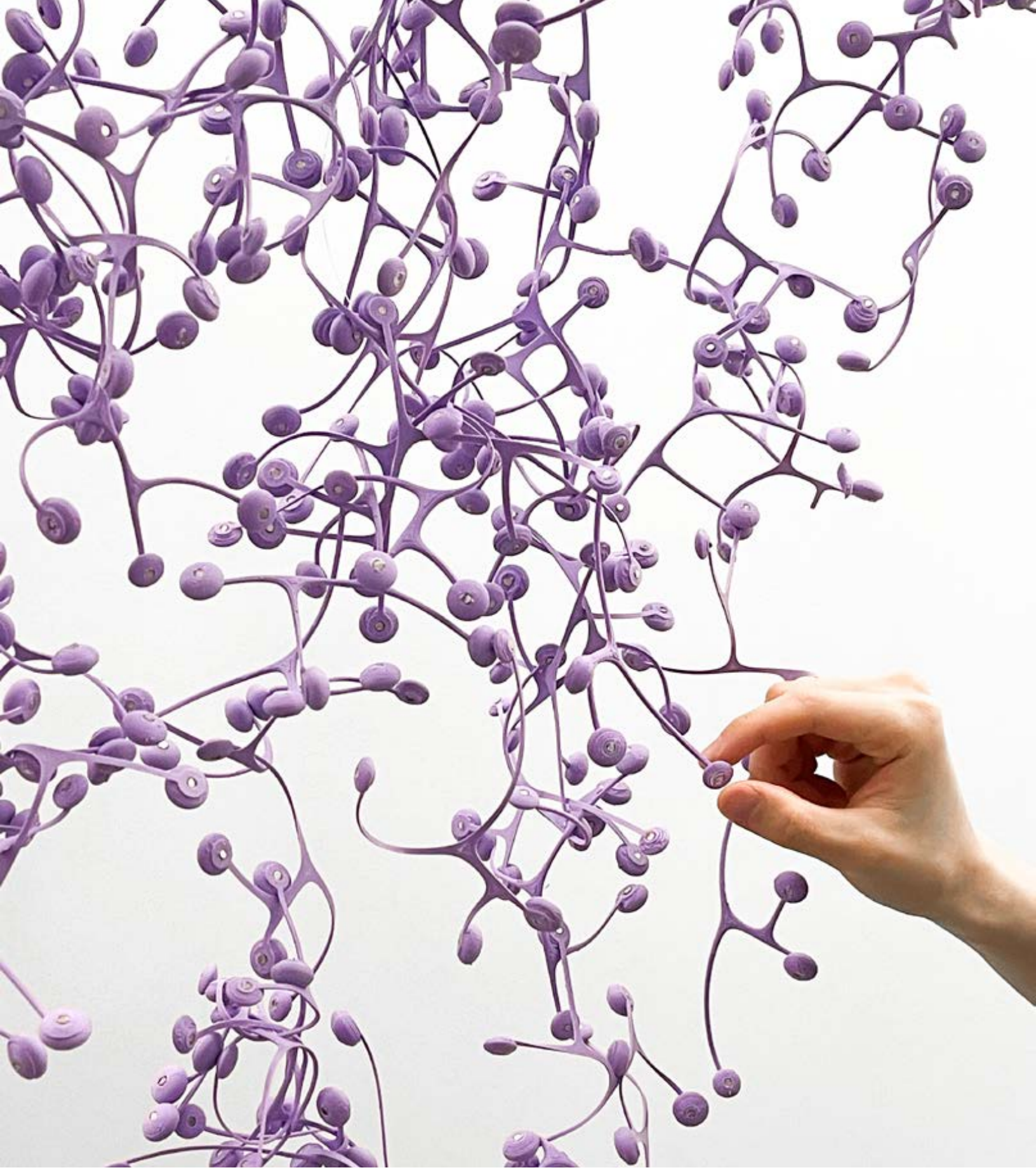


IVANIA RIVERA

ARCHITECTURE PORTFOLIO

B. ARCH & M.S. Matter Design Computation

selected works
2019-2024

IVANIA RIVERA

AIR45@CORNELL.EDU | +1 201 658 6878

EDUCATION

Cornell University | GPA 4.0 | Ithaca, NY — 2022- 2024
M.S. Matter Design Computation

Syracuse University | GPA 3.7 | Syracuse, NY — 2017- 2022
Bachelor of Architecture

ACADEMIA

Cornell University | Graduate Research Assistant | *Data Visualization* — Aug 2022-Aug 2024
Mentor : Professor Jenny Sabin
Skills : Grasshopper, MorphoGraphX, C#, Ai Rendering, Blender
Research and simulation of morphogenesis in arabidopsis shoot apical meristem
Researched Stable Diffusion and Text to Image generation for AI Rendering

Cornell University | Graduate Research Assistant | *Mycelium Research* — Feb 2024-May 2023
Mentor : Professor Felix Heisel and Marta H. Wisniewska
Skills : Grasshopper, Model Building
Designing Mycelium units for pavilion construction

Cornell University | Graduate Research Assistant | *Swim Cap Design* — Jan 2023-May 2023
Mentor : Professor Fatma Baytar
Skills : Grasshopper, 3D Body Scanning, Garment Production
Designing swim caps for diverse populations using advanced technologies

Syracuse University | Research Intern — Nov 2021-Feb 2022
Mentor : Undergraduate Chair Daekwon Park and Professor Nina Shariffi
Skills : Collaboration, Time Management, Budget Management, Inventory Management
Worked in a Mycellium Research Group building new mycelium building technologies in Rwanda

Syracuse University | Teaching Assistant — Jun 2021-Sep 2022
Mentor : Professor David R. Shanks
Skills : Leadership
TA for ARC 108 Shanghai Studio

WORK

OMA | Architectural Intern | *Manhattan, NY* — Jun 2023-Aug 2023
Skills : Model-making, Enscape, Schematic Design, Diagrams, Concept Generation, Adobe Suite
Projects : Louis Vuitton Set Design, Hawaii Villa, Mycelium Observatory
Worked on model-making, renders, photoshoots, diagrams, presentations

E4H | Architectural Intern | *Manhattan, NY* — May 2022-Aug 2022
Skills : Revit, Enscape
Projects : Designed OR suites, labor and deliver rooms, laboratories
Worked on SD, DD, CD, and participated in client meetings

King + King Architects | Architectural Intern | *Syracuse, NY* — Nov 2021-Feb 2022
Skills : VectorWorks, SketchUp
Projects : Designed a mixed-space venue, bus lift, classrooms
Worked on SD, CD, and client meetings

CPA | Architectural Intern | *West New York, NJ* — May 2019-Aug 2019
Skills : Revit, AutoCAD, Adobe Suite
Projects : Designed residential apartments
Worked on SD, CD, and client meetings

AWARDS + HONORS

2023 IntCDC Fellowship | IntCDC Cluster at University of Stuttgart — Sep 2023-Dec 2023
Research : Learning from plant cell interactions to inform adaptive architectures

4wrd Diversity in Design Scholarship Recipient | E4H NYC Team — Summer 2022
E4H scholarship and Summer Internship opportunity at E4H NYC headquarters

2022 Britton Memorial Faculty Prize | Syracuse University — May 2022
Thesis Project : Impermanent Mycotectures : Bio-Welding as Methodology

Syracuse Source Grant | Syracuse University — Nov 2022
Thesis Project : Impermanent Mycotectures : Bio-Welding as Methodology

King + King Architects Leadership by Design Prize | Syracuse University — Apr 2021
Composition Studio Project : Santa Maria De La Pace Reconstructed by Zaha Hadid

EXHIBITIONS

ITAA Design Exhibition | New Technologies for Fashion | *Bio-Inspired Textiles* — Jun 2024
Mentor : Professor Fatma Baytar
Project : Floral Surreal, Bio- Inspired Textiles
Produced in course FSAD3650 New Technologies for Fashion Design

Cornell Tech Open Studio | Xylos | *Exploring 4D printing Self-Assembling Systems* — Jun 2024
Mentor : Professor Jenny Sabin
Collaboration : Neal Lucas Hitch

PAPERS

Morphogenic 4D Printing | Extracting Emergent Growth Patterns from Spatial Data Visualization and Simulations of Arabidopsis Thaliana Plant Cell Imaging to Inform the Degree of Responsivoy for 4D Printing on Textiles — Aug 2024

SKILLS

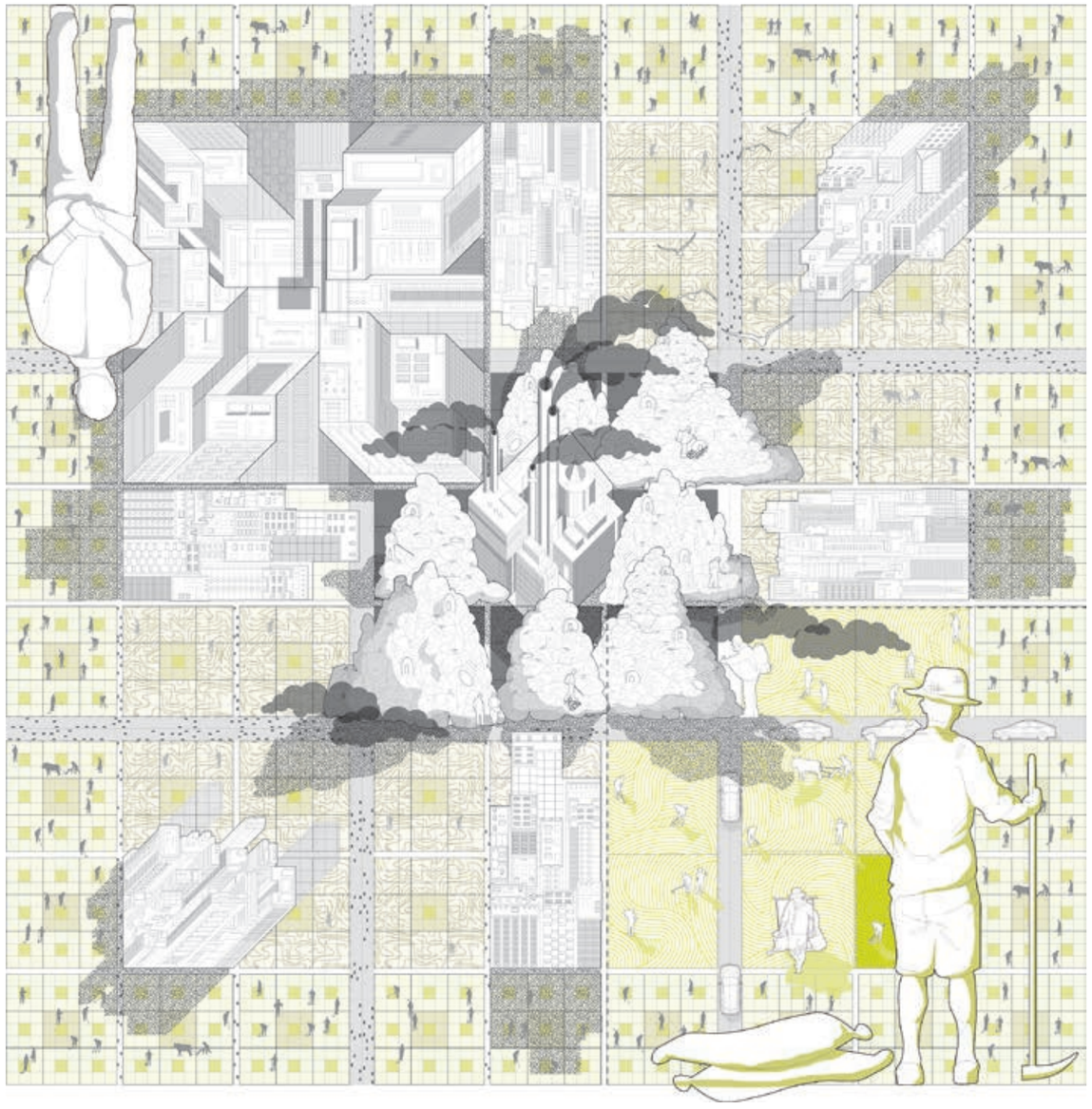
3D Modeling, 2D Drafting + Scripting
Software : Rhinoceros 7.0 with Grasshopper
Autodesk : Revit Architecture, AutoCAD
Sketchup, VectorWorks, SolidWorks,Blender
Scripting : C#

Digital Imaging + Rendering
Software : AdobeSuite : Photoshop, Illustrator, InDesign, Lightroom, Premiere Pro
Rhino Render, V-ray, Enscape

Physical Modeling
Fabrication : 3D printing, resin printing, laser cutting, 3D printing on fabric, wood work, foam cutting, concrete casting, acrylic modeling

Handsketching
Medium : Graphite, markers, water color, acrylic

Languages
Native : English
Fluent : Spanish
Beginner : Italian



PROJECTS

2019-2024

BACHELORS

1 **Center of Textured Scapes** | Skytop Quarry Landscape | Syracuse, NY

2 **Synthesizing the Un'Green' Greenbelt** | Housing in the Greenbelt | London, UK

3 **Hybrid Commercial Living Typology** | Worldwide Case Study | London, UK

4 **Santa Maria della Scienza** | Counterfeit Architecture | Rome, Italy

5 **Impermanent Mycotectures** | Bio-Welding as Methodology | Syracuse, NY

6 **Mycelium Building Systems in Rwanda** | Mycelium Research Project | Syracuse, NY

MASTERS

7 **microHOUSE** | Cabin in the Woods | Syracuse, NY

8 **Self-Assembling Xylos** | Subaquatic 4D Priniting of Flat Modules | Cornell Tech

9 **Morphogenic 4D Printing** | Inspired by Plant Cell Growth Behaviors | Ithaca, NY

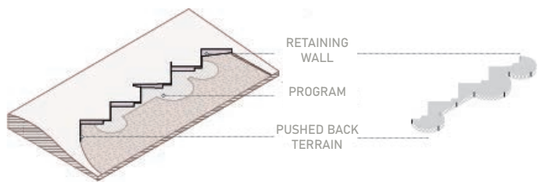
CENTER OF TEXTURED SCAPES

Skytop Quarry Landscape | Syracuse, NY

Mission Statement

In the Center of Textured Scapes, there is a great focus on how the site performs and is acted upon. The site is designed by revealing the organizational, temporal, ecological, systemic and cultural attributes of the territory, across scales, that provide a framework for design intervention.

The Center of Textured Scapes focuses on generating and mediating where Skytop Quarry develops sectors of softscape and hardscape through the implementation of retaining walls. Upon visiting the 107 year-old quarry, the emptiness and decay due to its inaccessibility, poorly maintained wooden trails, and abandoned graffitied structures, encouraged the push for improving the quarry at a large scale. Additionally, the different textures existing on the site, such as the dry and marsh-like landscapes, produced by the existing structures along the sloped site, make navigating the quarry 'trails' quite messy and unpleasurable. Therefore, the Center of Textured Scapes aims to tackle this by imposing a site strategy of retaining sectors to control the portions of softscape, the natural wetlands generated through run-off, and the portions of hardscape, the dry lands that will be man-made.



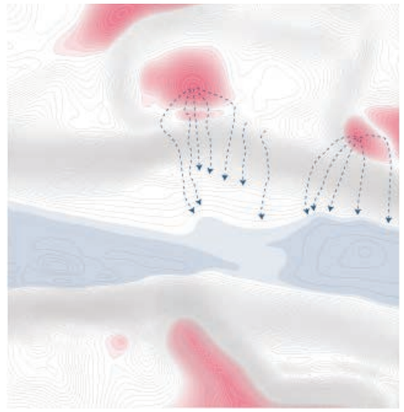
Date

Spring 2019

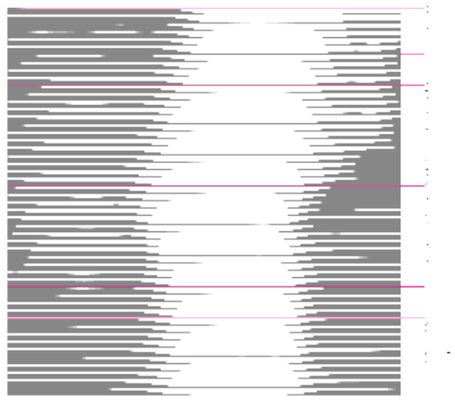
Advisor

Professor Timothy Stenson

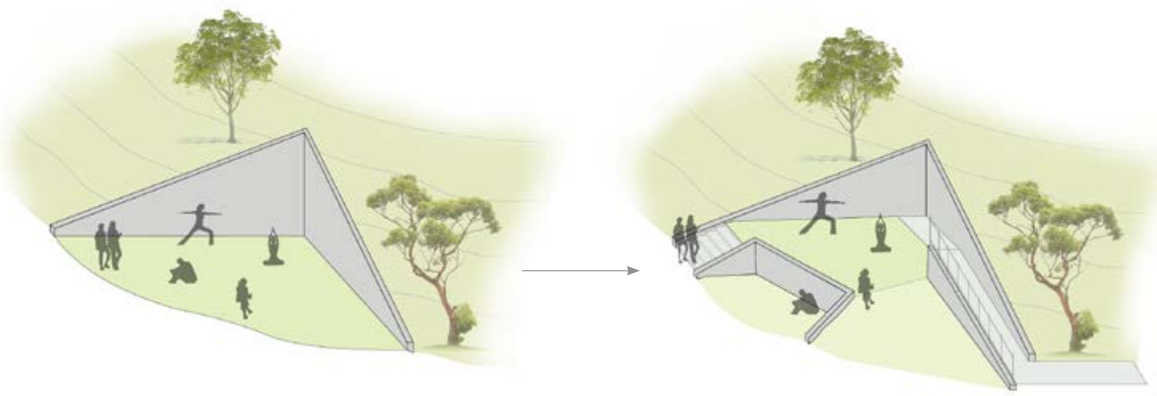
Topology



Water Shed

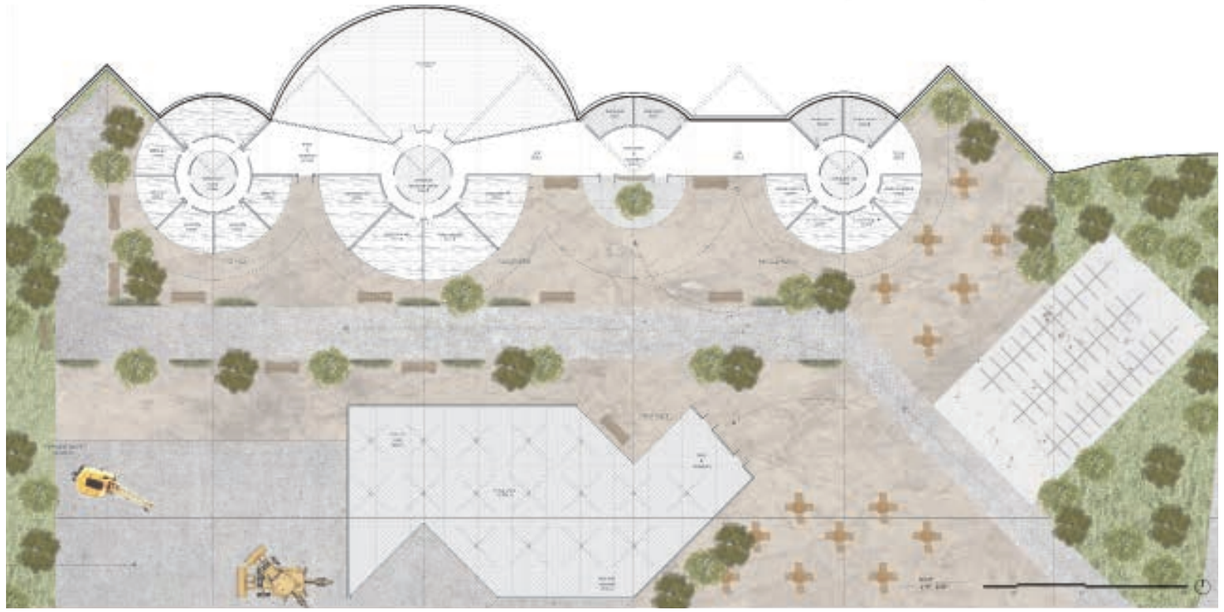


Serial Sections



LARGE RETAINING WALL
[CREATES MASSIVE SCAR ALONG HILL]

TERRACED RETAINING WALL
[BREAKS UP MASS]



SYNTHESIZING THE UN'GREEN' GREENBELT

Housing in the Greenbelt | London, UK

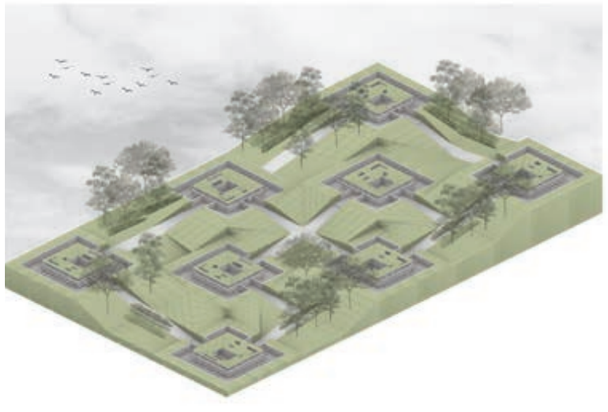
Mission Statement

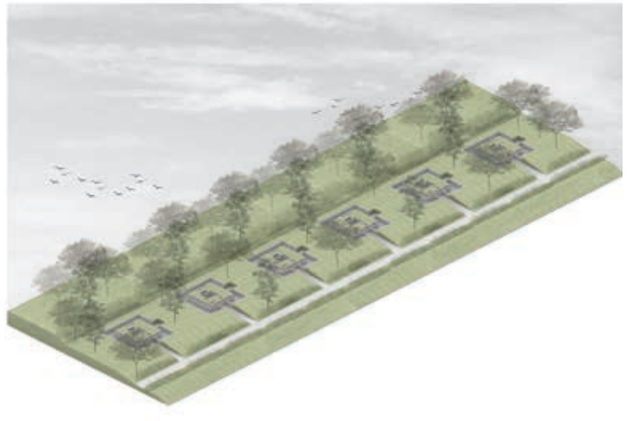
This project engages with the city of London by addressing core landscape and urban design issues. After reading "London Orbital" by Iain Sinclair, a key issue raised was defining what makes the green belt 'green,' especially since many plots of land are neglected and in ruins. The reading suggests that the green belt would be better protected if utilized more effectively, rather than left untouched. The reality is that the 'ungreen' green belt is a romanticized greenscape protected to prevent urban sprawl and preserve London's biodiversity, despite many parts being in poor condition. By maintaining the Greenbelt Policy, London places the burden of the housing crisis on the limited and often hazardous Brownfield sites. This project, however, aims to improve the neglected parts of the green belt while addressing London's housing crisis. The formal strategy involves rehabilitating derelict regions of the green belt and constructing homes beneath these revitalized green spaces.

