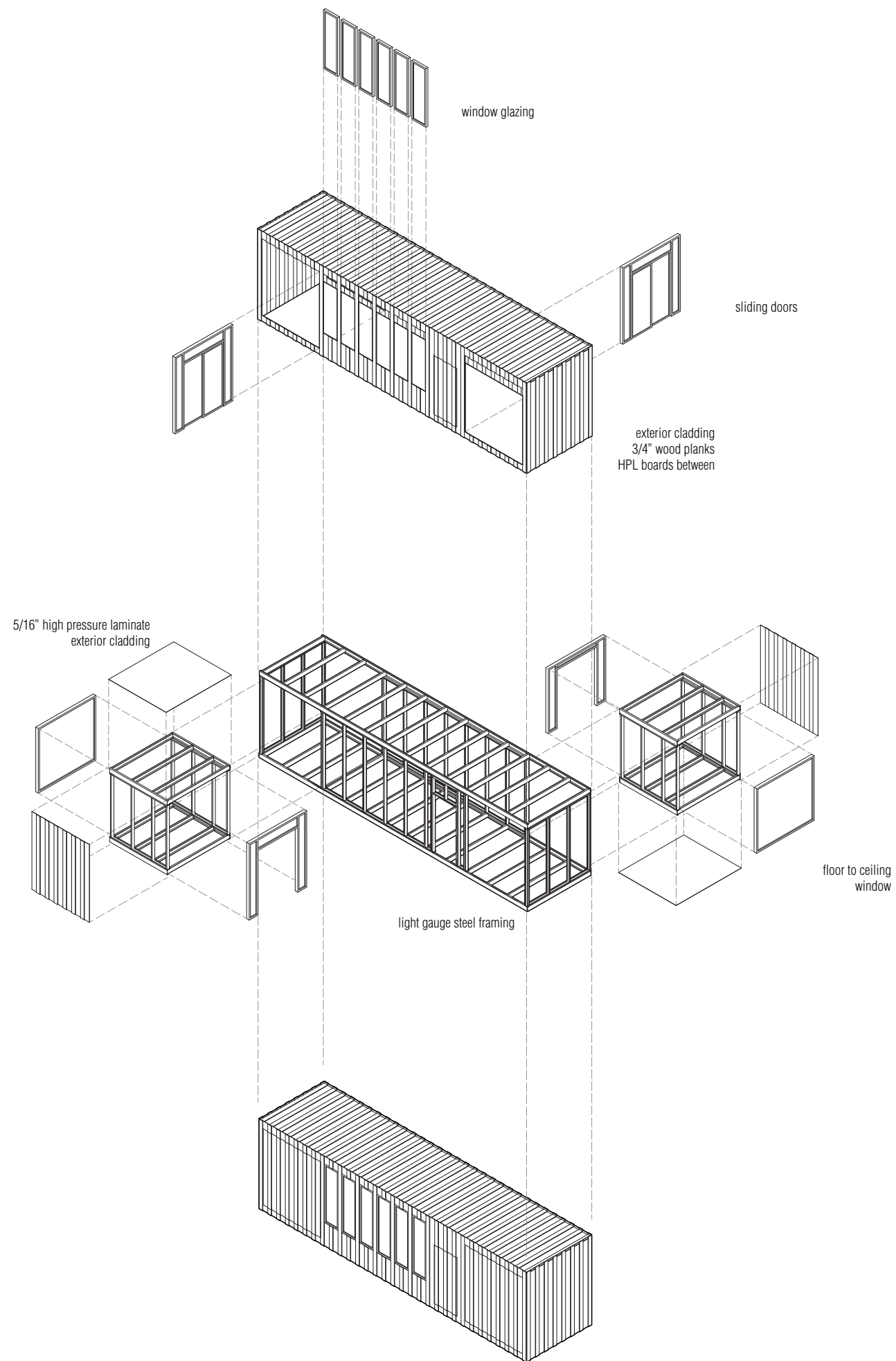
Teammates : *Chantal Celis, Daniel Cureno*

Competition Host : *Volume Zero*

ABSTRACT

"Slide to Work" delves into the paradox of home as a workspace and expresses this duality in a tangible architectural form. The project is driven by the recognition that the modern lifestyle demands adaptability, where the home can seamlessly transition from a place of relaxation to a professional workspace. The key concept revolves around creating a clear separation between work and home through a mobile unit that can expand and contract its retaining volumes. By incorporating a horizontal slide rail, the workspace extends outward, establishing a distinct boundary between the living and working areas. This dynamic design approach not only facilitates a dedicated work environment but also promotes a new way to imagine the home as a place of communion. The innovative design separates the workspace and also provides flexible space for recreation for both family and loving customers through its adaptable orientations of form.

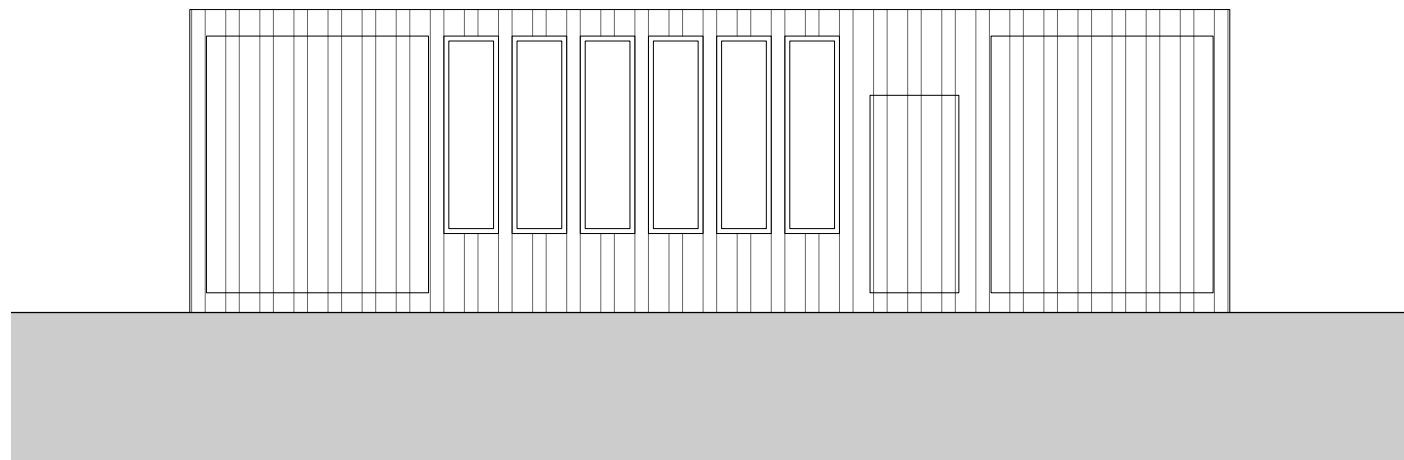




exploded diagram

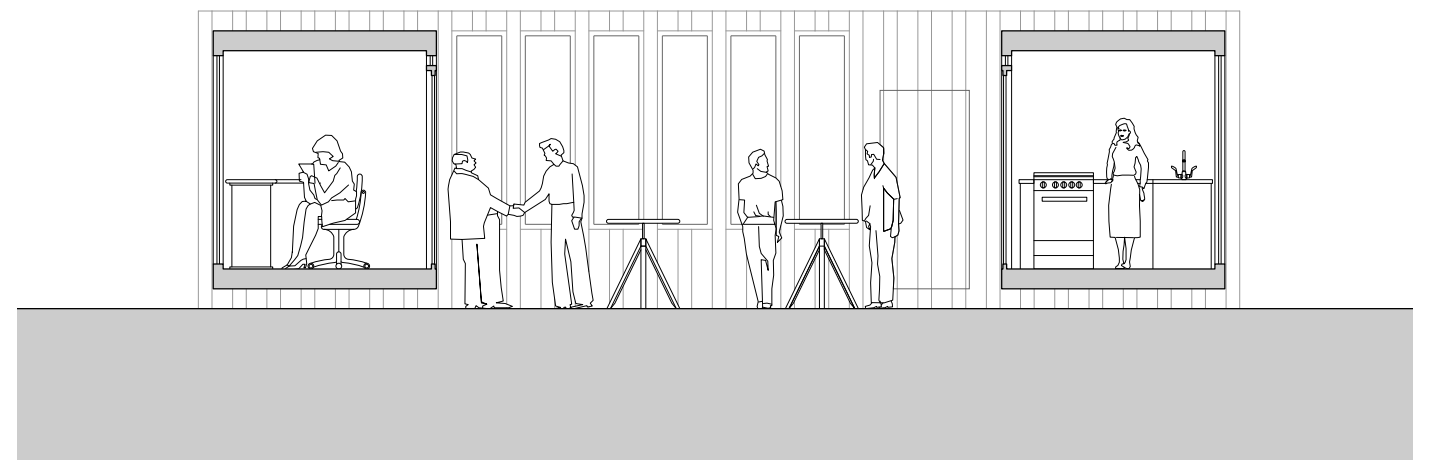


closed orientation



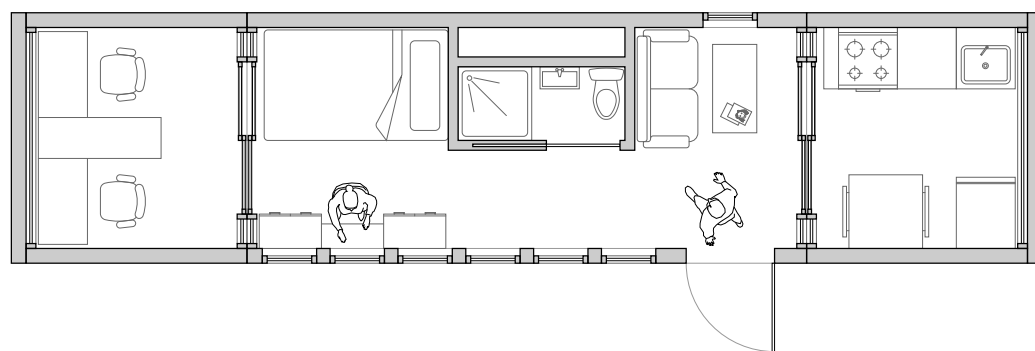
3ft 

closed elevation



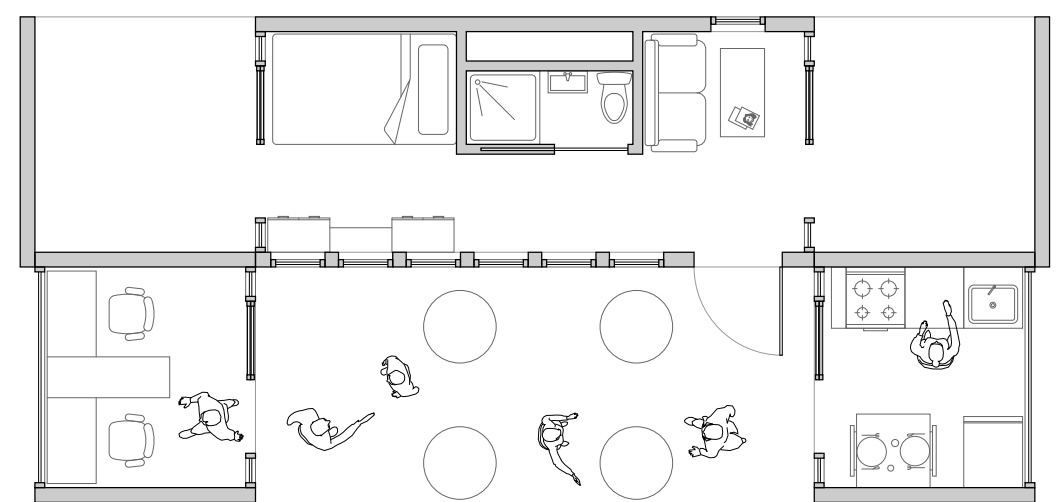
3ft 

opened section



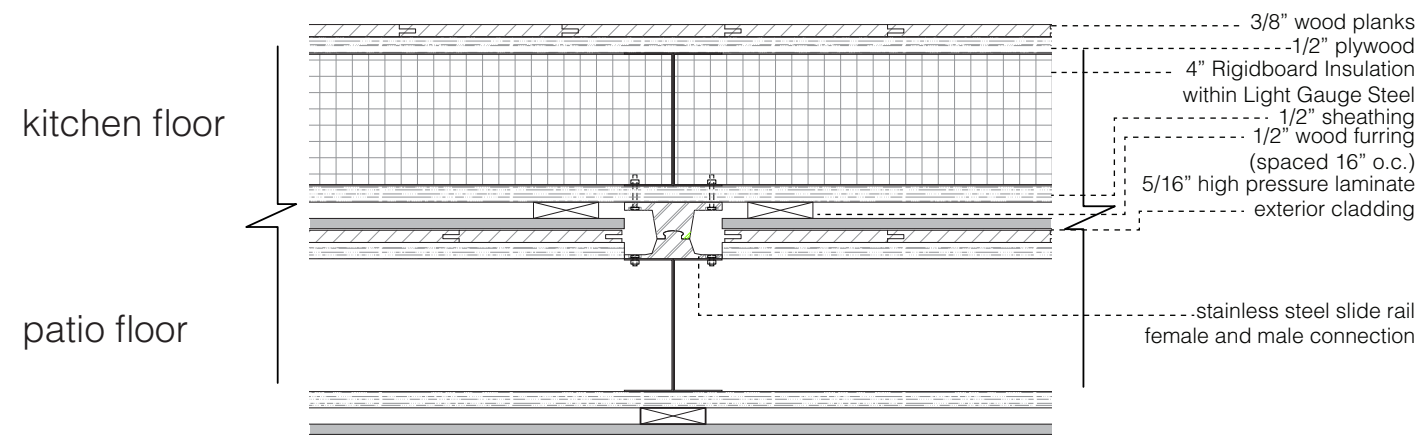
3ft 

closed plan