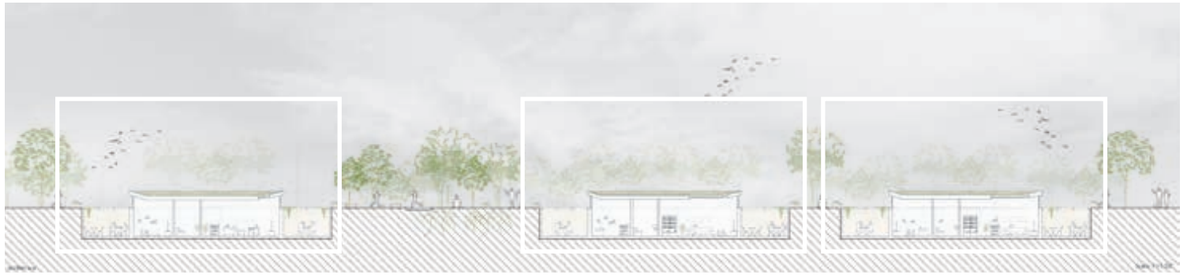
Date
Fall 2021

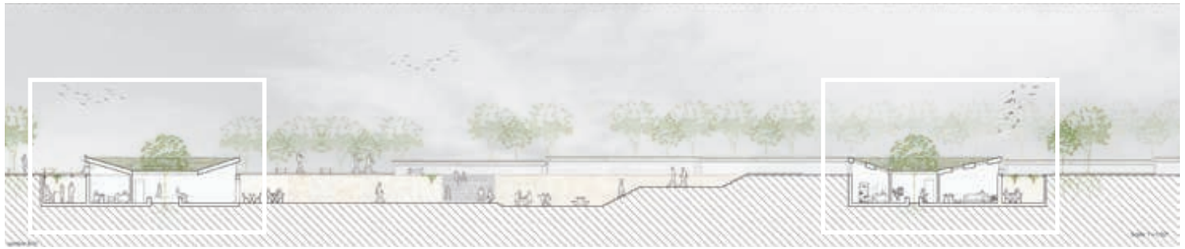
Advisor
Professor Davide Sacconi

Collaborator
Helna Zhen



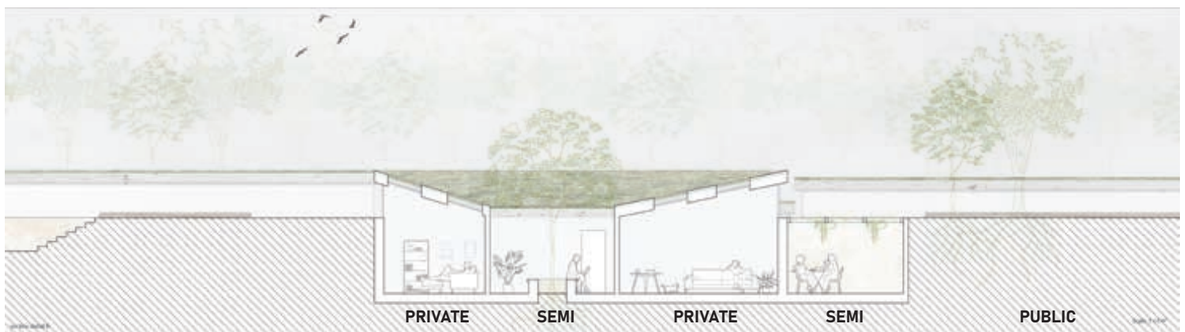






[CLUSTERS]


SEMI
PRIVATE
PUBLIC


PRIVATE
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PRIVATE
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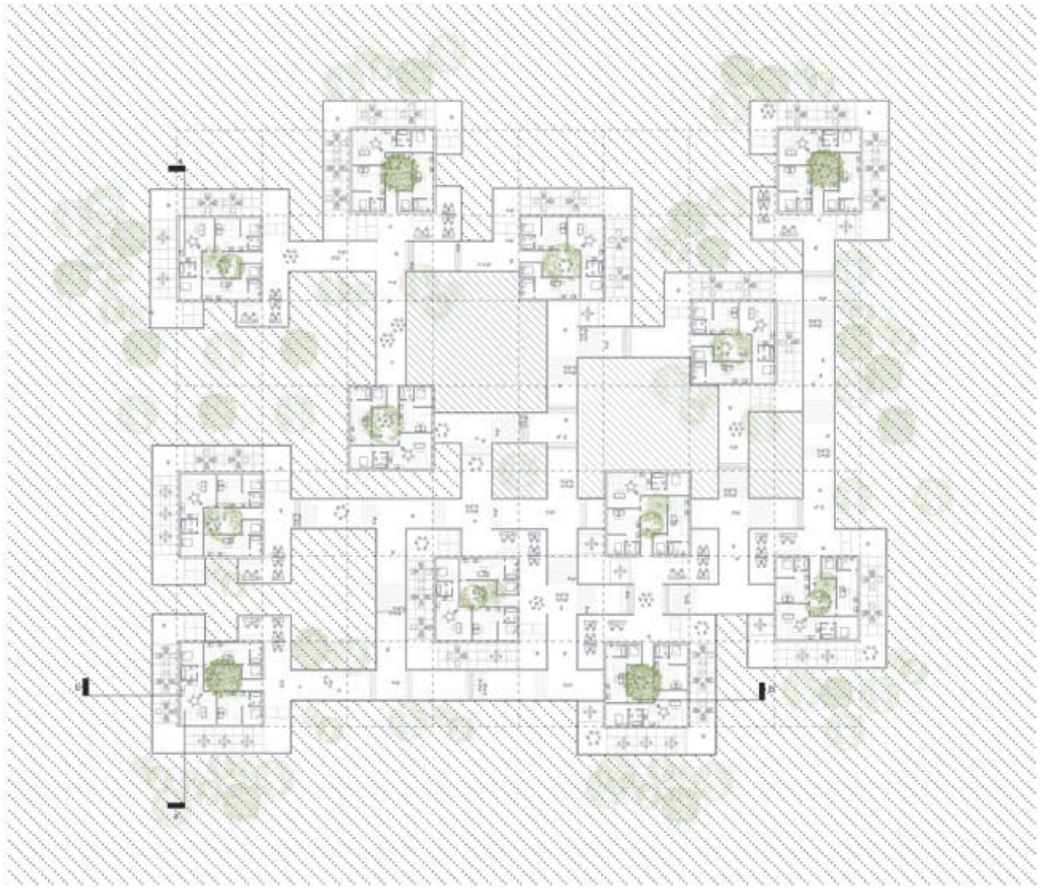
PUBLIC


PRIVATE



HYBRID COMMERCIAL LIVING TYPOLOGY

Worldwide Case Study | New York, NY

Mission Statement

The Hybrid Commercial Living Typology examines how society's evolving needs challenge traditional housing concepts. This speculative approach encourages questioning norms, allowing architecture to adapt to fundamental societal shifts. It also focuses on designing for the near future, particularly in times of economic uncertainty.

Analyzing Airbnb spaces reveals the potential of hybridizing spaces for both owners and guests. This typology could serve as a stepping stone for young adults transitioning into independence, offering financial support through a blend of residential and commercial functions. The case studies highlight how these spaces can accommodate diverse needs, providing unique living experiences while facilitating a beneficial exchange of services and capital.

MONETARY EXCHANGE

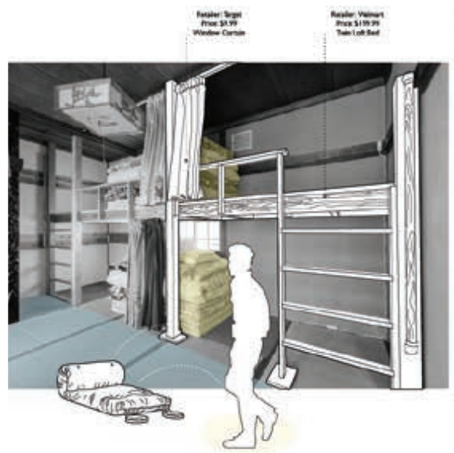
Date

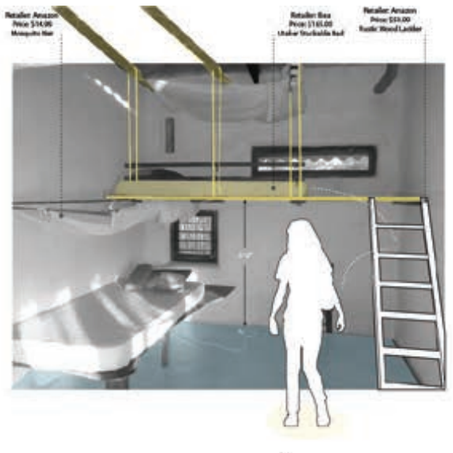
Spring 2020

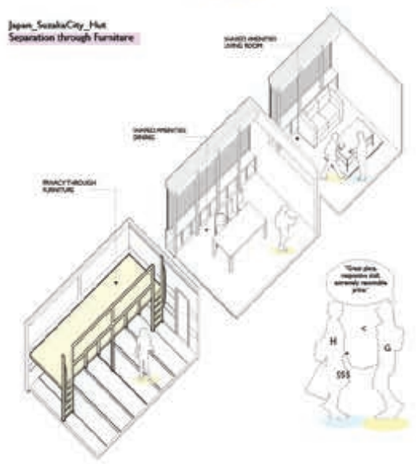
Advisor

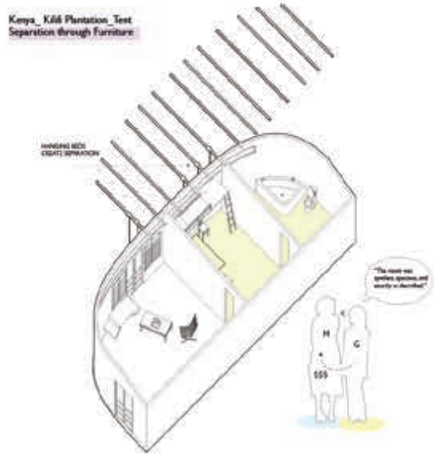
ProfessorAbingo Wu

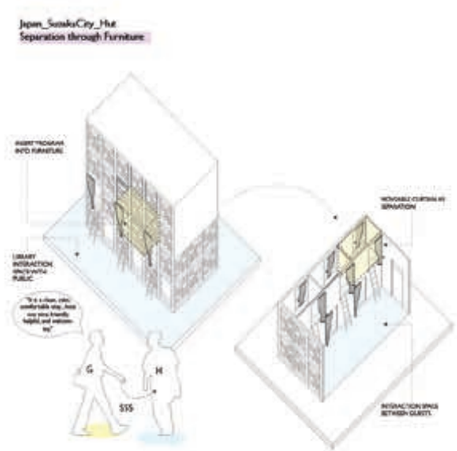
ANALYSIS OF MONETARY EXCHANGE



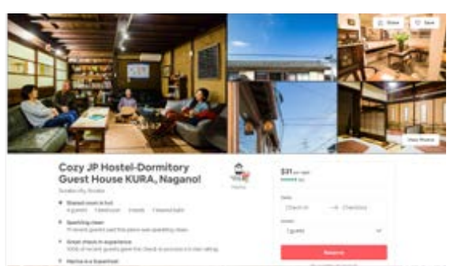








AIRBNB POSTINGS



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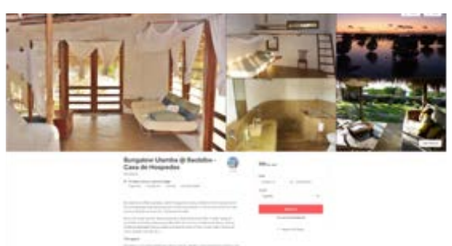
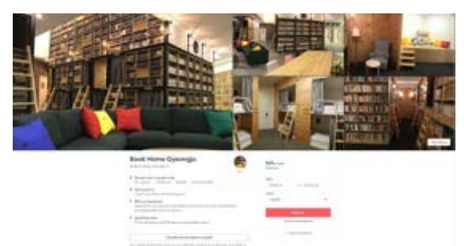


[2]

[3]



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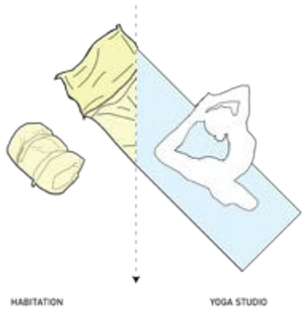
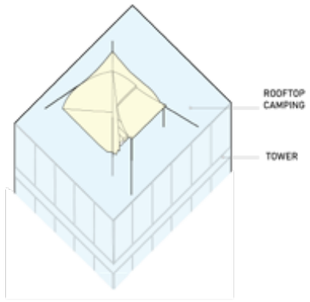
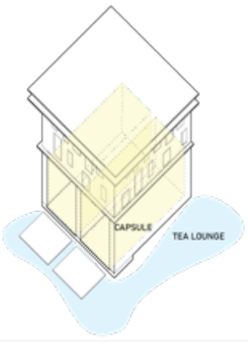
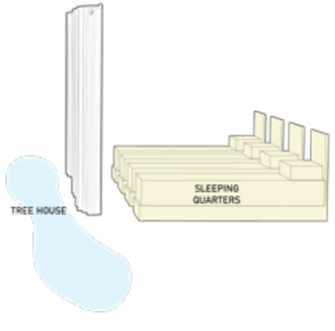
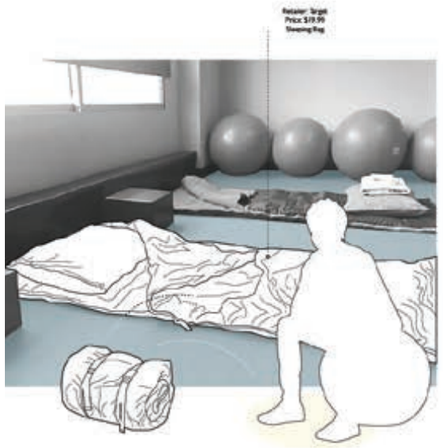
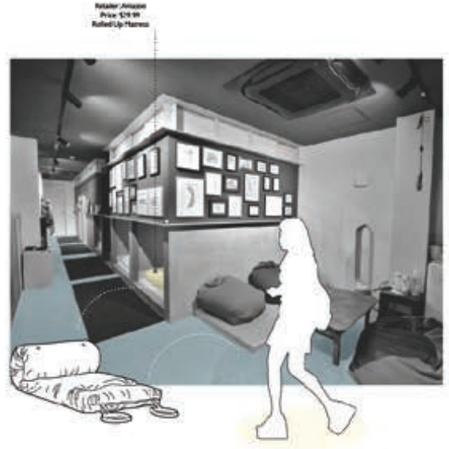

HABITATION
YOGA STUDIO

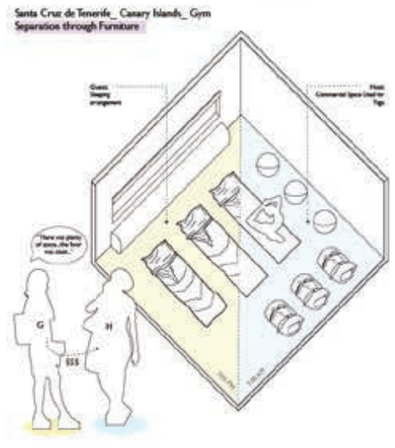

ROOFTOP CAMPING
TOWER

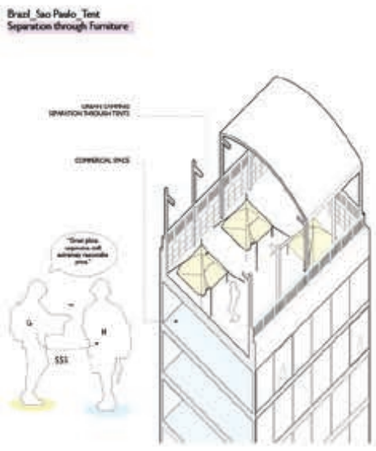

CAPSULE
TEA LOUNGE

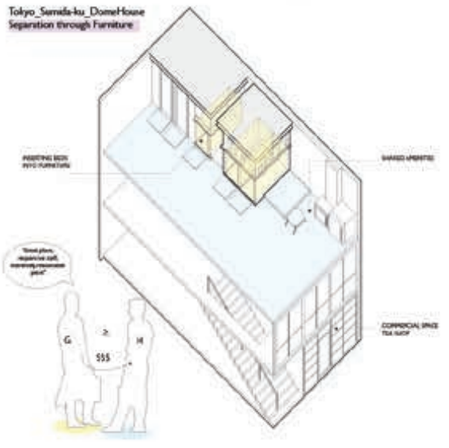

TREE HOUSE
SLEEPING QUARTERS

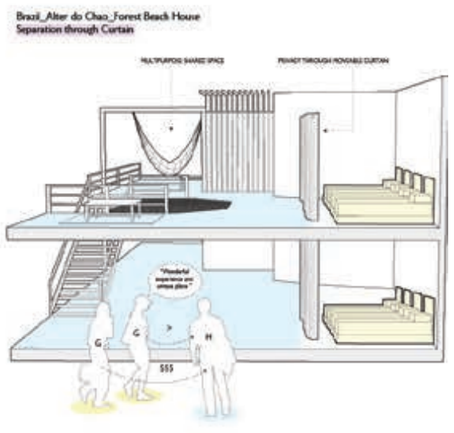


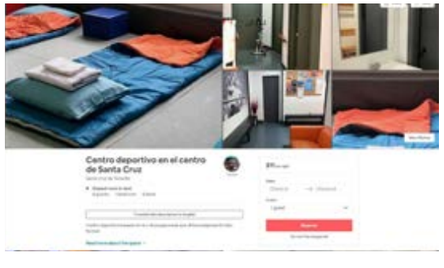



Santa Cruz de Tenerife_ Canary Islands_ Gym
Separation through Furniture

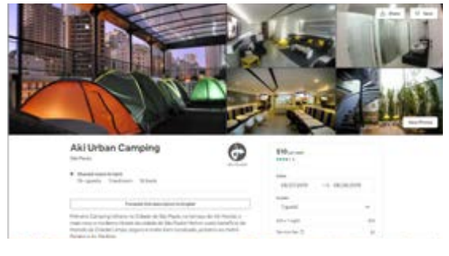

Brazil_Sao Paulo_Tent
Separation through Furniture


Tokyo_Sumida-ku_DomeHouse
Separation through Furniture


Brazil_Alter do Chao_Forest Beach House
Separation through Curtain


Centro deportivo en el centro de Santa Cruz

[5]


Aki Urban Camping

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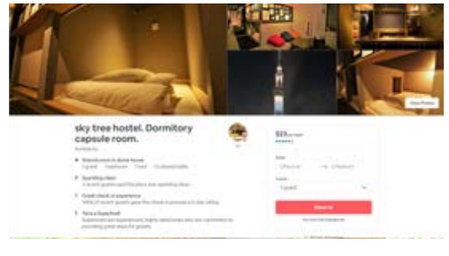
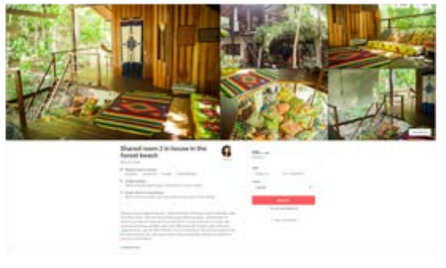

sky tree hostel. Dormitory capsule room.