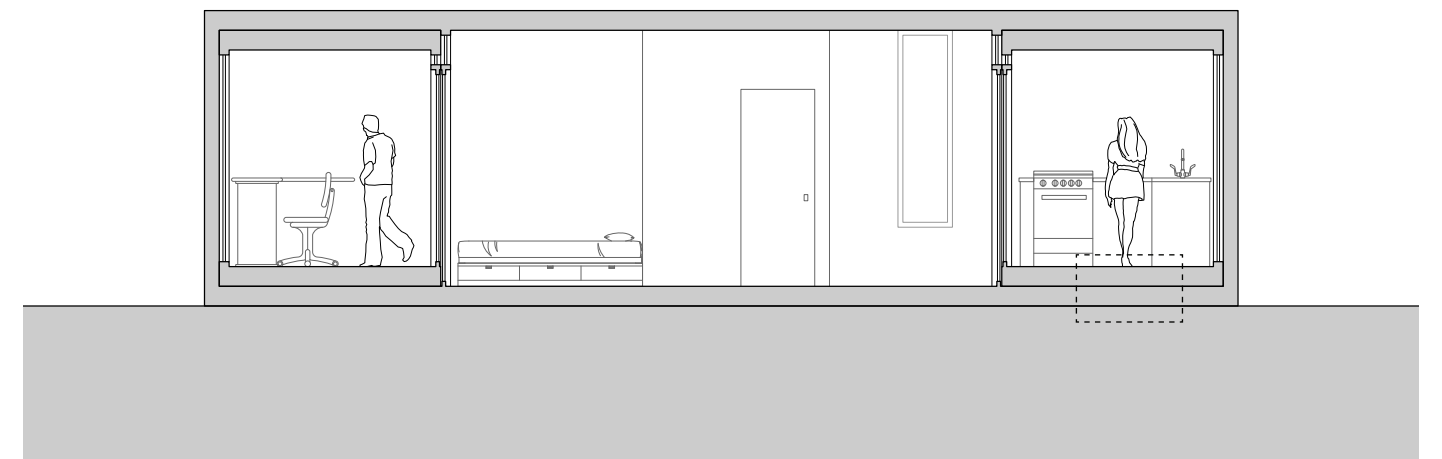
3ft 

opened plan



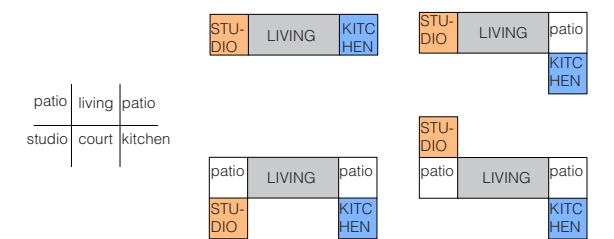
3in

slide rail detail



3ft

closed section



parti diagrams

316 DIXWELL

Case Study of Wall Assembly with CLT

Year : 2022

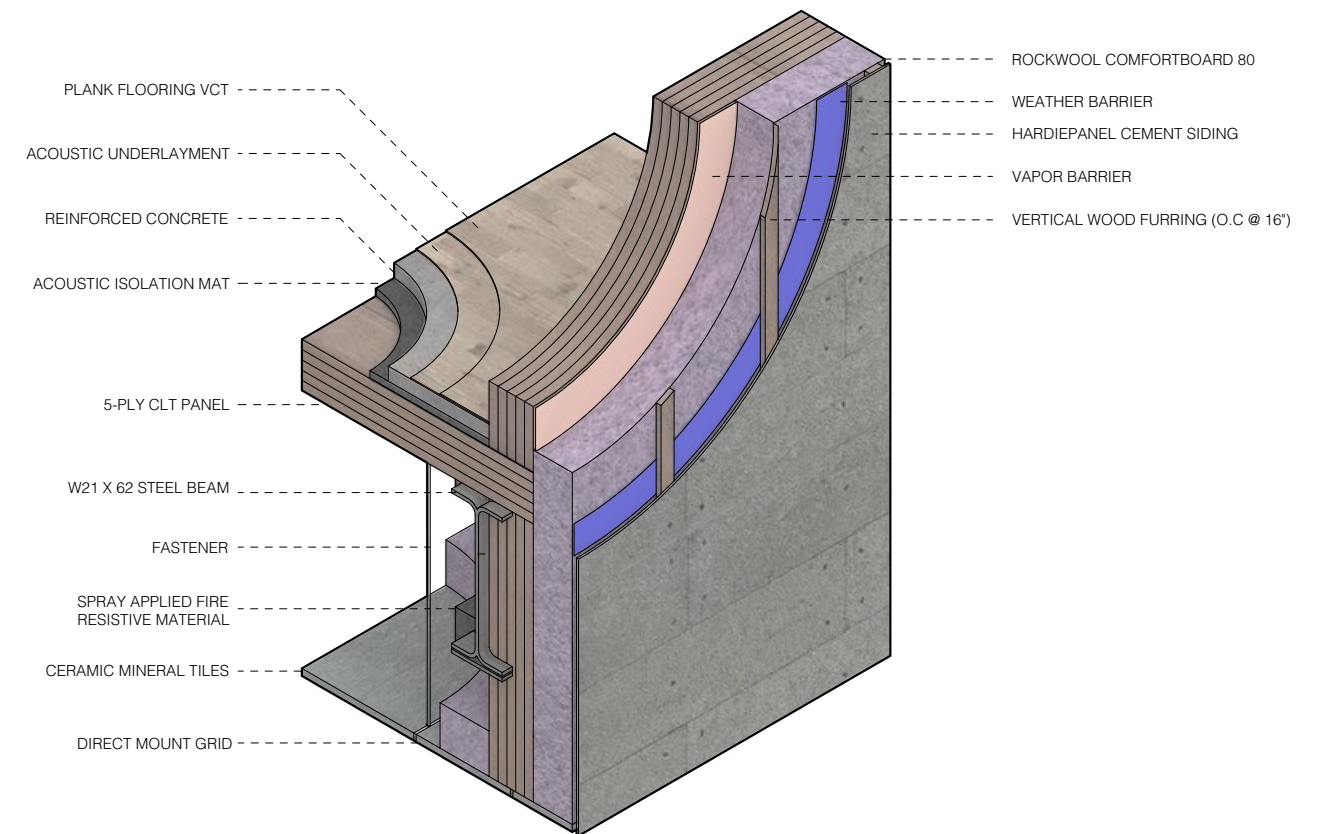
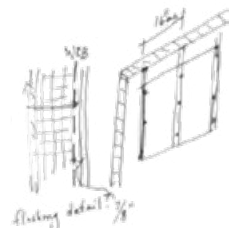
Location : 316 Dixwell - New Haven, Connecticut