[7]



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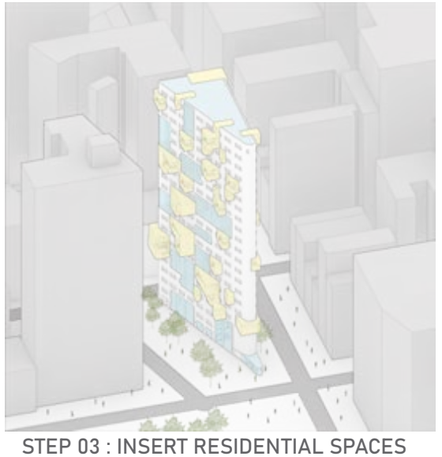
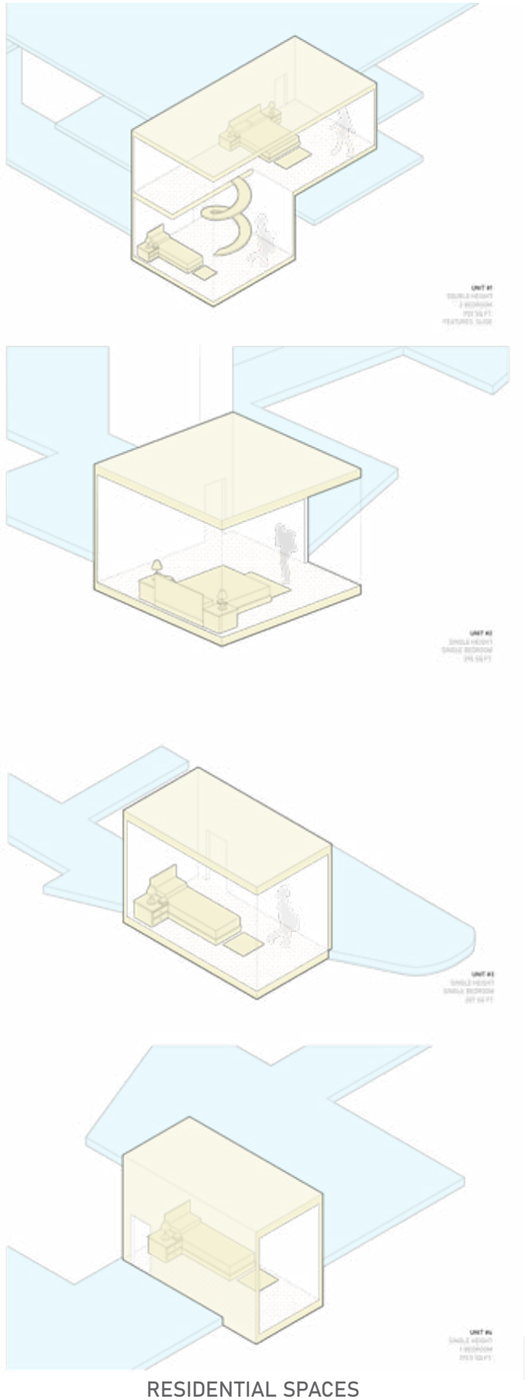
STEP 01 : REPURPOSING FLATIRON

STEP 02 : EXTRACT SPACES



STEP 03 : INSERT RESIDENTIAL SPACES



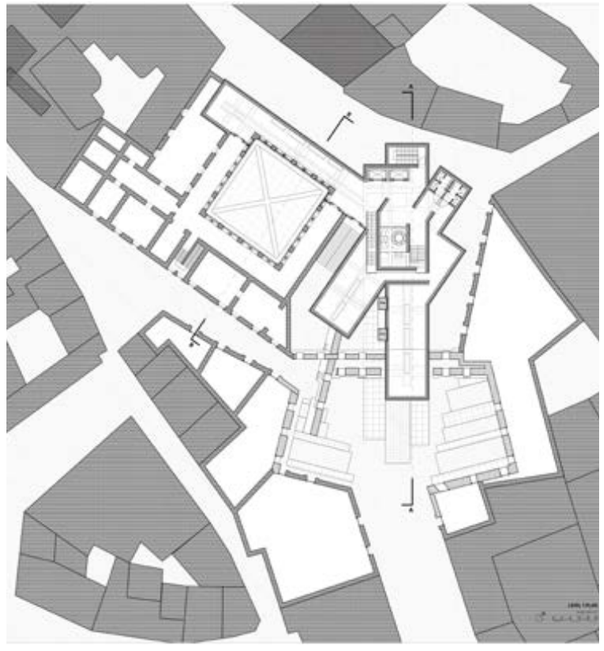
RESIDENTIAL SPACES

PLUG IN SCHEME IN PLAN

HYBRID SPACES

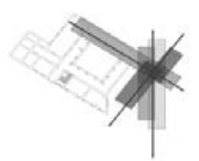
SANTA MARIA DELLA SCIENZA

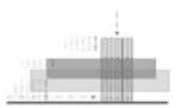
Counterfeit Architecture | Rome, Italy

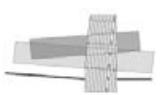


Mission Statement

A replicant is a fictional bio-engineered being introduced in the 1982 film Blade Runner. The Nexus series of replicants are virtually identical to adult humans but possess superior strength, speed, agility, resilience, and intelligence, varying by model. This studio aimed to create counterfeit architecture, reimagining and reconstructing historical artifacts through modern technologies and contemporary societal ideals.In this project, Santa Maria Della Pace is reconsidered and transformed as an indispensable artifact of history. Using the architectural language of Zaha Hadid, the church is resurrected, intertwining faith with modern science and technology. This shift from faith to knowledge informed the creation of an observatory, challenging the secular aspects of existence.Ultimately, through Zaha Hadid's design, the project unifies the previously segregated elements of the church, cloister, and portico, refocusing the architectural axis on the church itself.







Date

Spring 2021

Advisor

Professor Richard Rosa

Collaborator

Karina Cocuera

BUILDING SYSTEMS

metal cage
louvres
double glazed skylight
concrete observatory walls
structural concrete block walls
plaster floor slabs
slanted columns
double footing

METAL CAGE

2"x4" steel beam cage
attachment of observatory layers to archive blocks

WINDOW + LOUVRE

stationary aluminum louvres
sunlight control

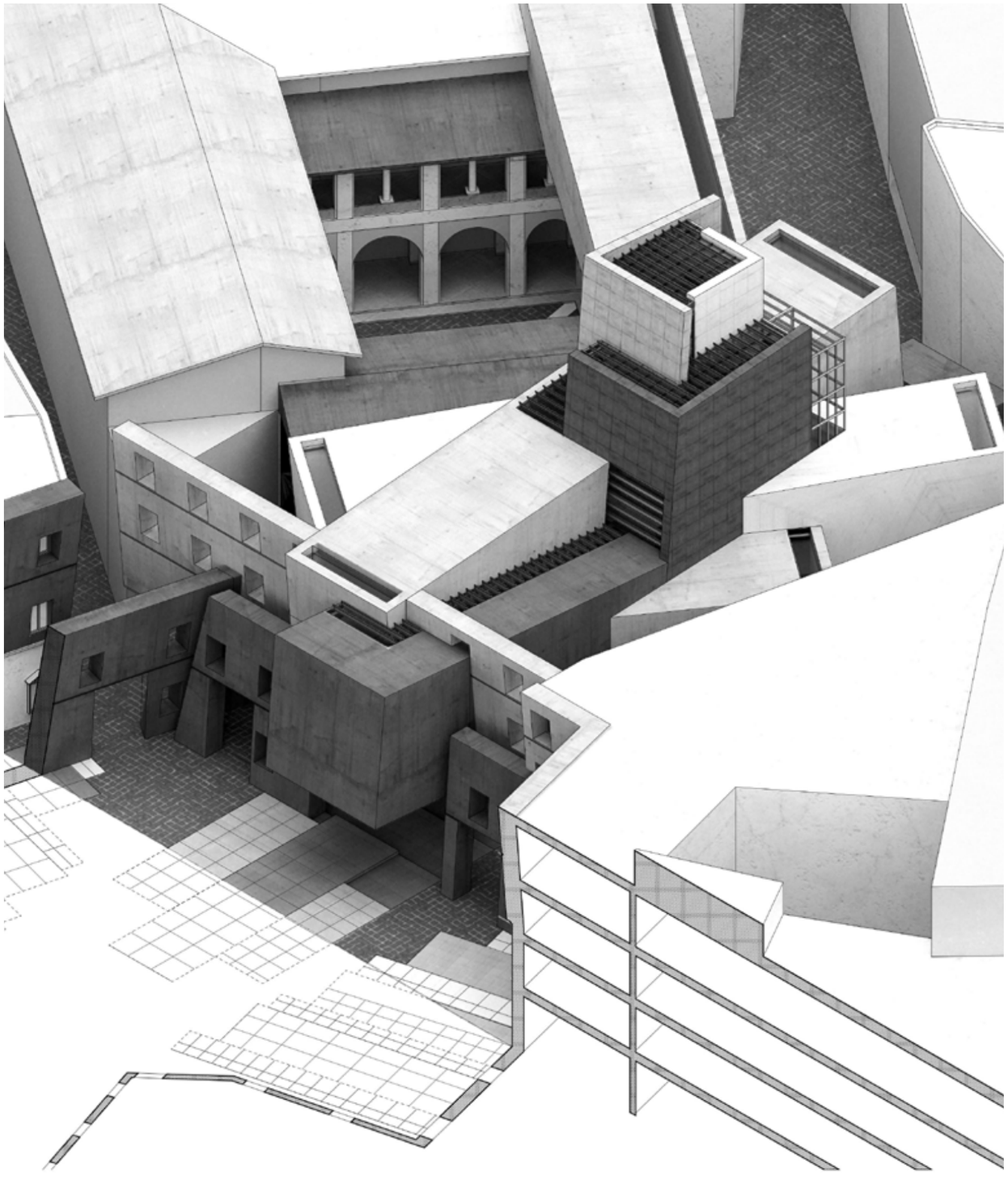
double glazed structural glass
insulation from outside

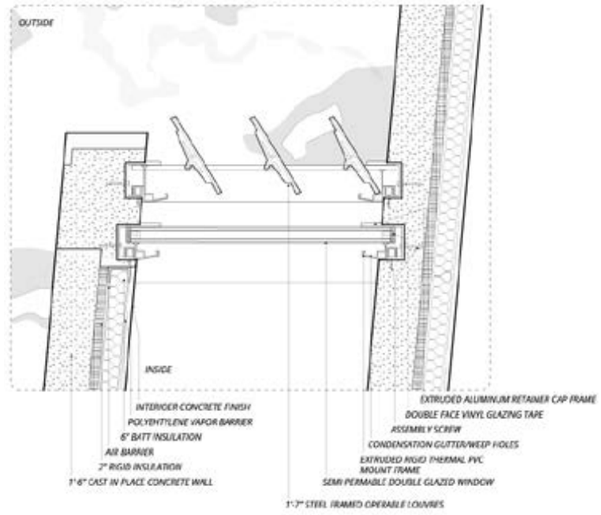
STRUCTURAL CONCRETE ENCLOSURE

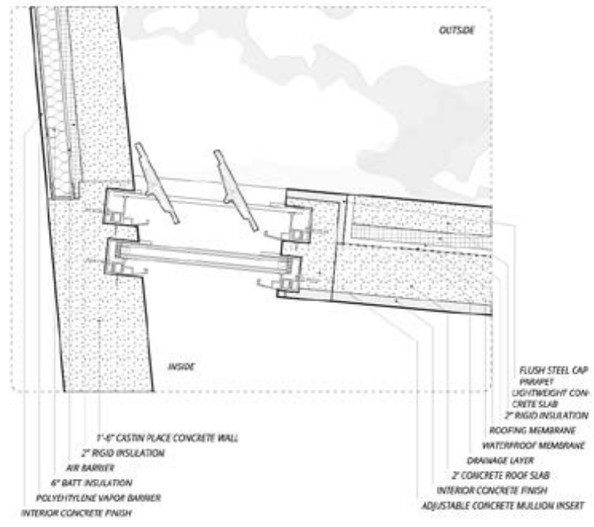
structural concrete enclosure
supported on reinforced columns and beams

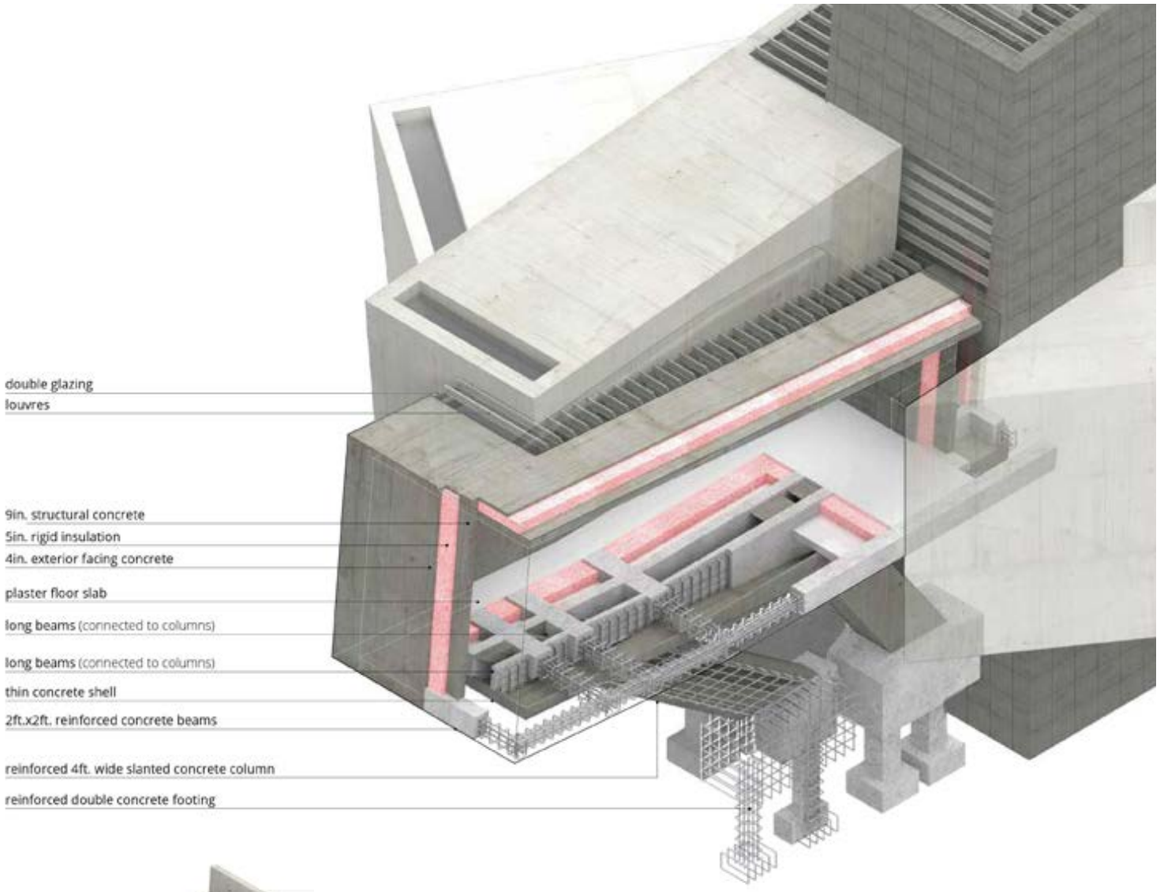
OBSERVATORY CONCRETE WALL

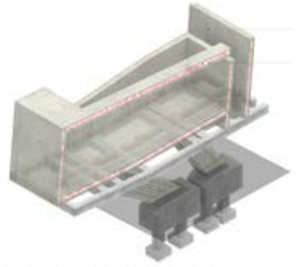
concrete slanted walls
attached to corresponding concrete block reinforced structure







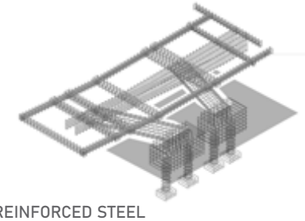




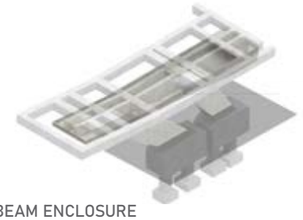
STRUCTURAL CONCRETE + RIGID INSULATION

SLAB BEAMS

REINFORCED STRUCTURE

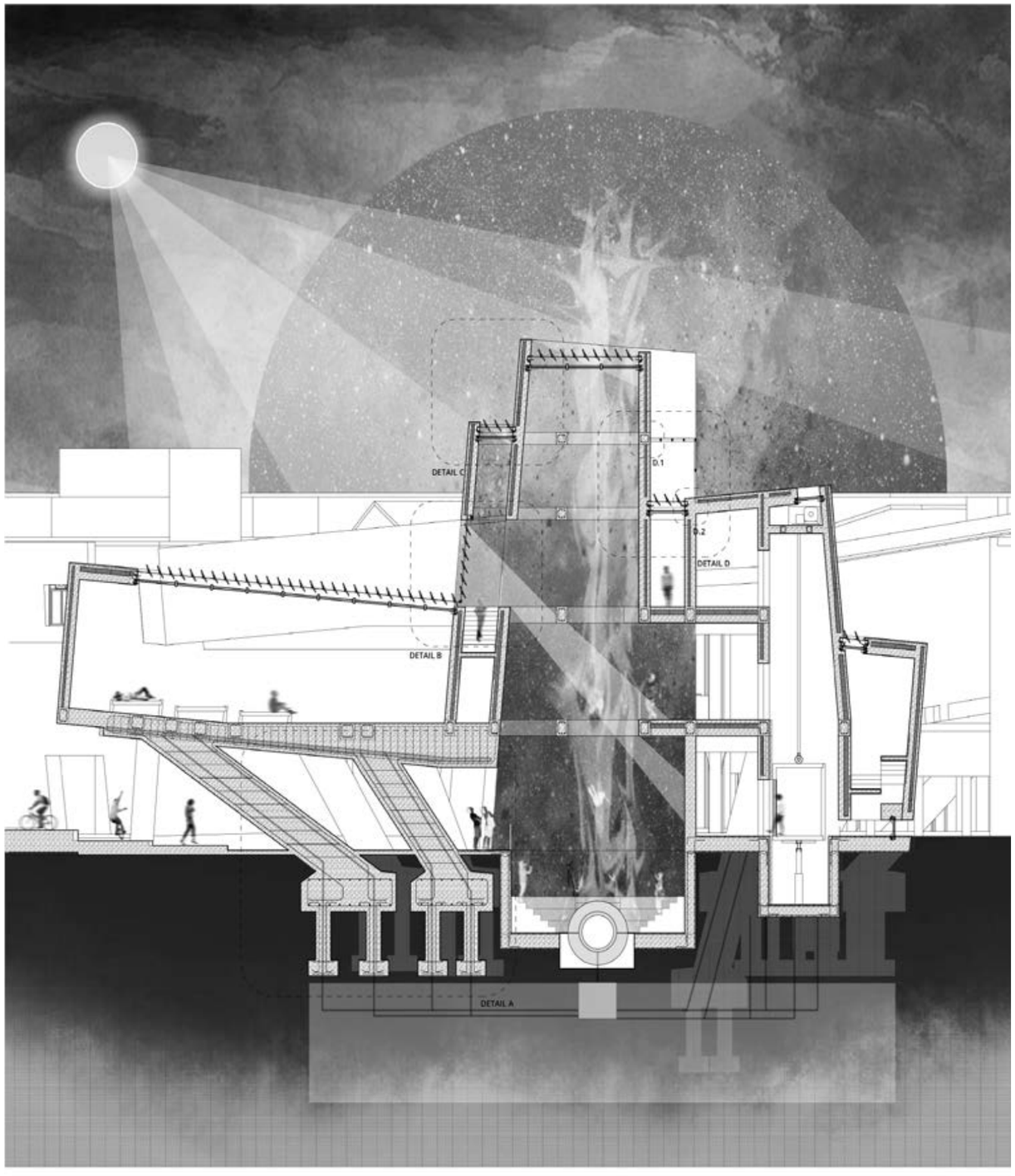


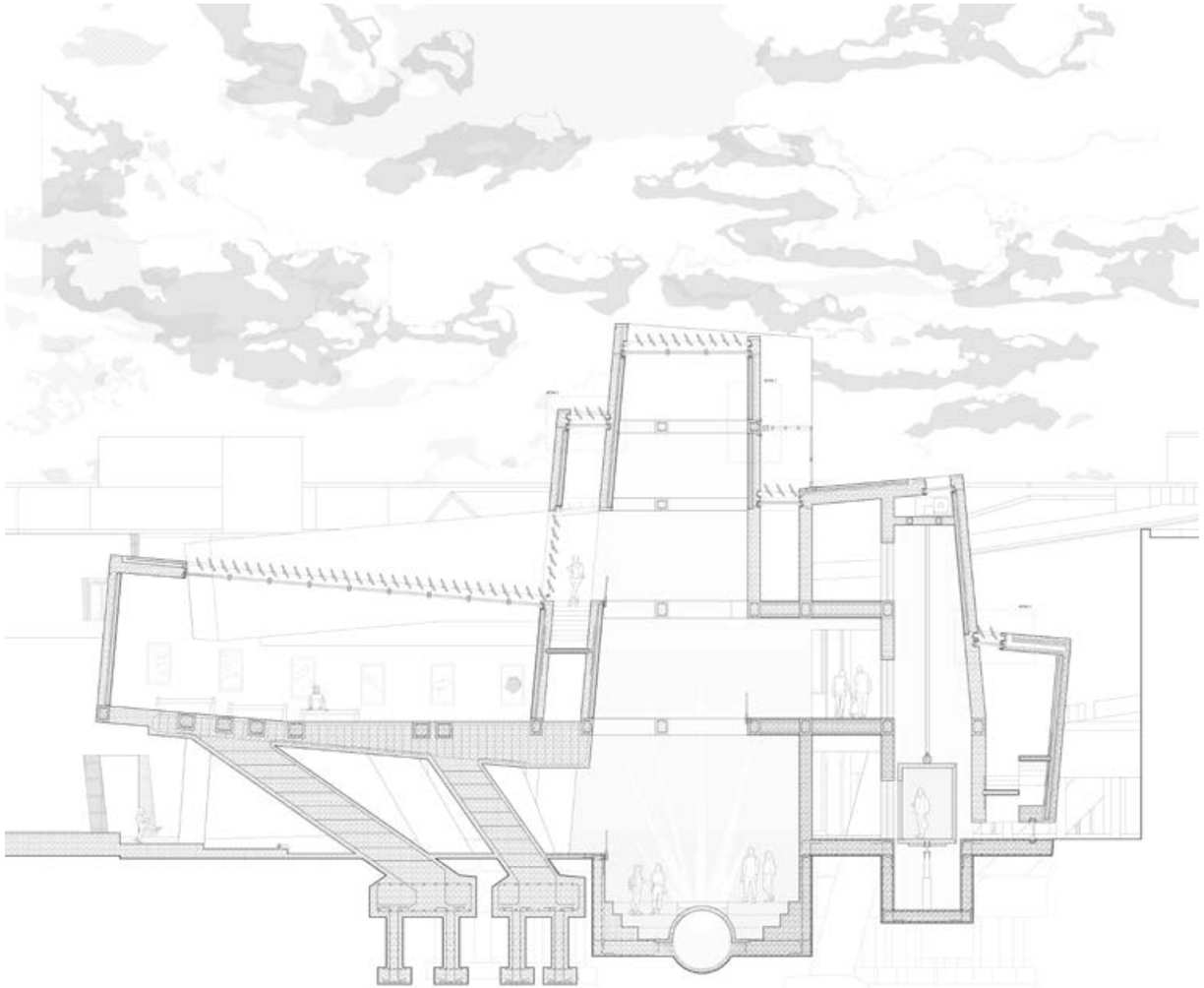
REINFORCED STEEL

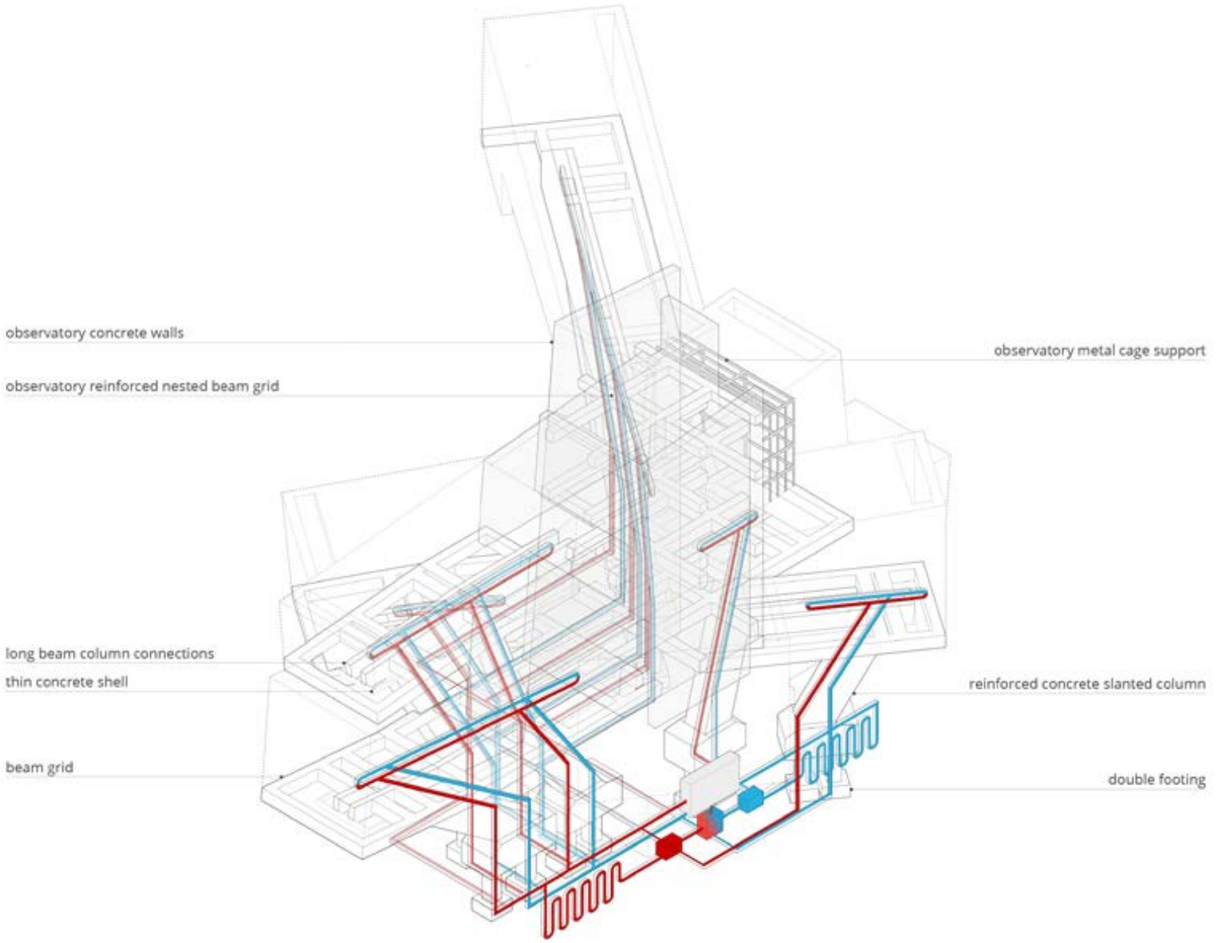


BEAM ENCLOSURE

COLUMN FOUNDATIONS







REINFORCED CONCRETE BEAMS

FLOOR SLABS

REINFORCED CONCRETE BEAMS

THIN CONCRETE SHELL

LONG BEAMS

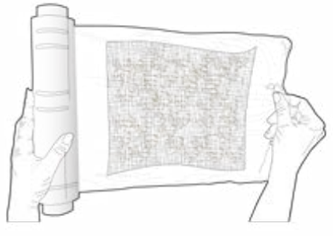
SLANTED COLUMNS + FOUNDATIONS

IMPERMANENT MYCOTECTURES

Bio-Welding as Methodology

Mission Statement

The project aims to shift from traditional construction to growing architecture in sustainable mycelium chambers. Today, climate change necessitates an approach that co-fabricates with nature, introducing this new method of construction. The objective is to let the material form naturally and guide its growth to harness the benefits of mycelium's unique properties. Bio-welding distinguishes mycelium from conventional building materials, offering flexibility through its irregular blooming, a stark contrast to standard building practices. Over time, mycelium, as a subnature, ages more gracefully than materials exploited by the current building industry. Inspired by vernacular architecture, the construction of these ephemeral structures/huts mimics the fabrication of yurts, where felt wraps around a flexible wood lattice. In this project, mycelium sheets grow and are sewn onto a bendable bamboo structure, hardening into a thin shell construction within approximately 2 to 3 hours. Growing mycelium on cheesecloth imparts flexible properties to the bio-material, an atypical characteristic for mycelium. The materials for these huts are easily biodegradable, and the fabrication process requires no industrial machinery or mechanical systems. Except for a fridge to keep the mycelium fresh and a warm, humid environment for growth, the process is highly environmentally friendly.