Professor : John Loercher, Arta Yazdanseta

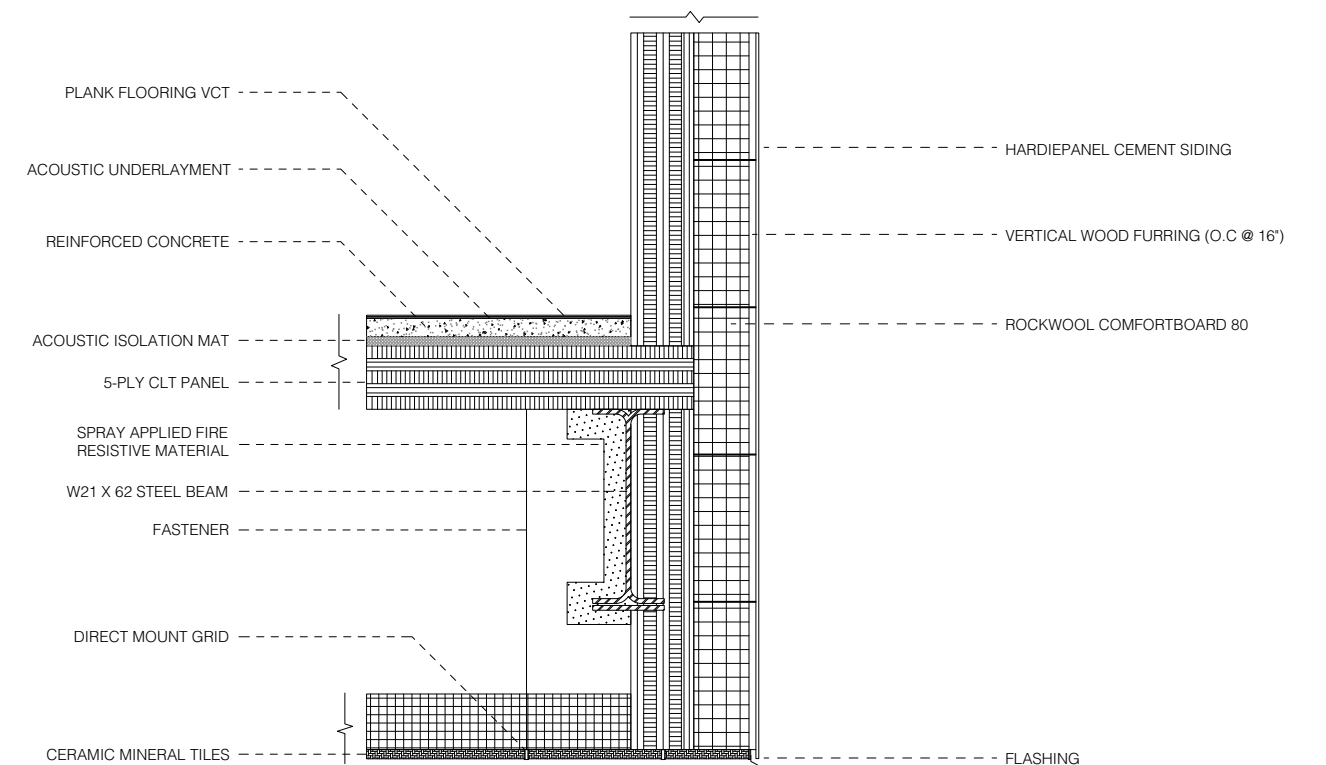
Project Partners : Marcus Morgan, Gunnar Thuss, Casey Rosen

ABSTRACT

The apartment building at 316 Dixwell uses mass-timber for its structure and is Zero Energy Building (ZEB) ready. The analysis of the soffit to wall condition of this building highlights how the wall assembly comes together and how the typical wall assembly transitions to a soffit over an open air garage for the apartment building.



isometric chunk of soffit to wall detail



soffit to wall detail

23RD STREET LIBRARY

Comprehensive Design Studio

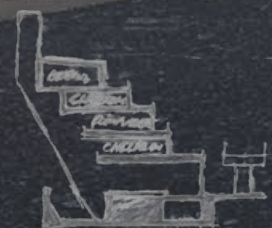
Year : 2022

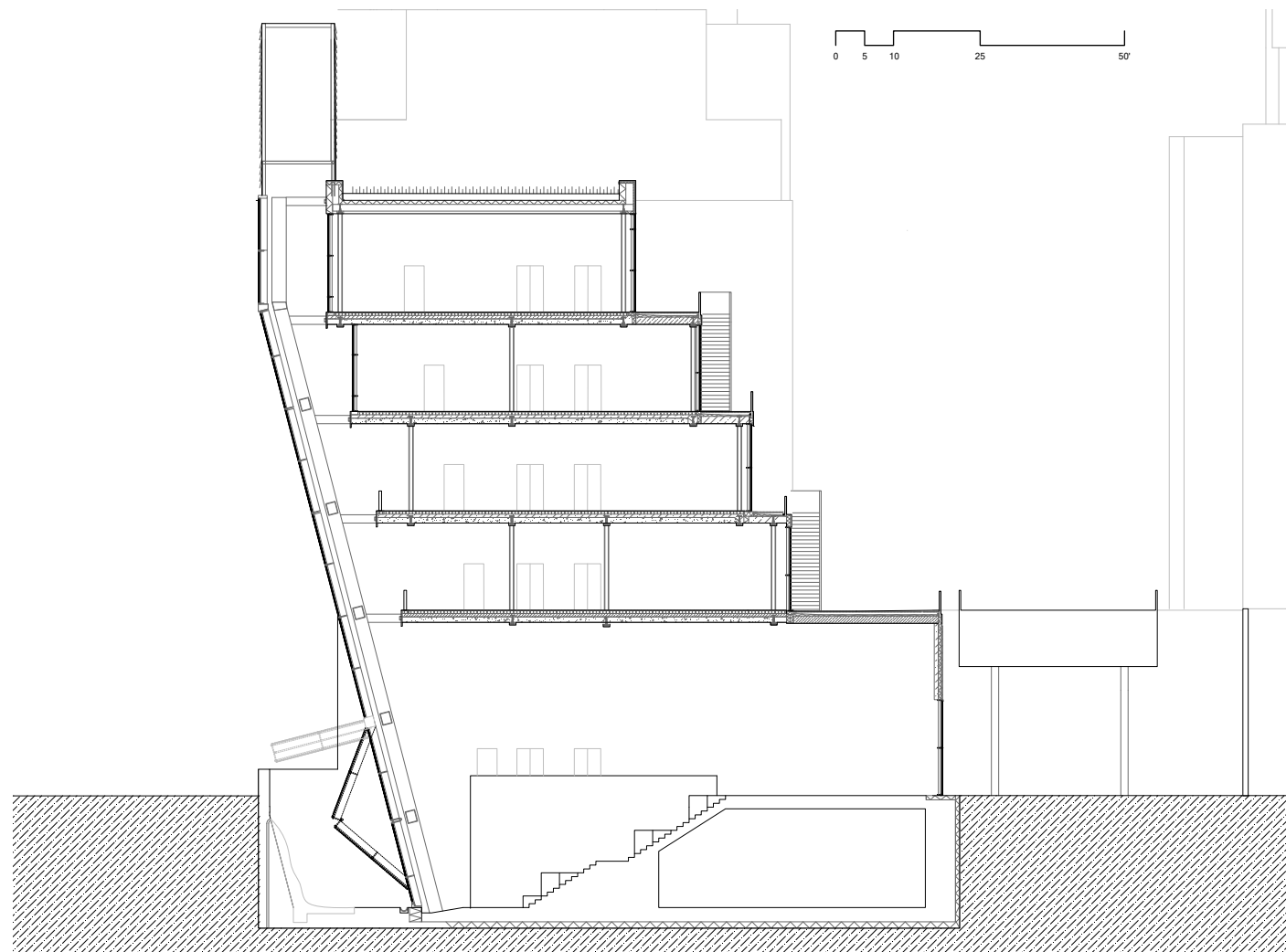
Location : *New York, NY*

Professors : *Lonn Combs, Arta Yazdanseta*

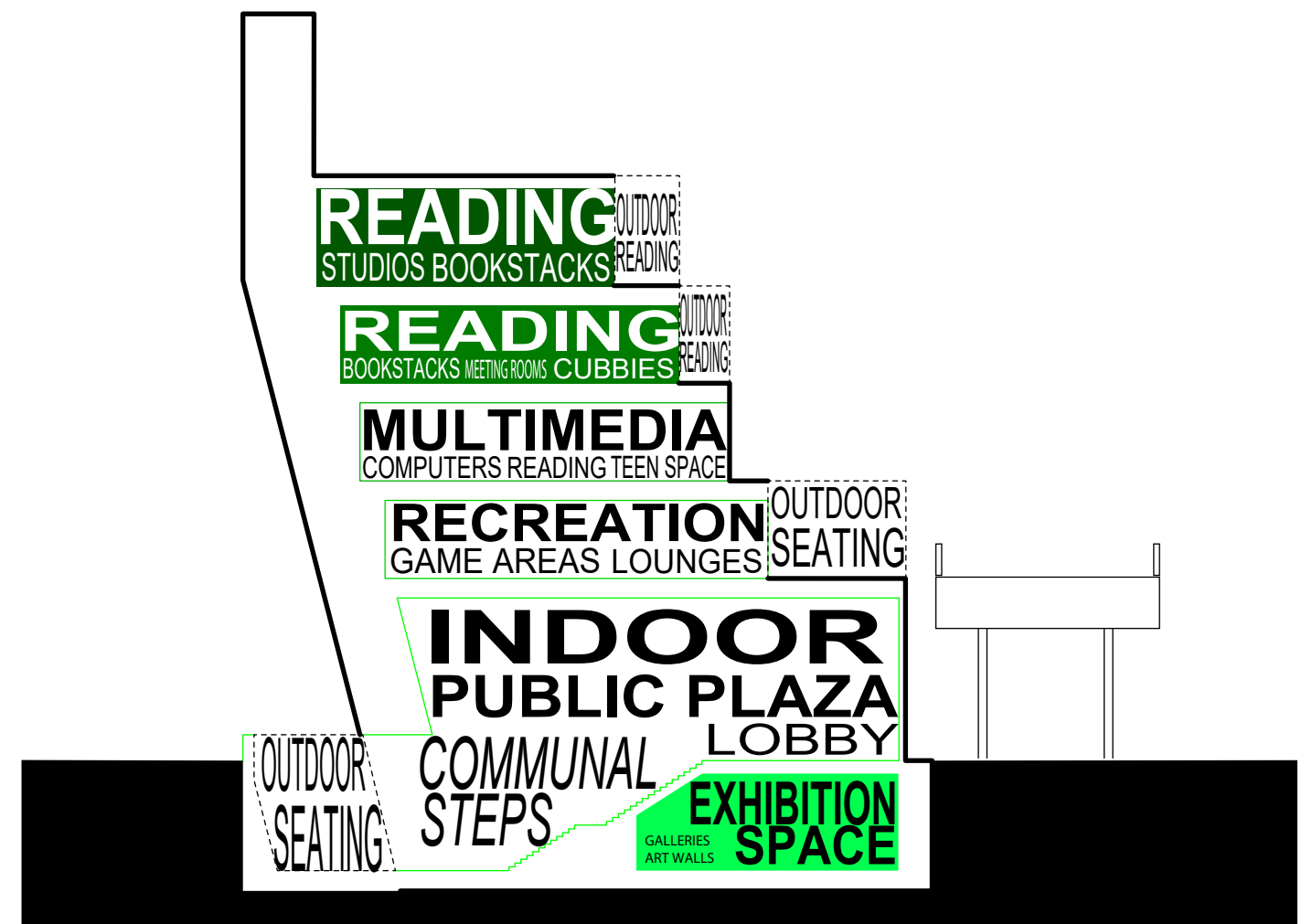
ABSTRACT

Today, public libraries are more than just a repository for physical books. The 23rd Street Library becomes a resource for the greater New York City public to enjoy an environmental safe haven from the harsh conditions of the constantly changing climate of the north east. By providing spanish steps and open floor plans, there is a flexibility to how this building is occupied, allowing for interchangeable programs and providing space for the diverse people that will ultimately come to occupy to this library.