GROW ON FABRIC

Date

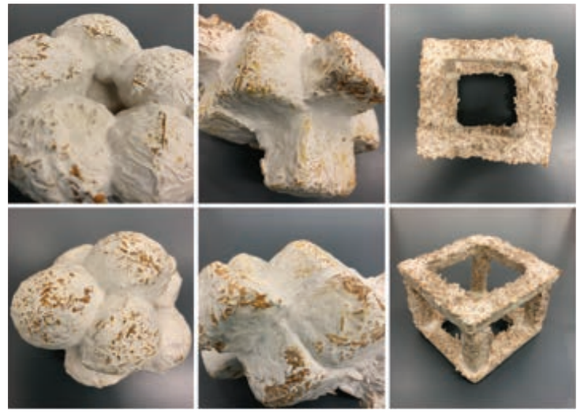
2021-2022

Advisor

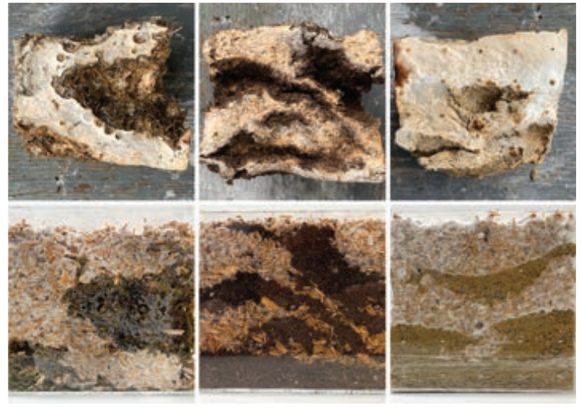
Professor Julie Larsen

Collaborator

Helna Zhen

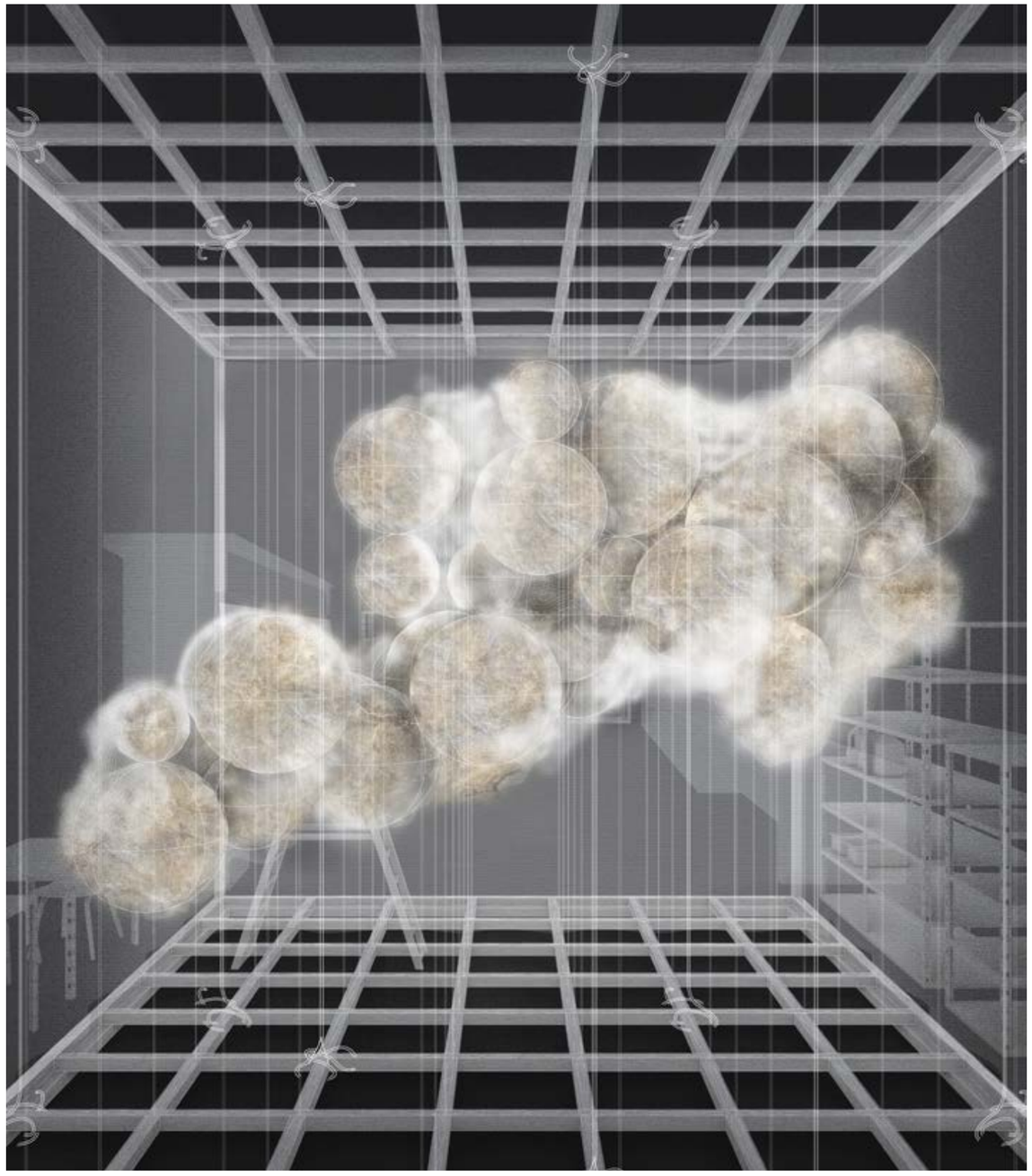


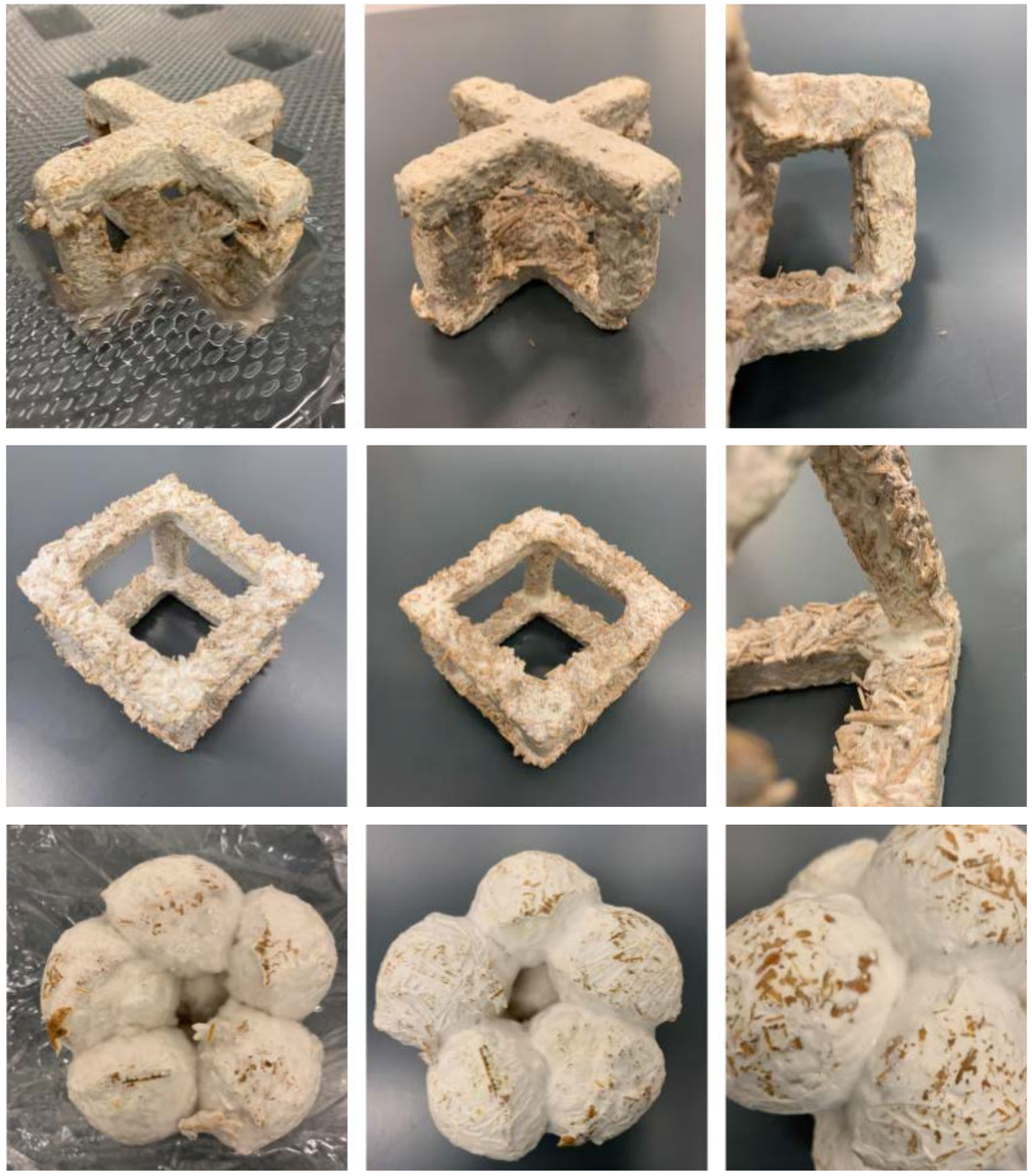
GROWING WITH SELF



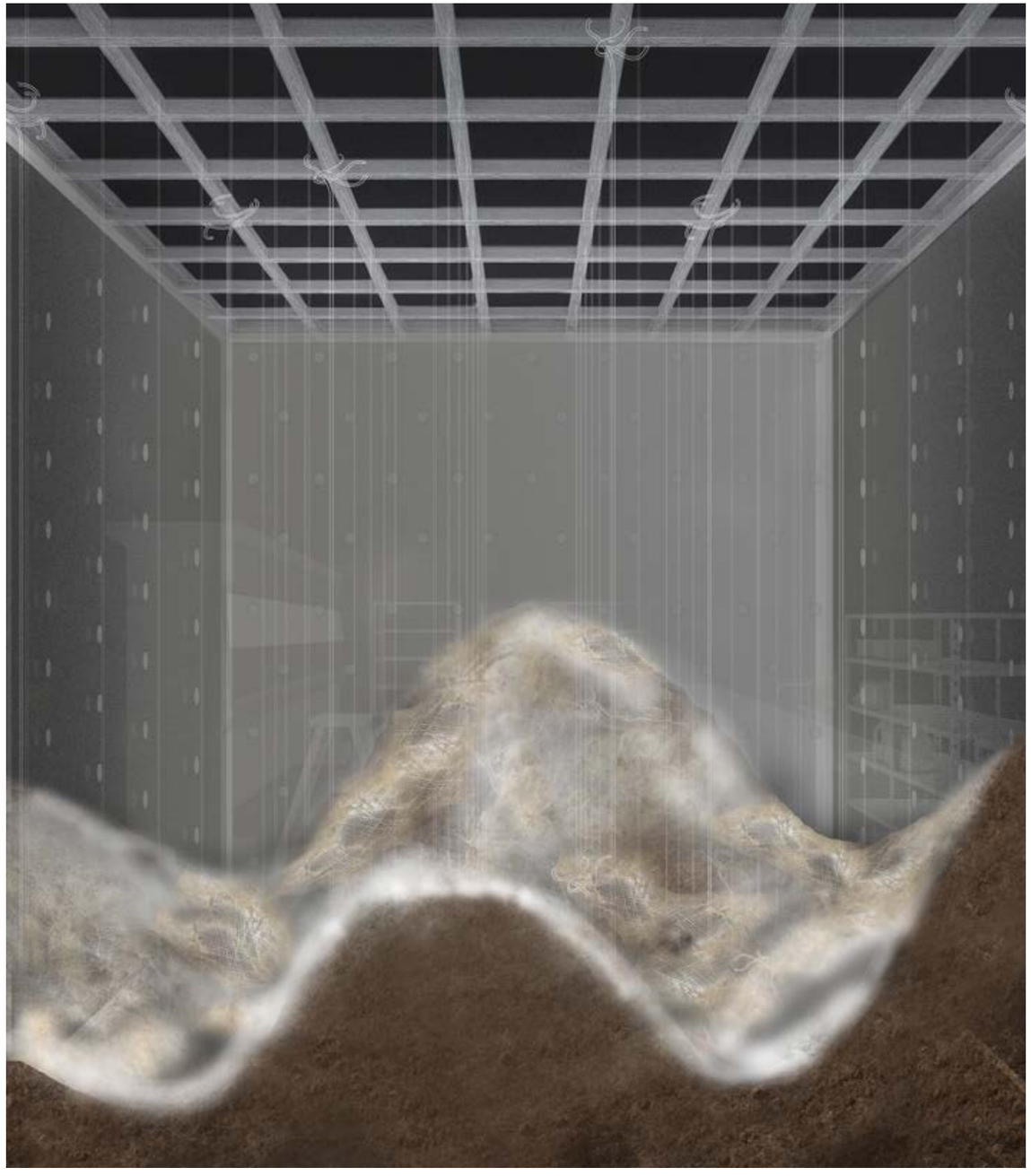
GROWING IN SOIL

GROWING ON FABRIC





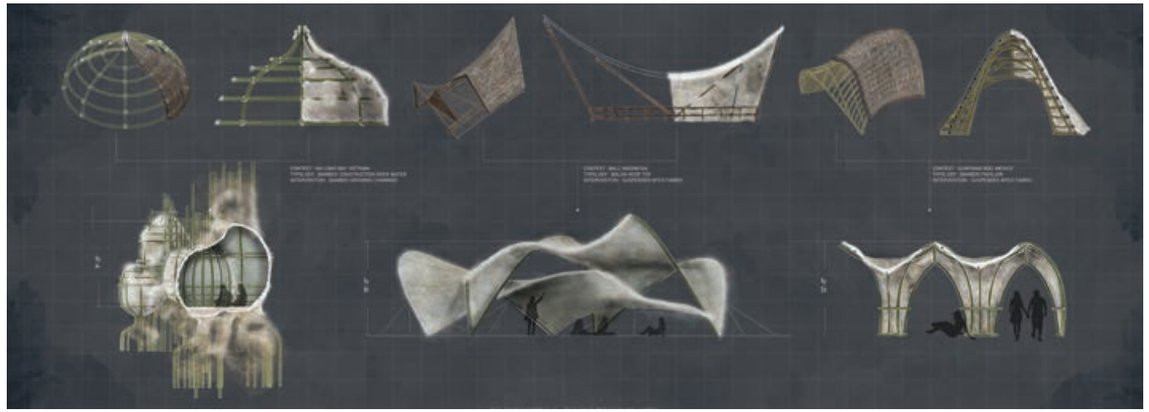
GROWING WITH SELF



GROWING IN SOIL

GROWING ON FABRIC

ECOTOURISM : EPHEMERAL HABITATS



GROWING MYCELIUM FABRIC ON BAMBOO STRUCTURES

PROCESS FOR GROWING ON FABRIC

GROWING MYCO-FABRIC ON BAMBOO STRUCTURE

MYCELIUM BUILDING SYSTEMS IN RWANDA

Mycelium Research Project

Mission Statement

This project explores the potential of mycelium for sustainable, low-carbon building systems by developing modular prototypes and hybrid materials. Fungal mycelium, when provided with the right nutrients, can grow on various organic materials like cardboard and agricultural waste, transforming into lightweight, biodegradable materials ideal for architectural use. Focused on a case study in Rwanda, the project aims to implement mycelium-based construction for both urban and rural settings, utilizing local resources and recycled materials. The landscape strategy fosters a fluid connection between building forms, pathways, and waterways, integrating water routes to create a humid environment essential for mycelium growth.

BUILDING ALONG THE CONTOURS

Date

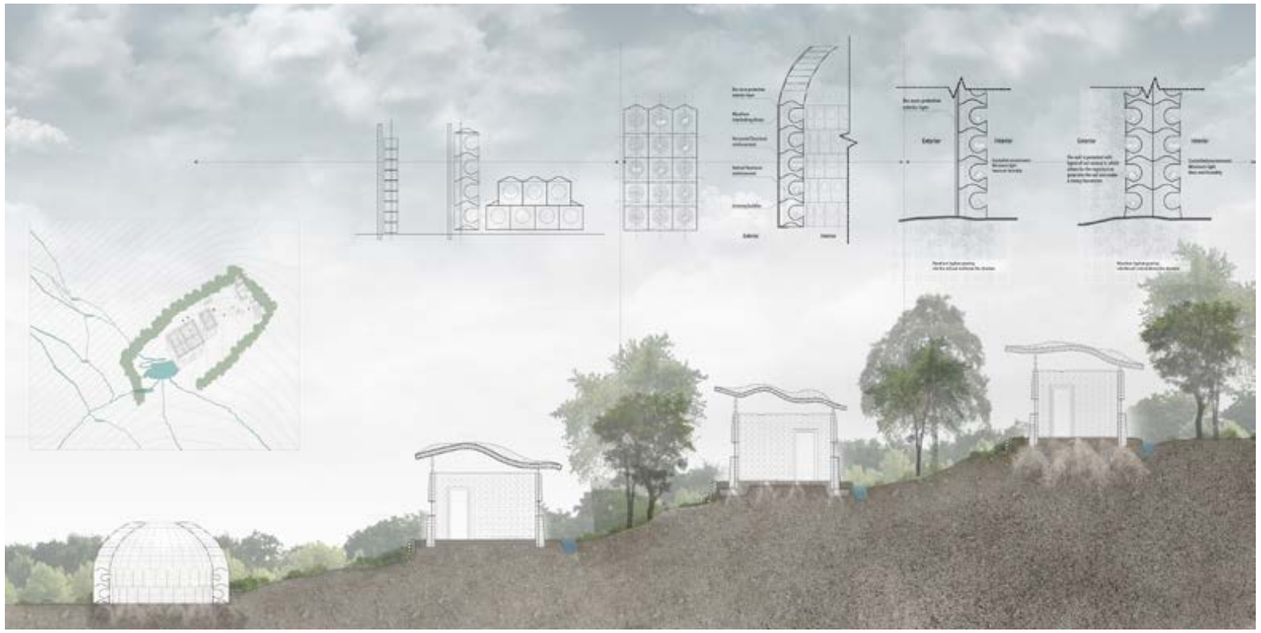
Spring 2022

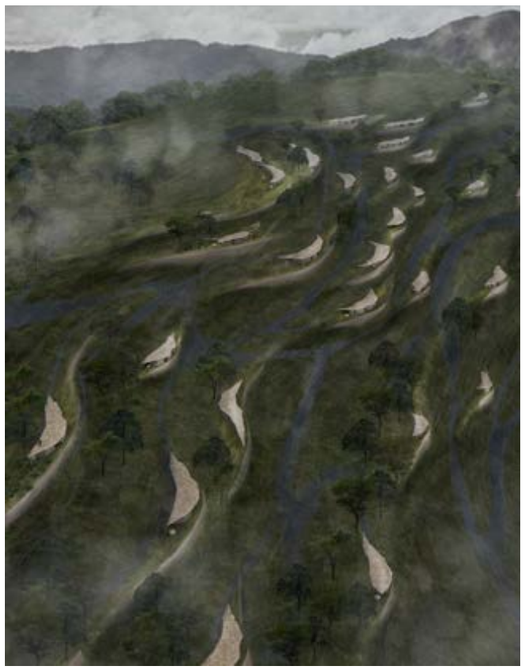
Advisor

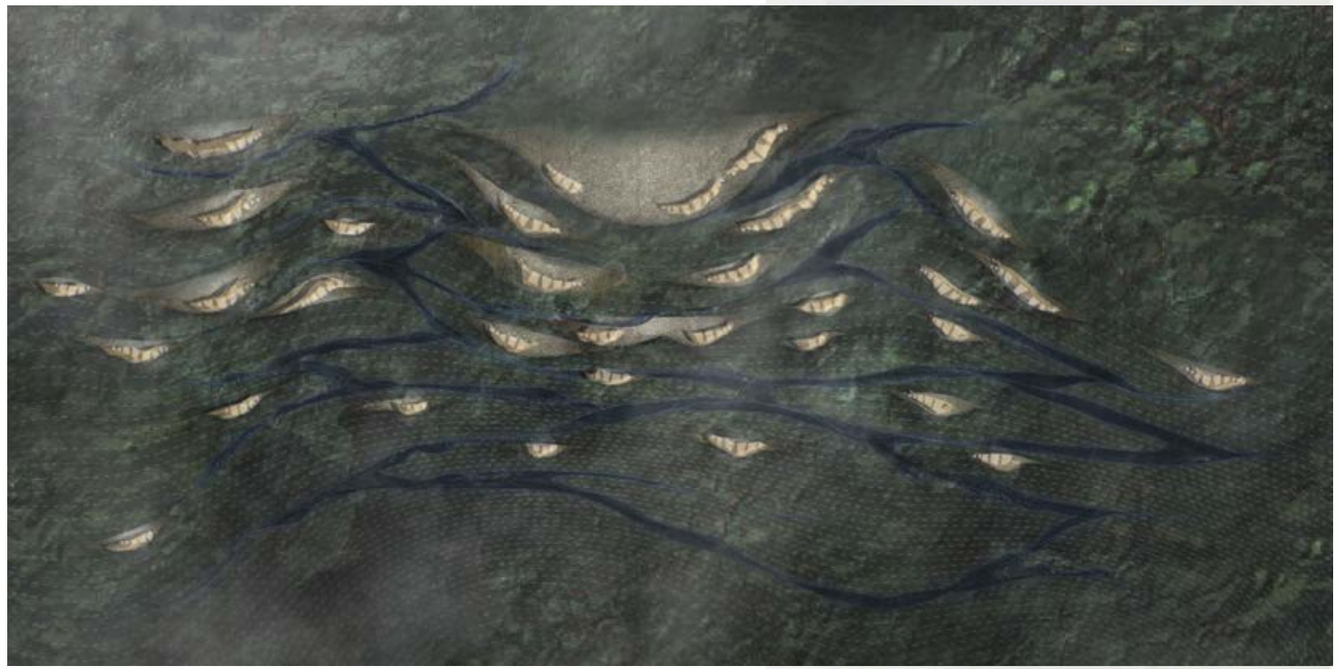
Undergraduate Chair Dr. Daekwon Park

Collaborator

Helna Zhen





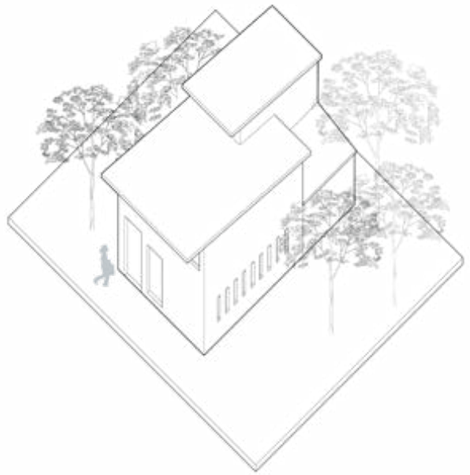


microHOUSE

Cabin in the Woods | Syracuse, NY

Mission Statement

The mission of the Micro House project is to demonstrate abilities and understanding of the construction of building systems, specifically : facade systems, foundation systems, roof typologies, glazing systems, along with some understanding of structure. The microHouse focuses on prefabrication as well as permanent structures. It embodies the notion of affordable and adaptable solitary living in nature through the use of repurposed and lightweight materials. This quaint living space is designed to feel like a modern day brutalist home with the lightweight concrete panels locked into place within a foundation as shown in the drawings. Being located typically within dense forests, one can experience the beauty of nature while being within the comfort of the modern style log cabin.



DETAIL DRAWINGS FOR CABIN

Date

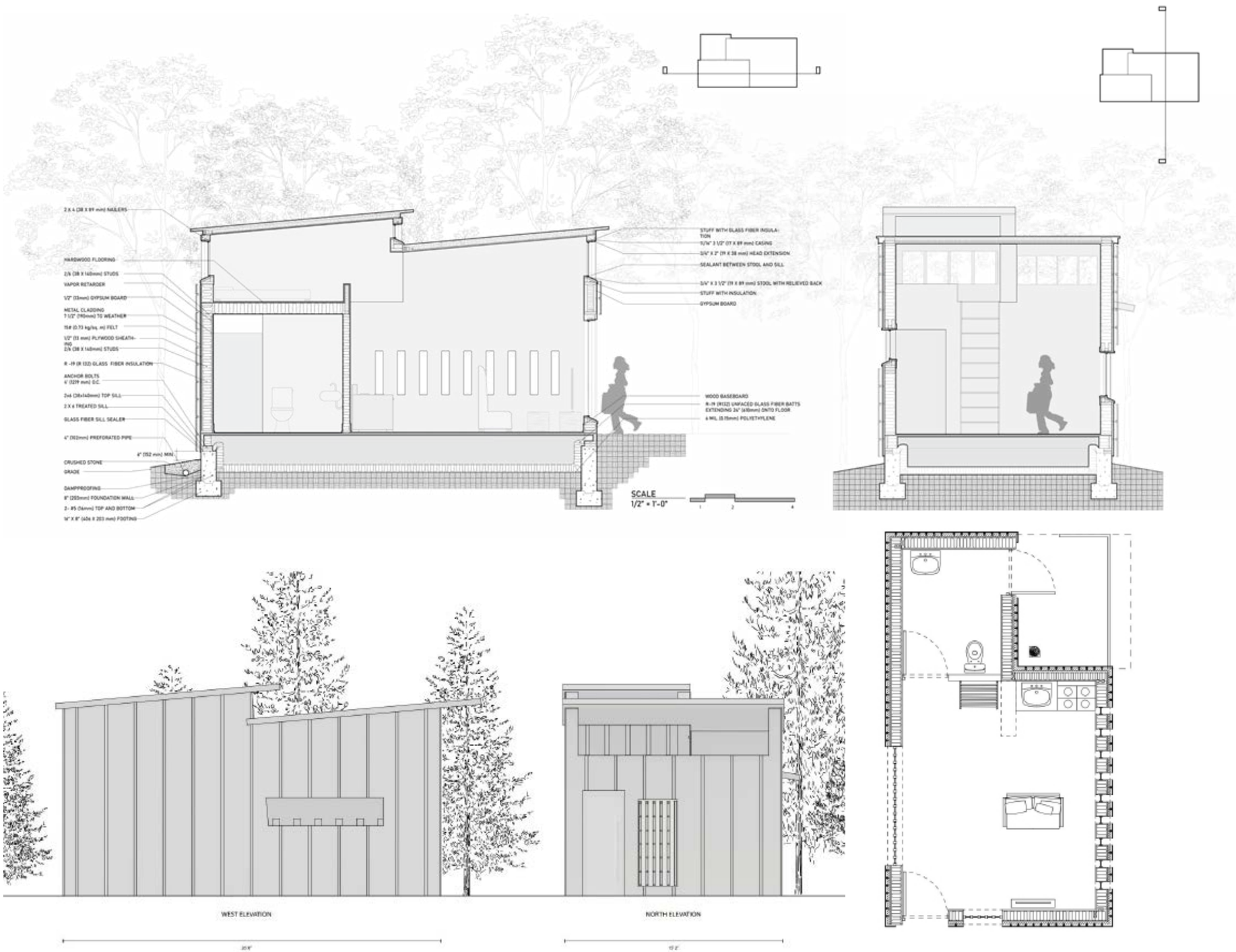
Fall 2022

Advisor

Professor Jenny Sabin

Collaborator

Neal Lucas Hitch

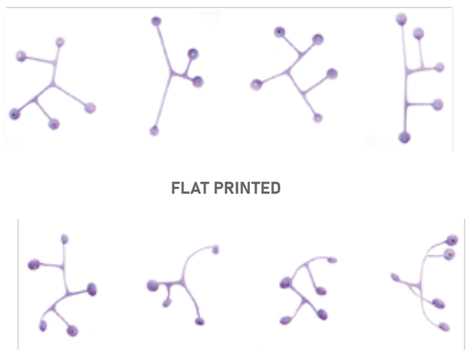


SELF-ASSEMBLING XYLOS

Subaquatic 4D Printing of Flat Modules

Mission Statement

This project explores the subaquatic self-assembly of flat-packed modules to form complex lattice structures, ultimately facilitating adaptive remediation systems in the environmental sector. It utilizes an innovative fabrication technique where stiff modules are 3D printed flat and then submerged in hot water. Once in the water, they thermally deform and self-assemble based on the size and shape of their container. The individual elements of Xylo are inspired by the biological properties of kelp and leaves. Kelp, when submerged, exhibits pneumatic and kinetic properties due to the air bladders that develop at the ends of its leaf blades. Similarly, Xylo modules incorporate air pockets located in magnetized nodes at the ends of each branch, allowing for buoyancy and self-organization. Through these design features, Xylo achieves a system capable of adaptive environmental remediation.