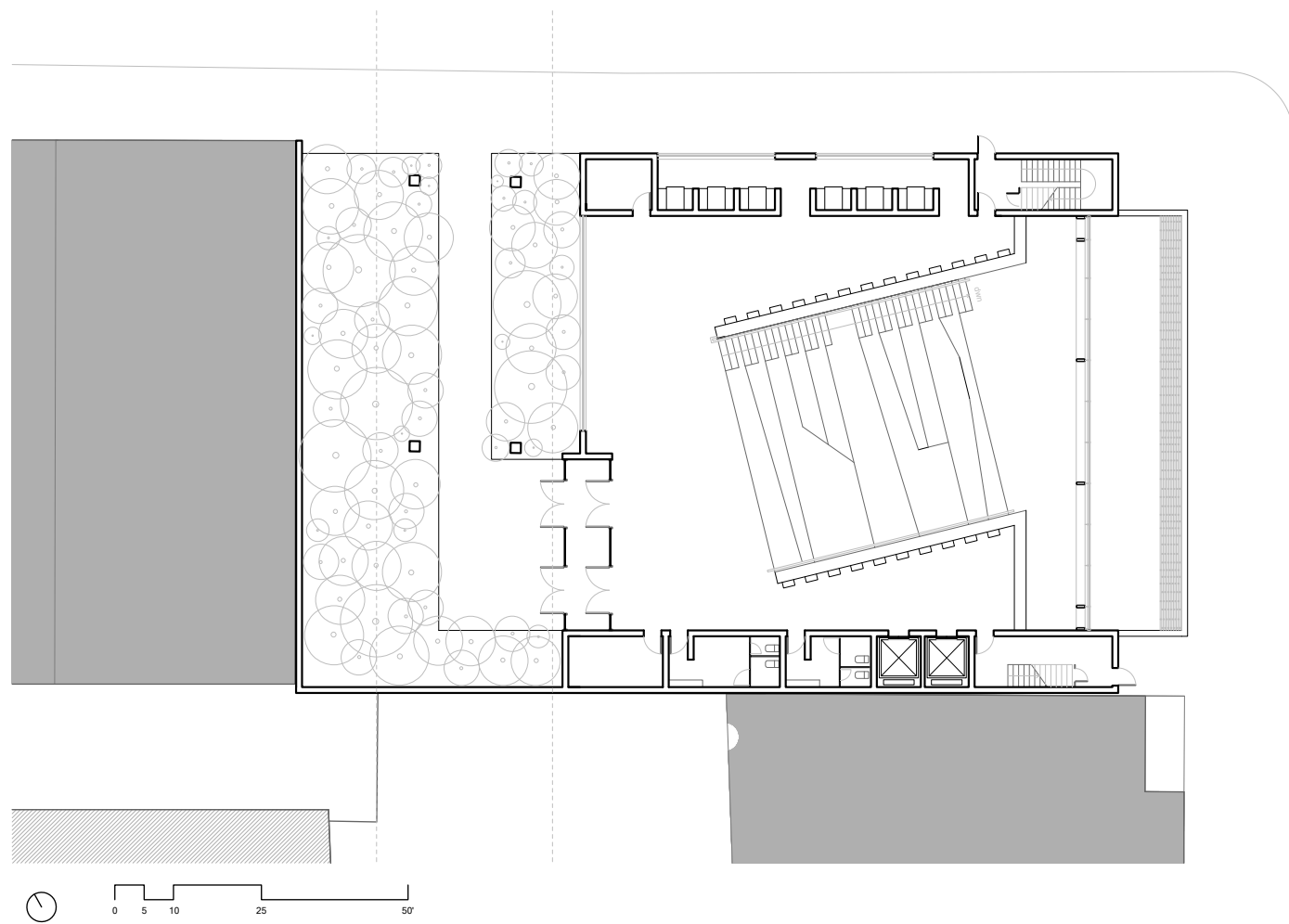




constructable section



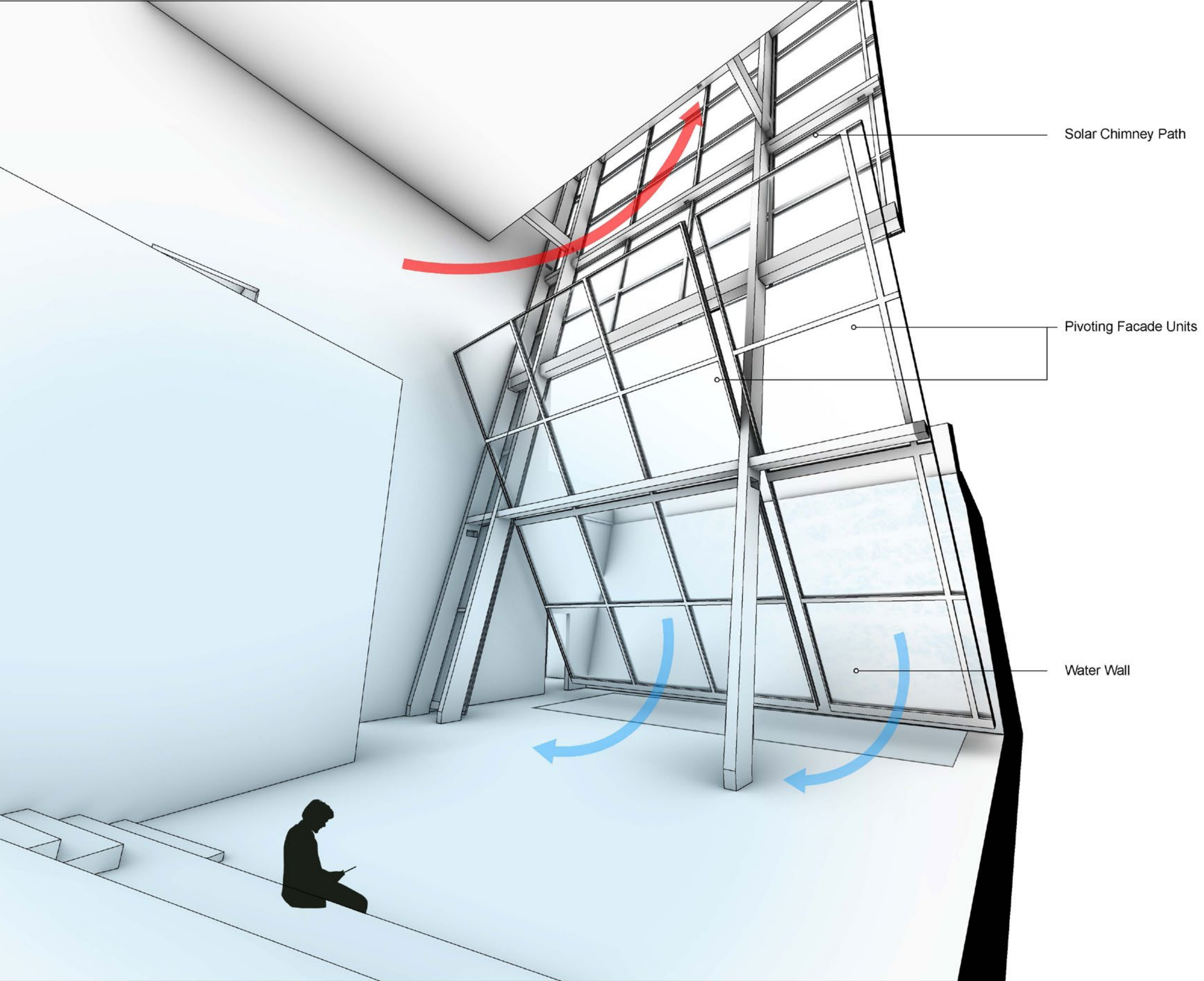
program diagram



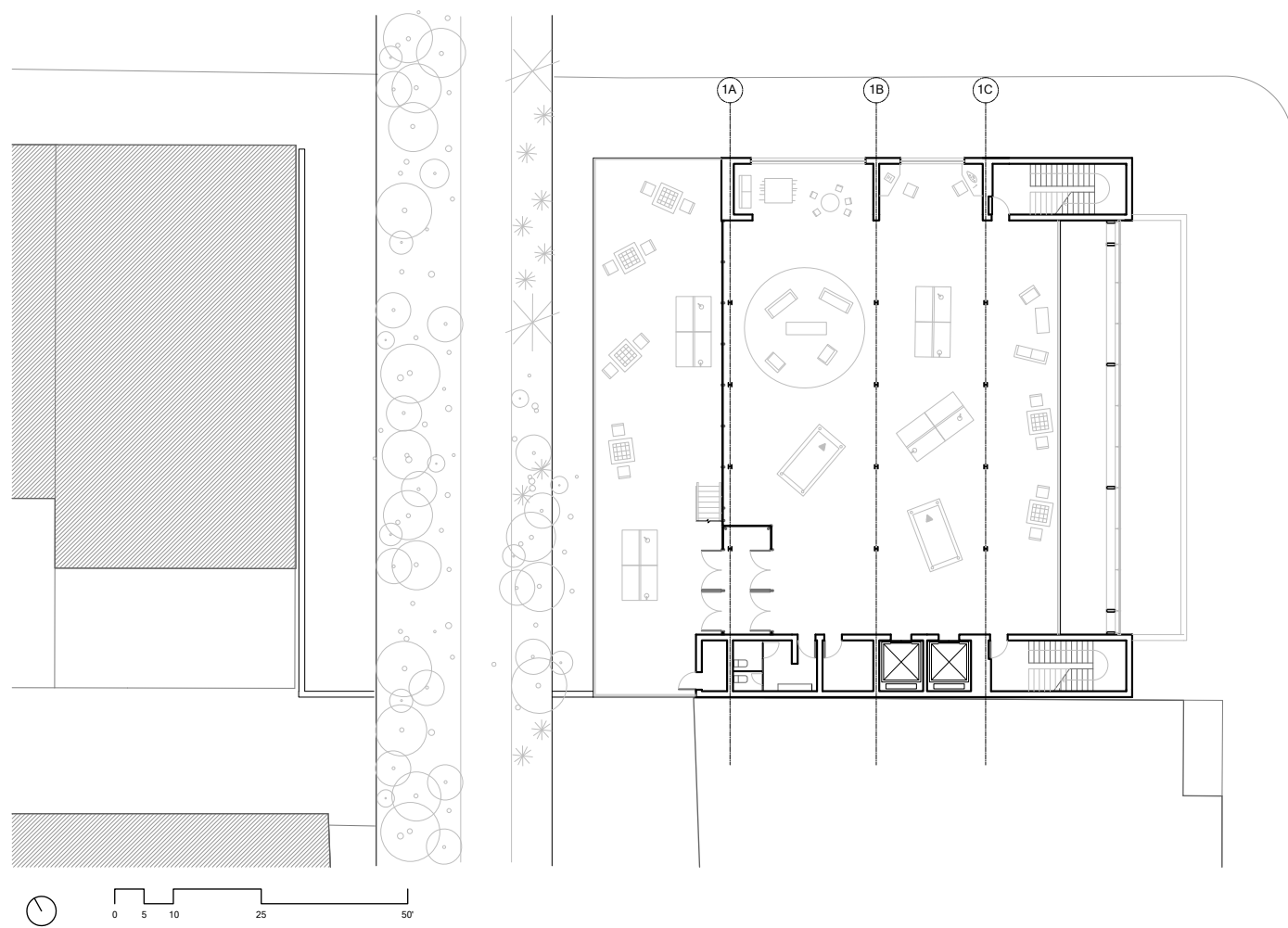
ground floor plan



1/2" section model



atmospheric perspective



recreation floor plan



view from highline

HEMPLIME

CARBONATION RATE EXPERIMENTS

Biocomposite Design Research

Year : 2023

Location : *Troy, New York*

Professors : *Arta Yazdanseta, Helen Zha, Kristin Johnson*

Research Partners : *Abigail Light, Gunnar Thuss*

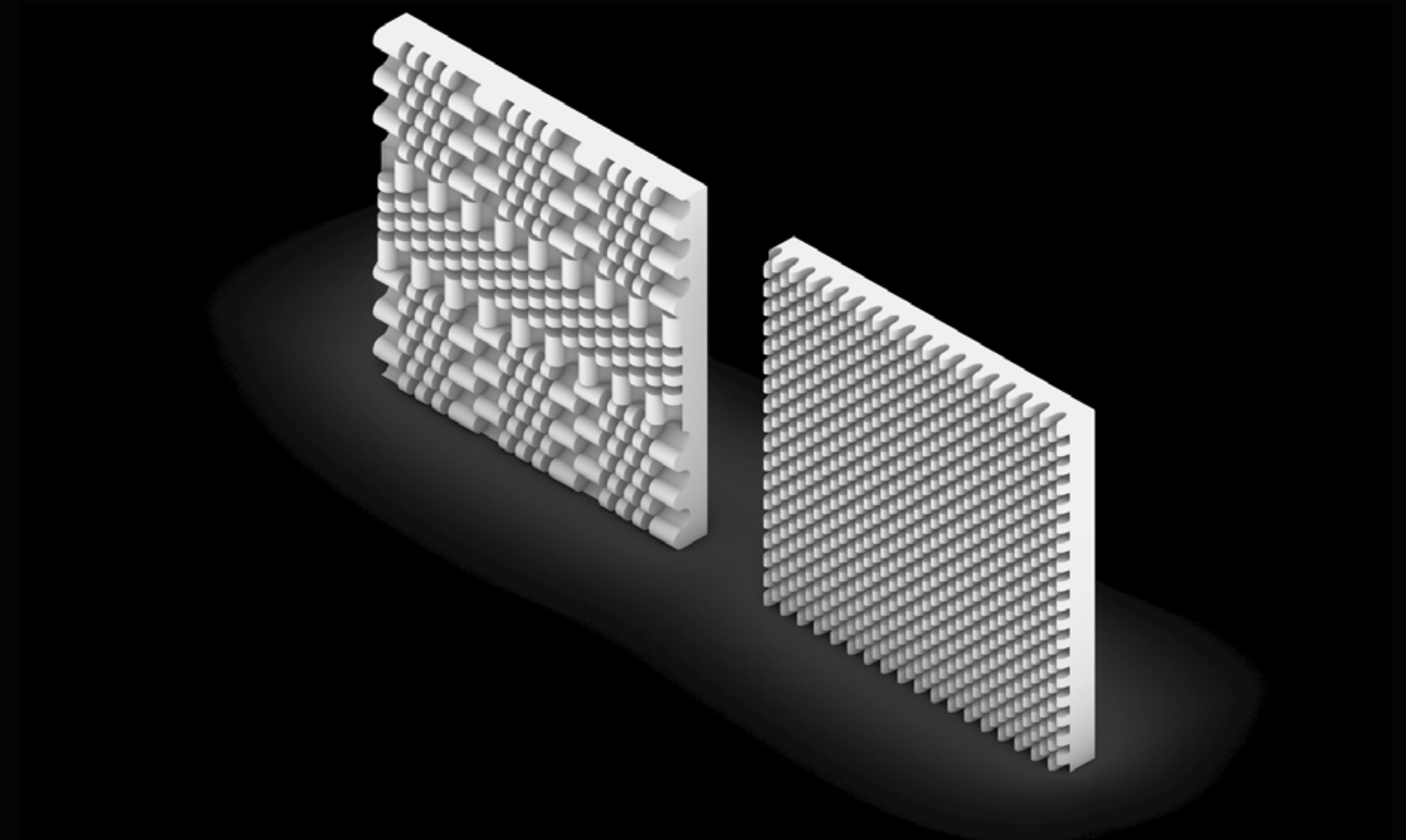
ABSTRACT

Hemplime, a biocomposite consisting of hemp shiv, lime based binder, and water, is a new building material that is known to be carbon sequestering and primarily used in a non-structural capacity. Carbon sequestration in hemplime occurs through both the photosynthesis of the hemp shiv and the carbonation within the lime based binder. As it is one of hemplime's most powerful characteristics, the carbonation of hemplime is of focus throughout this design research. Through the exploration of form and use of a pozzolanic lime binder mix, the surface area of a hemplime sample is manipulated in this research to study its relationship with its carbonation capabilities.



HYPOTHESIS

Increasing the surface area of a hemplime sample will increase its ability to sequester carbon from the atmosphere during its setting process.



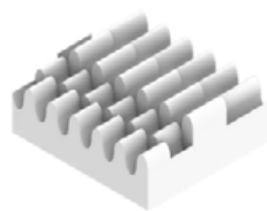
With more exposed surface area the lime binder has more contact with the atmosphere and the carbon dioxide within it.

preliminary design studies of 8' x 8' walls of hemplime

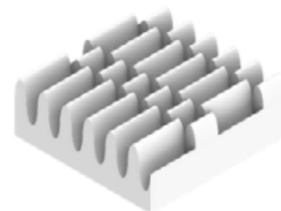
METHODOLOGY



BENCHMARK
12" W x 12" D x 3" H



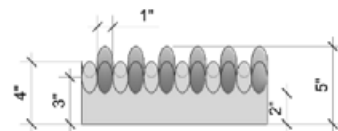
A1
12" W x 12" D x 5" H



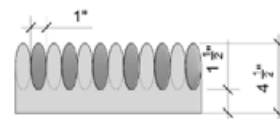
A2
12" W x 12" D x 4.5" H



1:1
V: 432 cu. in.
SA: 432 sq. in.



1.5:1
V: 432 cu. in.
SA: 653 sq. in.



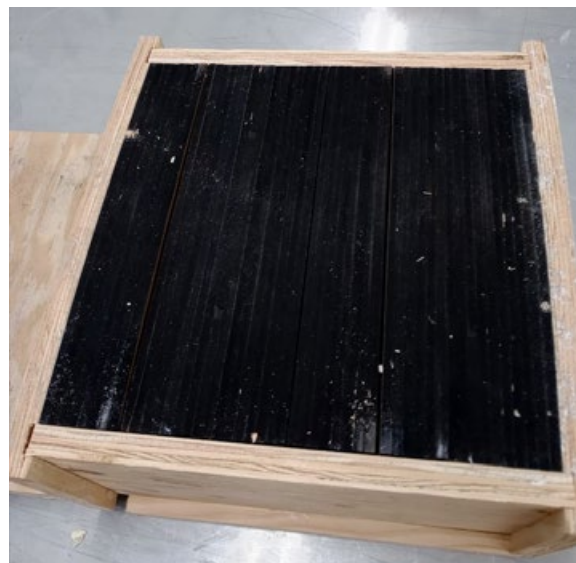
2:1
V: 432 cu. in.