Date

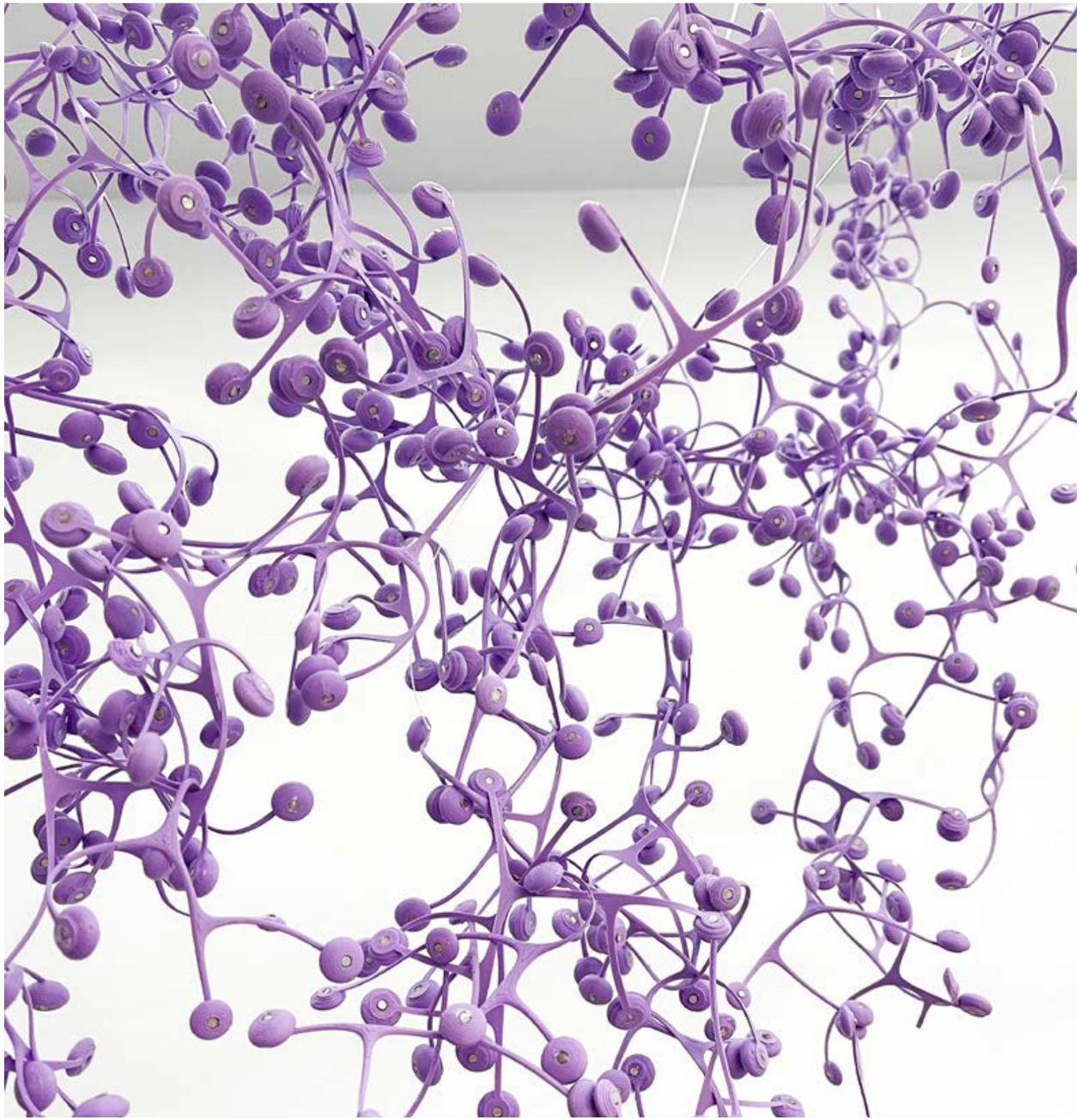
Fall 2022

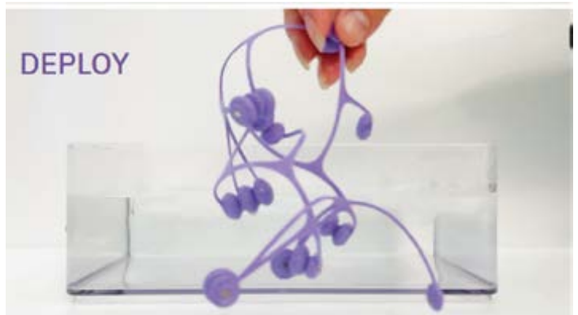
Advisor

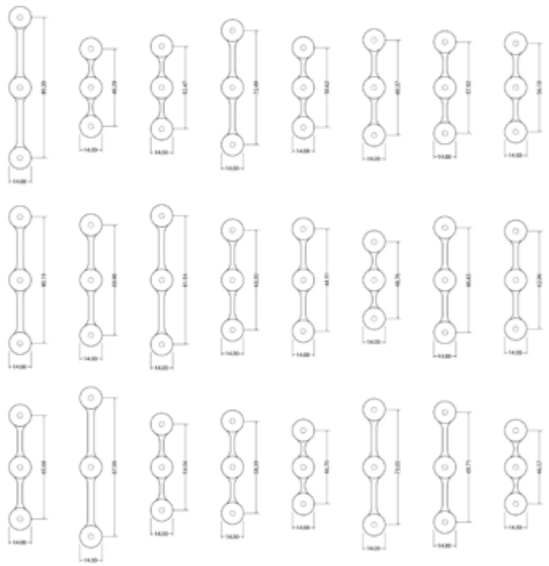
Professor Jenny Sabin

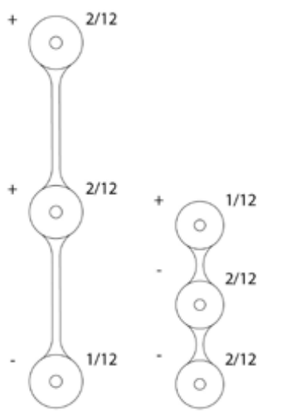
Collaborator

Neal Lucas Hitch

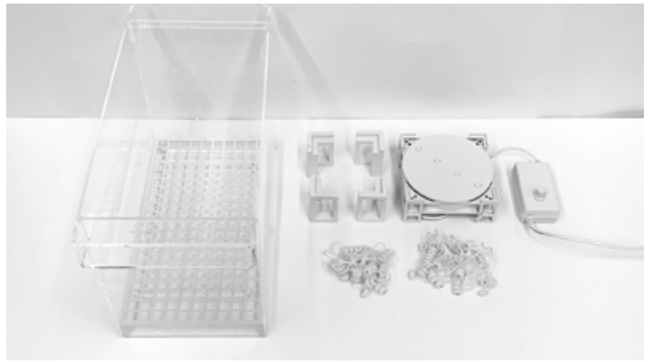


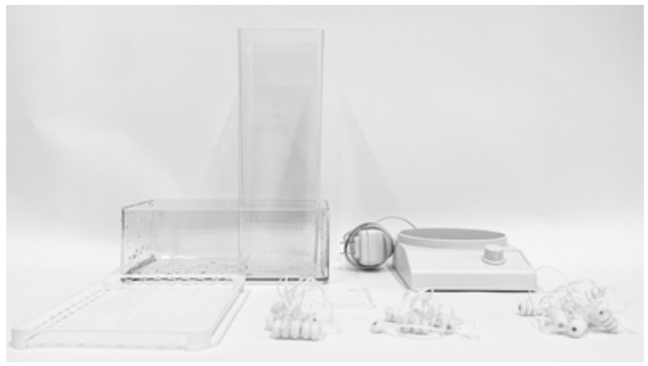


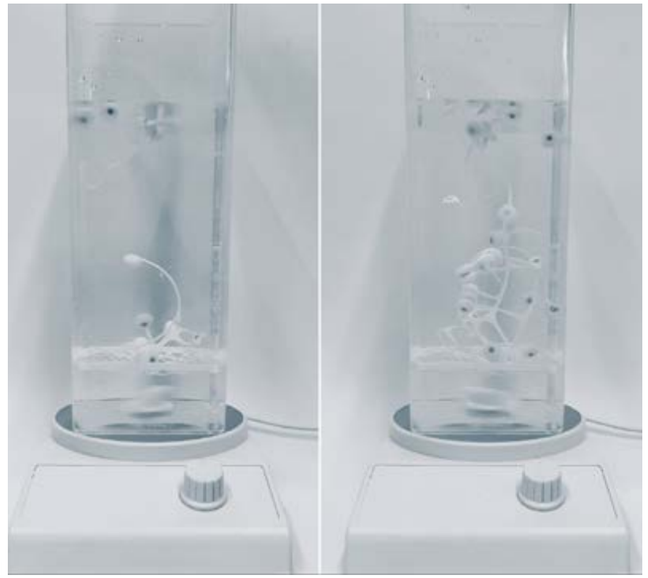


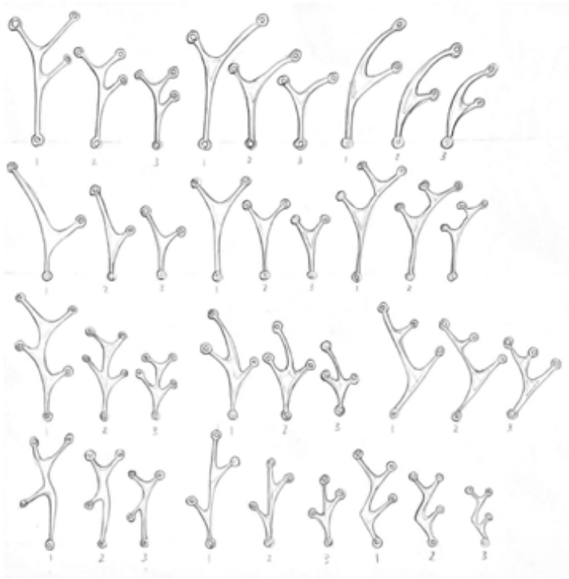


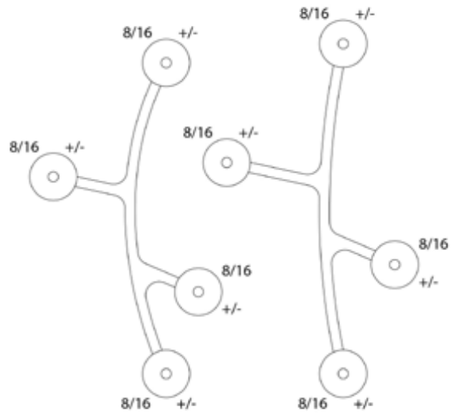
36 possible chances of contact between two magnets
5 will result in magnetic seel
14% chance of making a seel



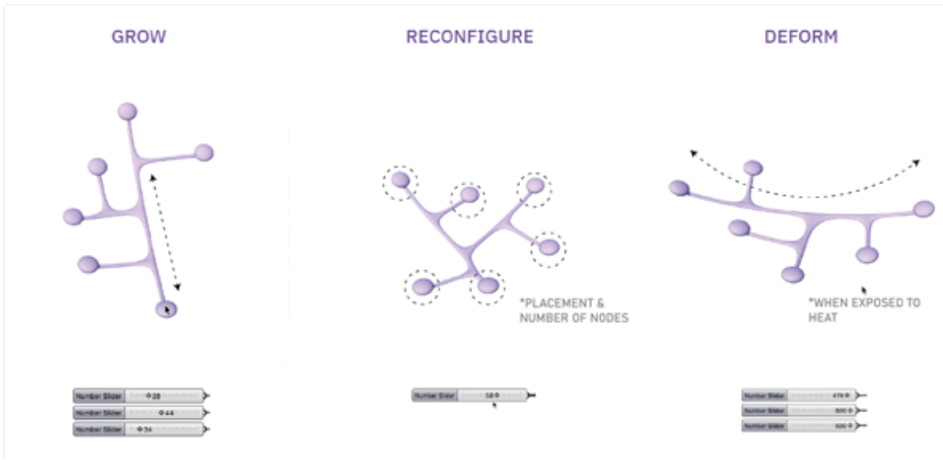


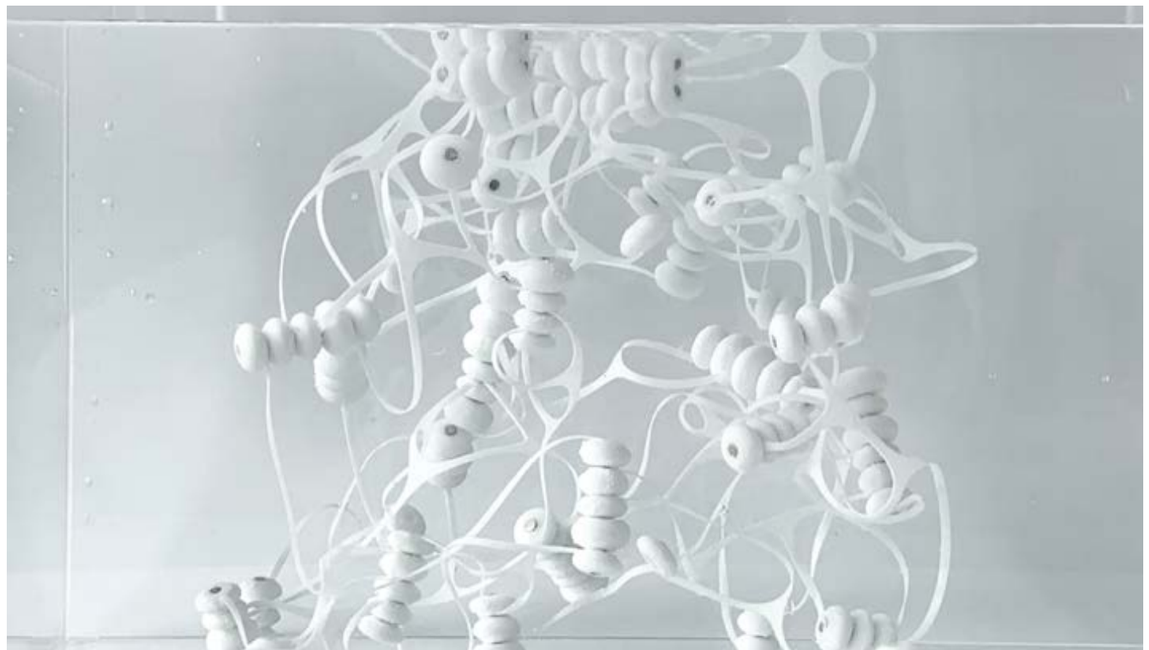


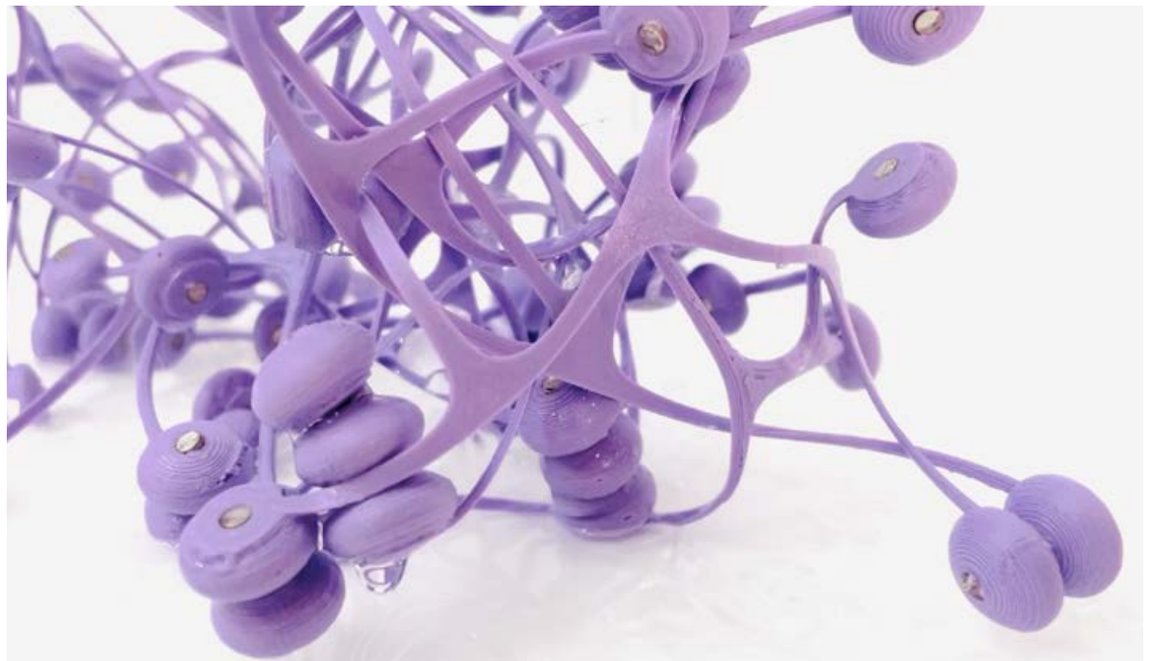


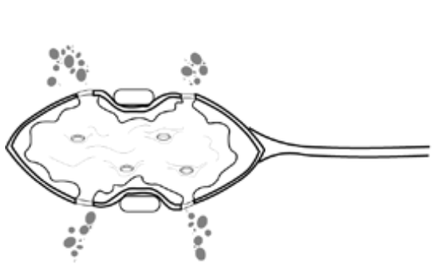


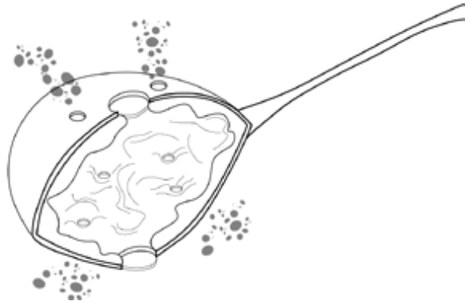
64 possible chances of contact between two magnets
32 will result in magnetic seel
50% chance of making a seel

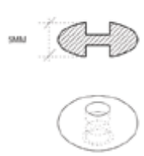




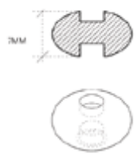




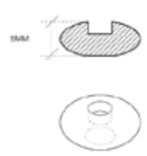




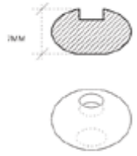
Small 2-Sided
Print Time: 22 minutes
Buoyancy: Sink
Stickiness: **50%**



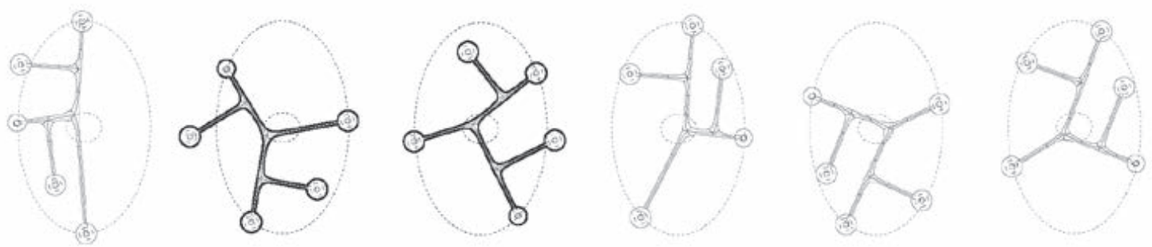
Medium 2-Sided
Print Time: 24 minutes
Buoyancy: Neutral
Stickiness: **50%**

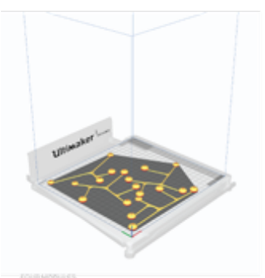


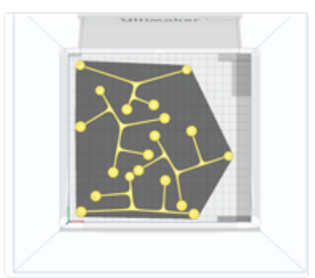
Small 1-Sided
Print Time: 28 minutes
Buoyancy: Float
Stickiness: **14%**

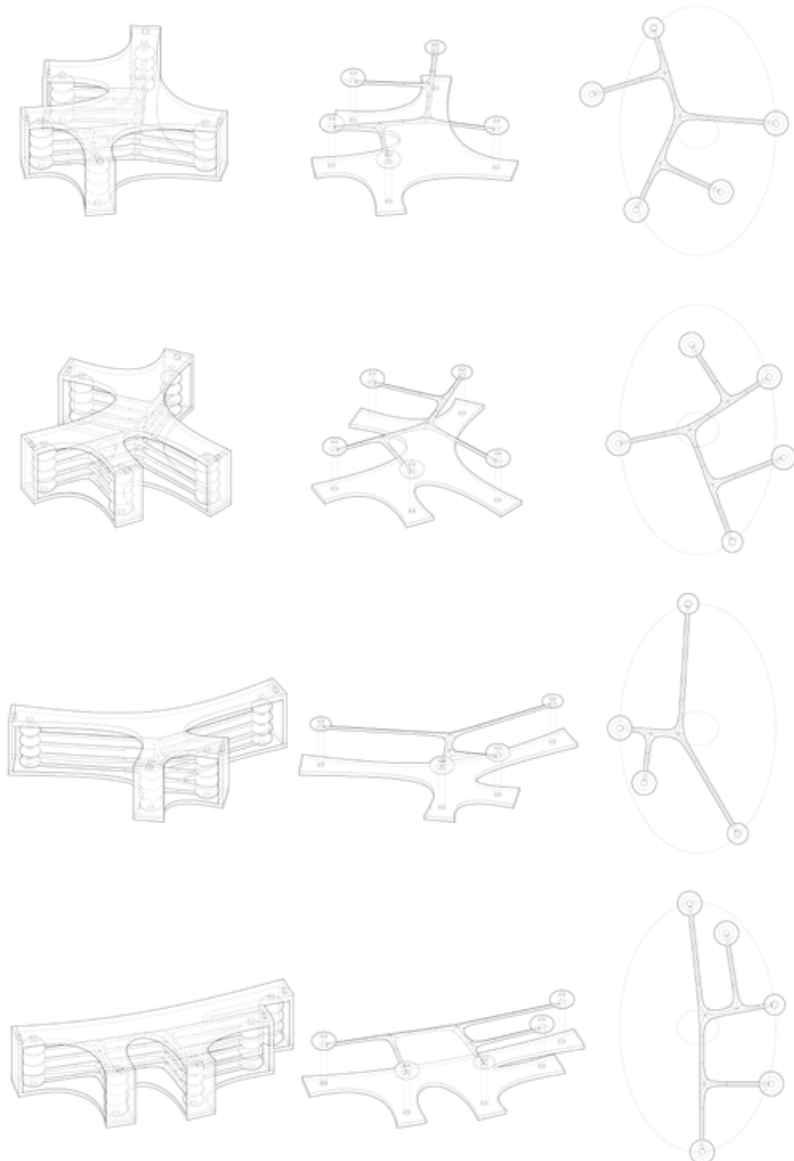


Medium 1-Sided
Print Time: 30 minutes
Buoyancy: Float
Stickiness: **14%**



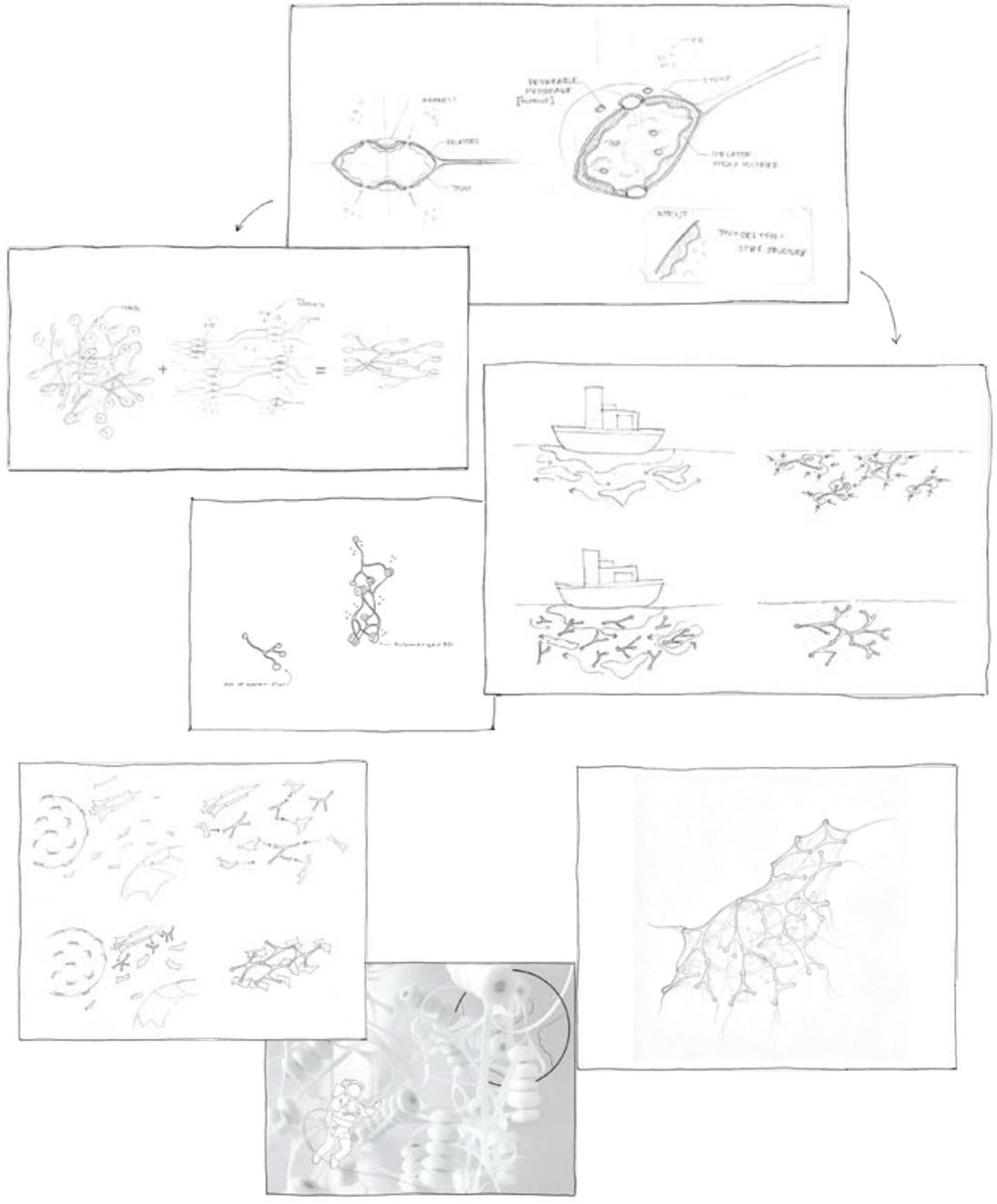




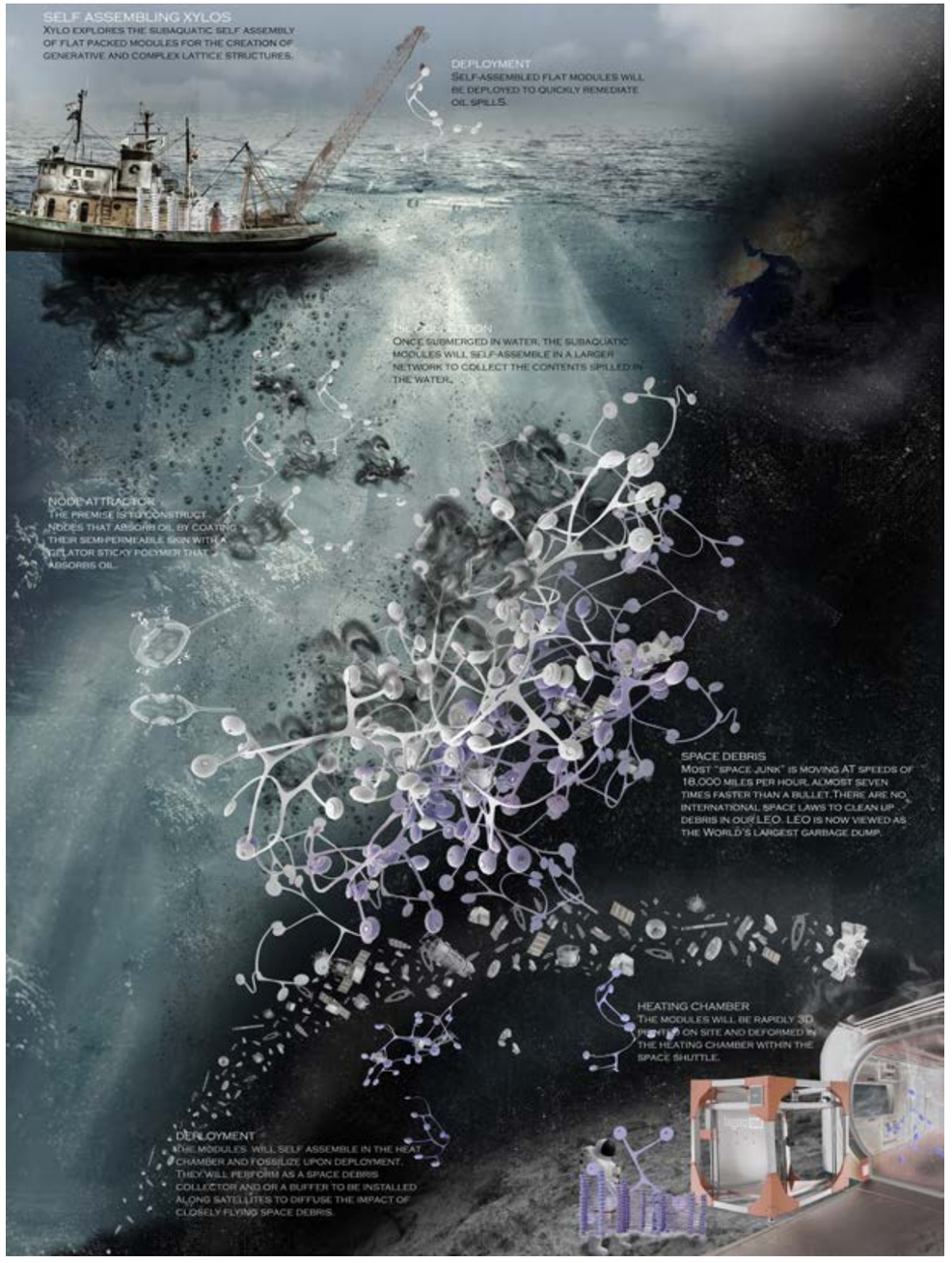


COMPACT STORAGE

PROCESS DEMONSTRATING CONSTRUCTION



INITIAL SKETCHES : UNIT TO WHOLE



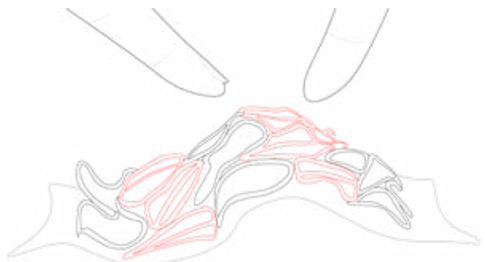
APPLICATION FOR SELF-ASSEMBLING XYLOS

MORPHOGENIC 4D PRINTING

Inspired by Plant Cell Growth Behaviors

Mission Statement

This project explores the construction of responsive fabrics shaped via additive manufacturing, specifically focusing on 3D printing multi-material patterns inspired by the morphogenic behaviors of young Arabidopsis thaliana onto pre-stressed fabrics. This fabrication method is considered 4D printing, a technique that leverages smart materials to optimize the fabric's morphology post-print. The goal of 4D printing is to provide a backbone, like a cell wall, for structureless mediums such as fabric to transform into emergent 3D forms. The complexity lies in the 4D printing patterns, allowing varying stiffness, stretch, and dynamic behavior. The materials used are informed by plant cells' mechanical properties, which, though generally fixed in mobility, exhibit shape changes due to spatiotemporal variations across the sepal. Altogether, the behaviors observed in Arabidopsis thaliana offer potential for adaptive architectural surfaces that leverage 4D printing to produce multi-material skins responsive to external stimuli.



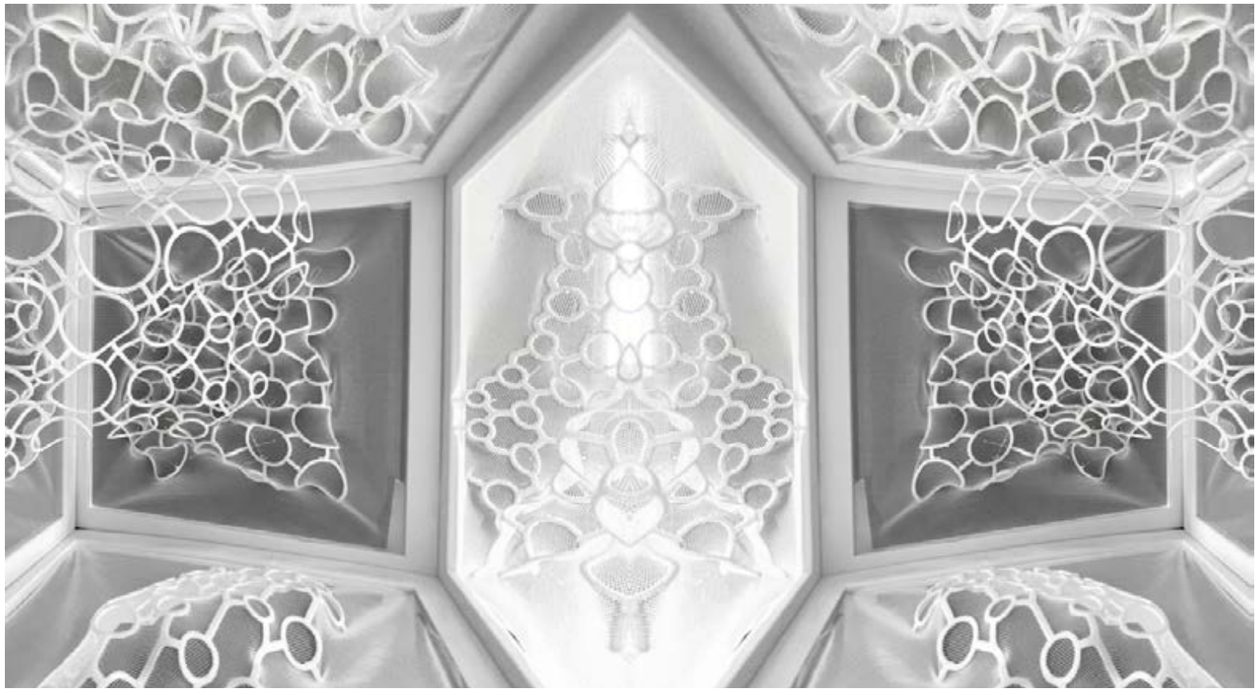
4D PRINTING

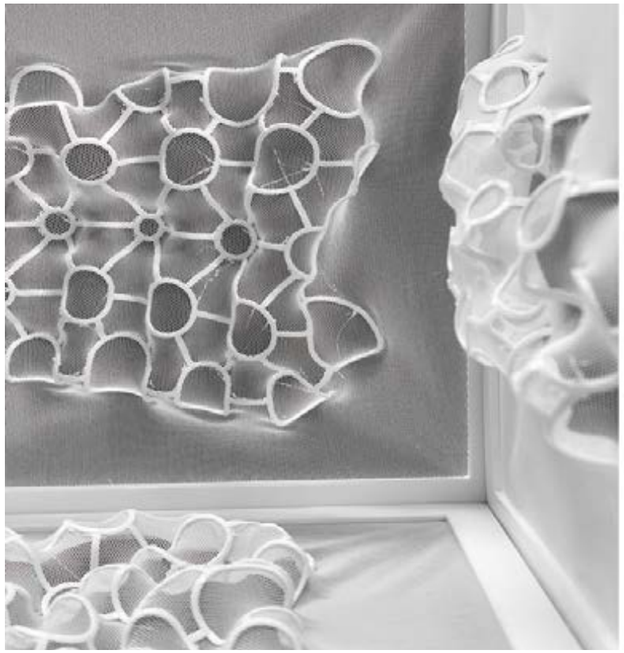
Date

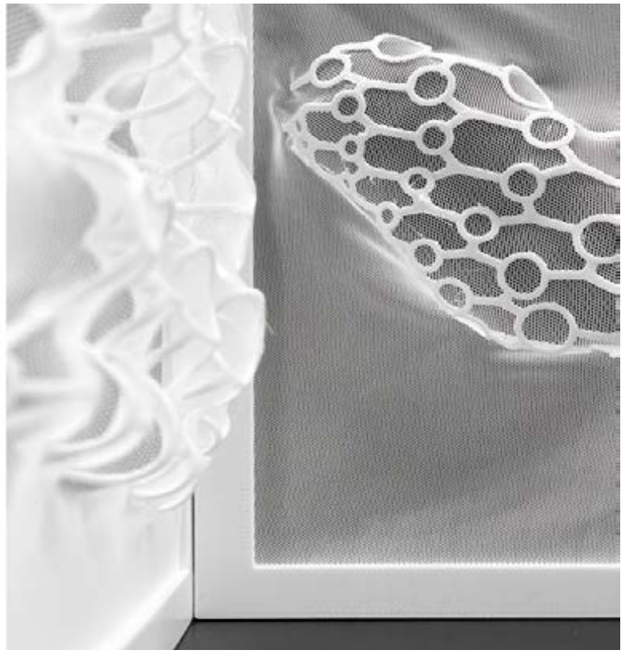
Spring 2024

Advisor

Professor Jenny Sabin

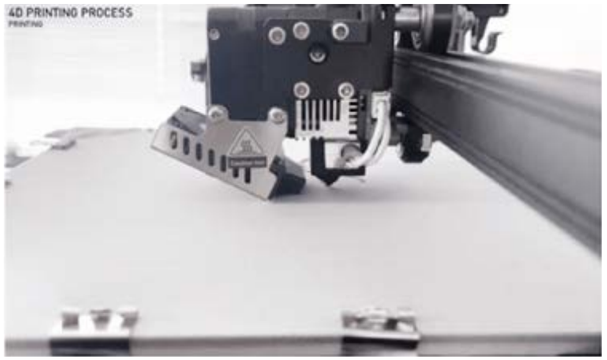






EXPLORATIVE SPACES

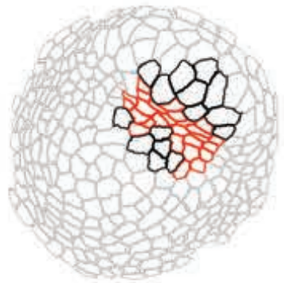
PRESTRESS FABRIC

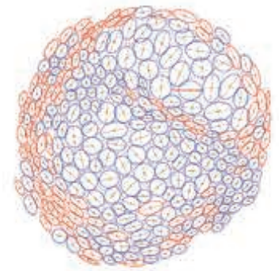


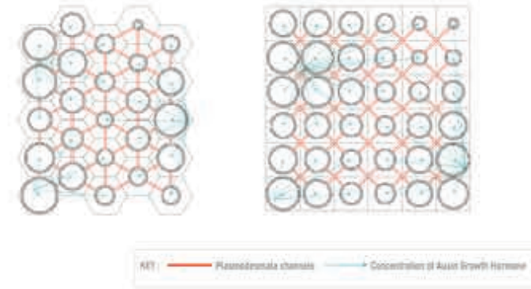
3D PRINT

TEST BEHAVIOR

4D PRINTING PROCESS





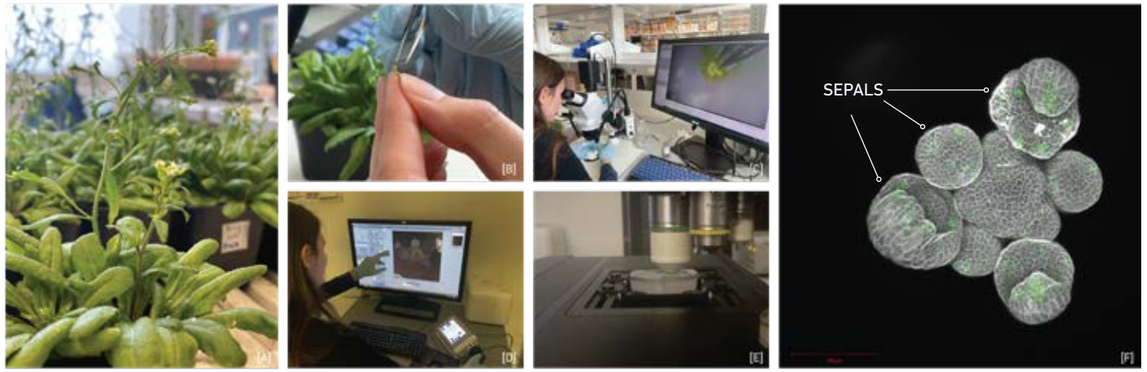


BIOLOGY — TRANSLATION — APPLICATION

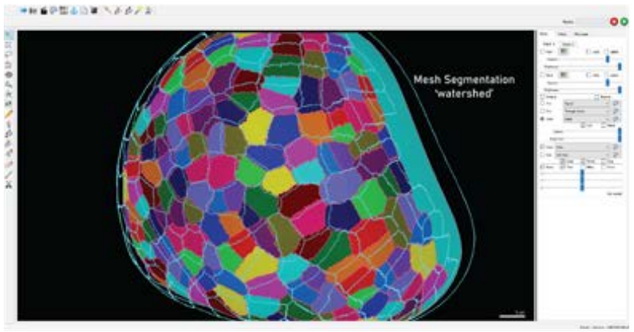
The Roeder Lab — The Jenny Sabin Lab

[1] [2] [3]