SA: 853 sq. in.

sections and isometrics of samples

In order to test carbonation rate based on surface area, samples created with the same recipe and increasing surface area to volume ratios will undergo carbonation depth tests over a set amount of time.

FABRICATION

$\frac{3}{4}$ " Plywood for formwork
 $\frac{1}{4}$ " MDF for mold
La Chenverre Hemp Shiv
Lime Binder (CL90S + MK)



SAMPLE A1

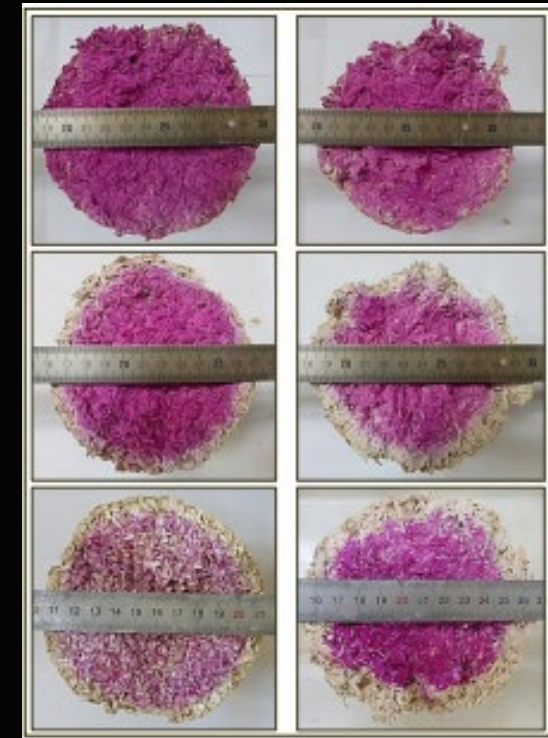


SAMPLE A2



CARBONATION TEST

The panels will be cut in half and tested for carbonation depth with drops of phenolphthalein. To measure time, each sample will be made three times and cut at different time intervals for testing (14 days, 28 days, 42 days).



phenothalein indicator tests for samples of hemplime.

Chabannes, Morgan & Garcia-Díaz, Eric & Clerc, Laurent & Bénézet, J.-C. (2015). *Studying the hardening and mechanical performances of rice husk and hemp-based building materials cured under natural and accelerated carbonation.*