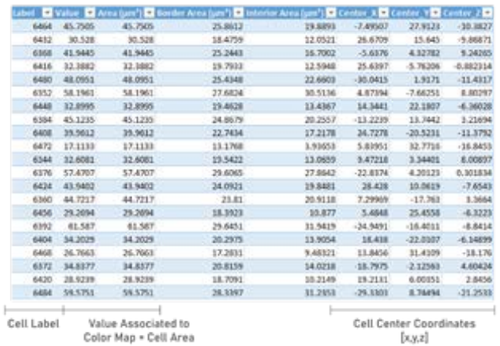
INTERDISCIPLINARY WORKFLOW



PLANT IMAGING + EXTRACTING TIFF STACKS

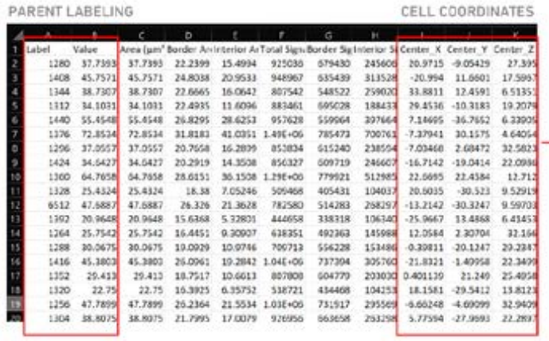


MORPHOGRAPHX SOFTWARE : MESH SEGMENTATION

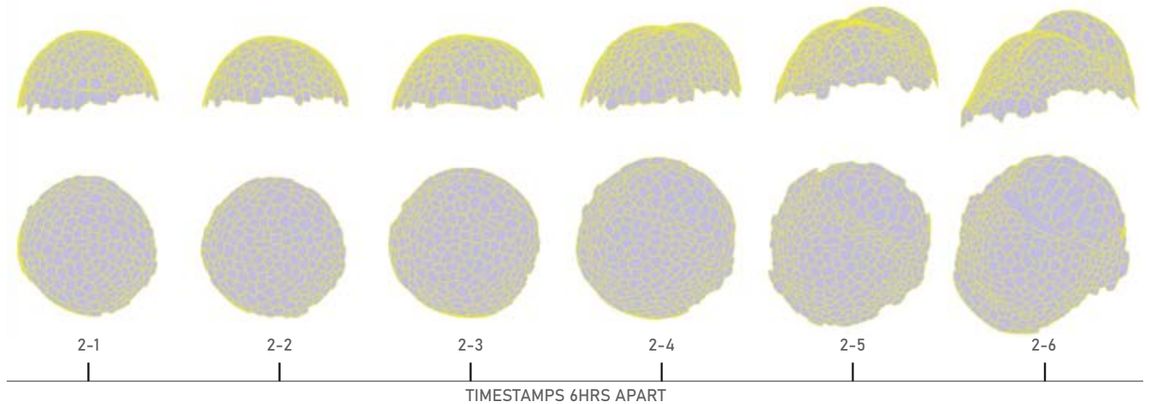


MORPHOGRAPHX SOFTWARE : COORDINATE DATA

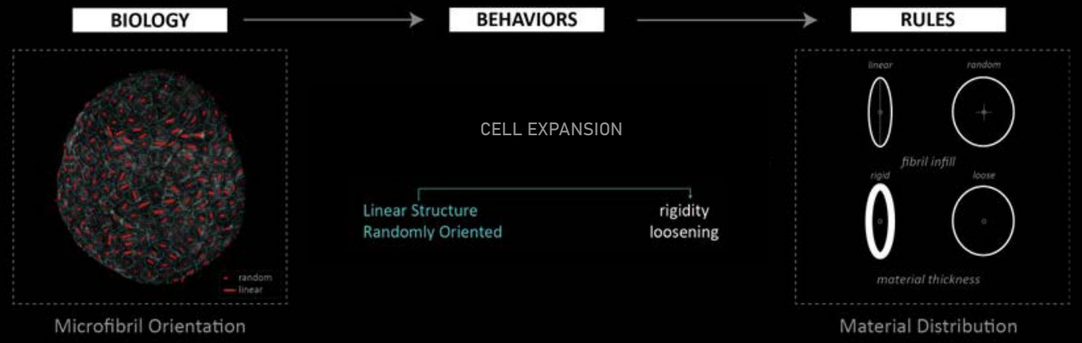
MESH AND CELL CENTROID EXTRACTION



C# + GRASSHOPPER FOR DATA ANALYSIS

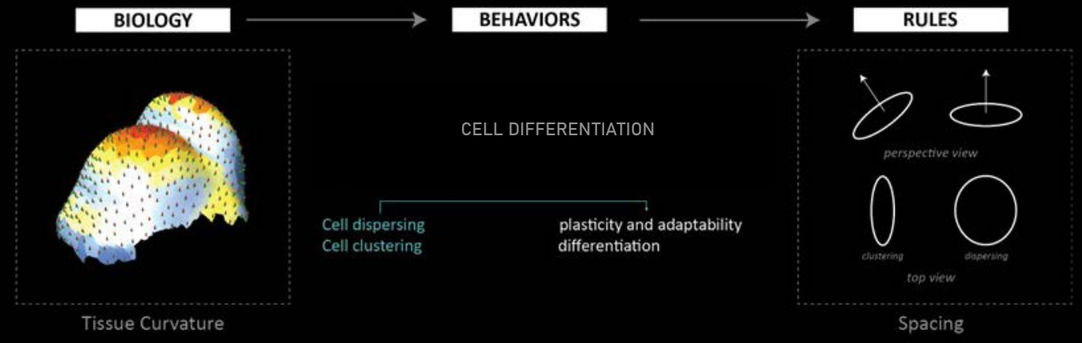


SEPAL MESHES IN RHINO



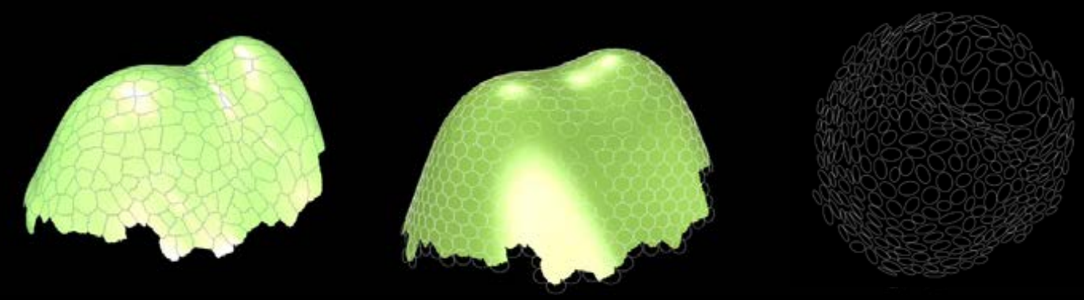
Microfibril Orientation

Material Distribution



Tissue Curvature

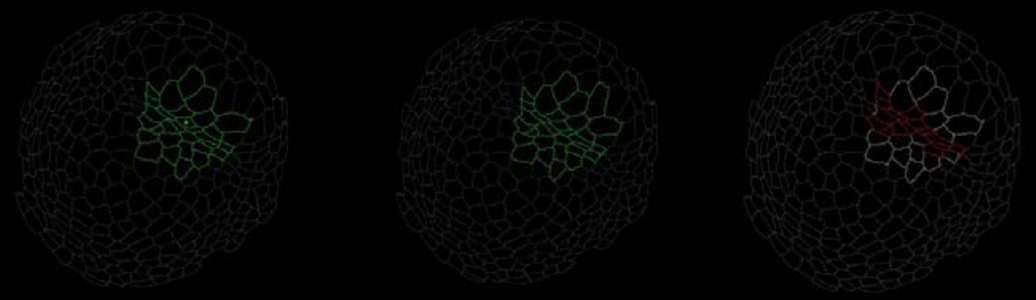
Spacing



[1] SEGMENTED CELL MESH

[2] CIRCLE PACKING

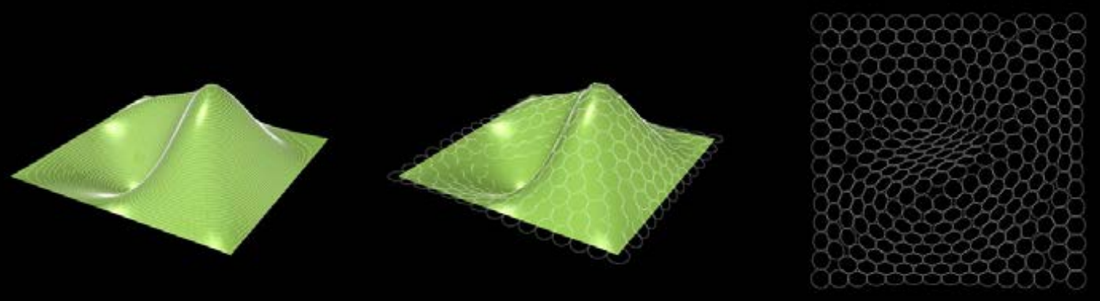
[3] CIRCLE + ELLIPSOID PACKING



[1] SELECT REGION

[2] SELECT # OF CELLS

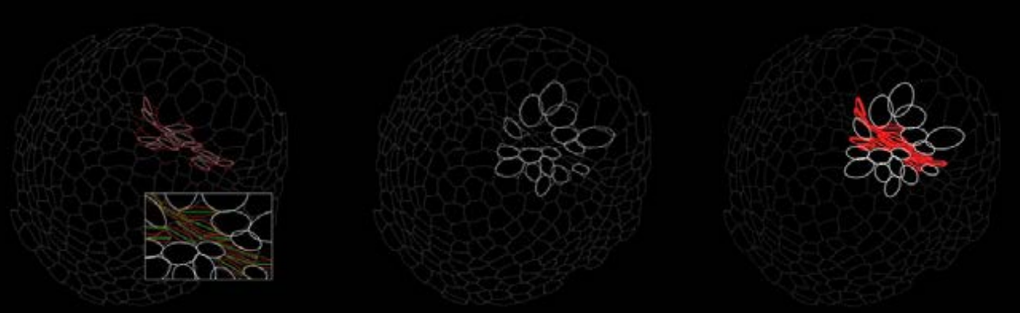
[3] DIVIDE BY REGION



[1] SEGMENTED CELL MESH

[2] CIRCLE PACKING

[3] CIRCLE + ELLIPSOID PACKING

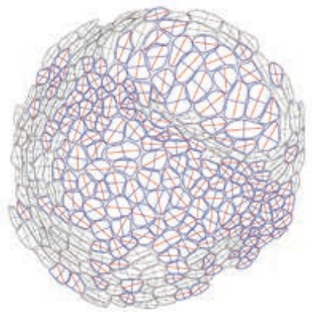


[1] SADDLE CELLS WITH GRAIN

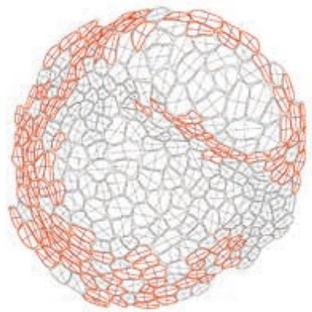
[2] PRIMORDIAL CELLS

[3] VARYING THICKNESS

drmyl timestamp 05

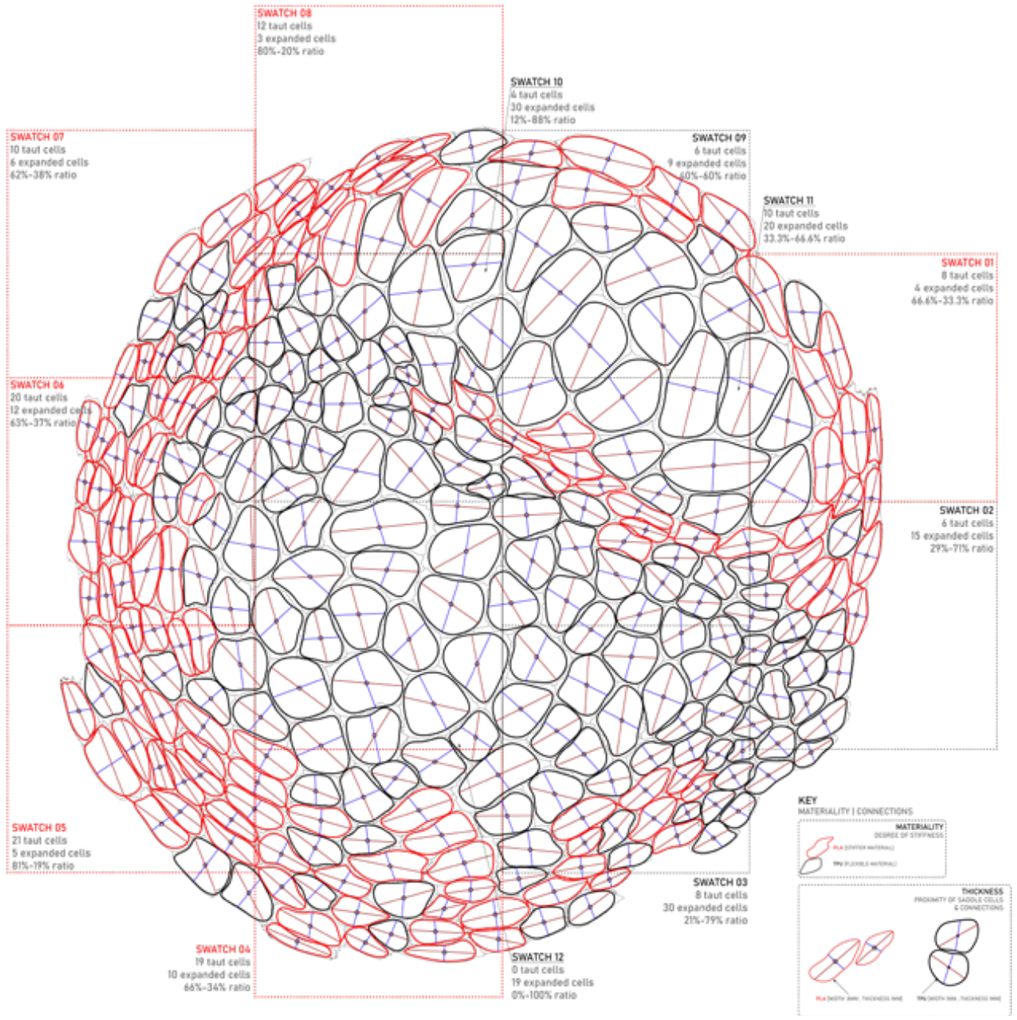


'expansive' units • primordial / meristem regions



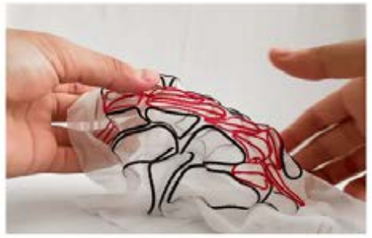
'taut' units • saddle cells

BEHAVIORS OBSERVED IN PLANT CELLS



TRANSLATION

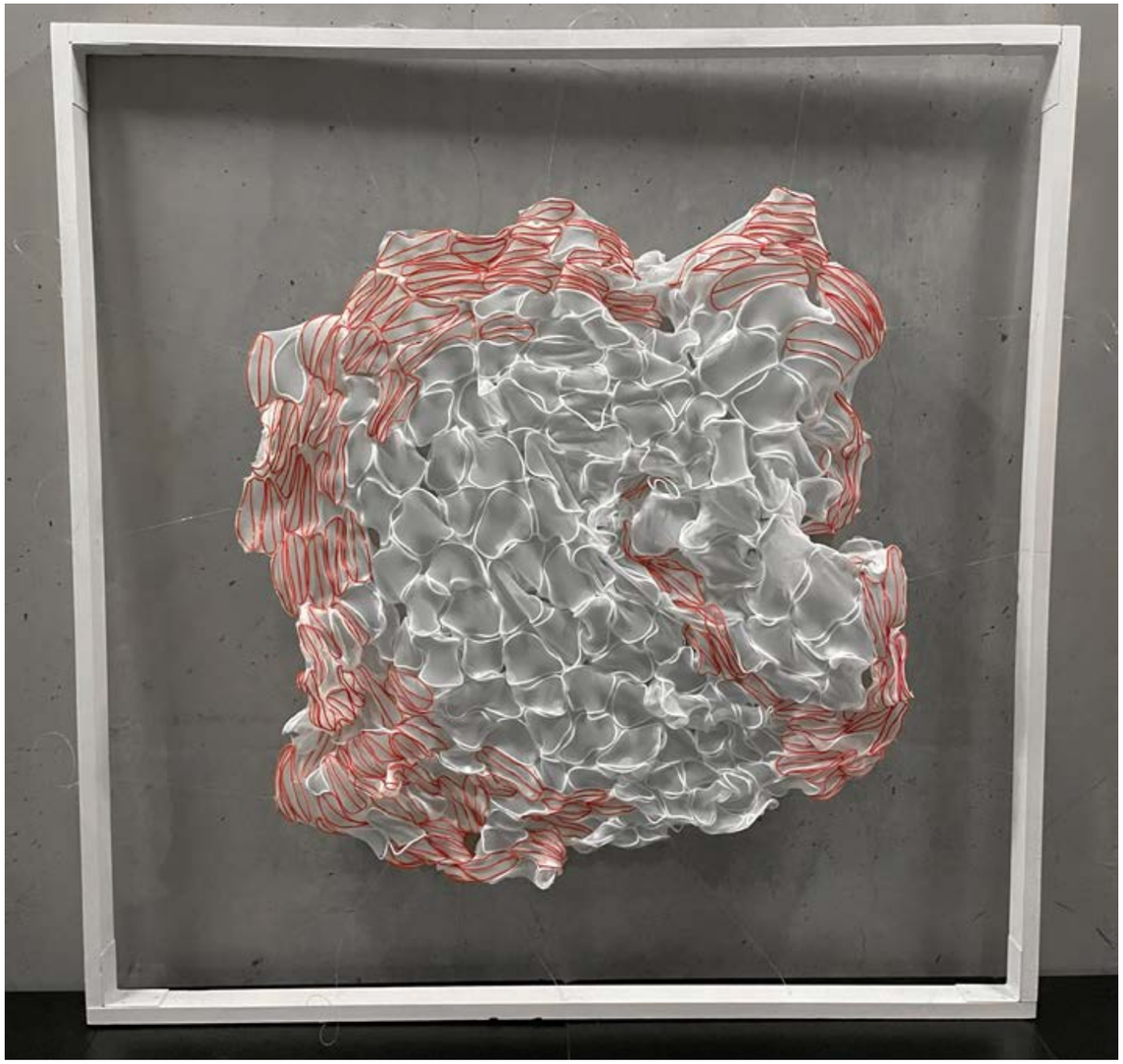
0% - *100% Ratio*
behavior : multi-directional stretch



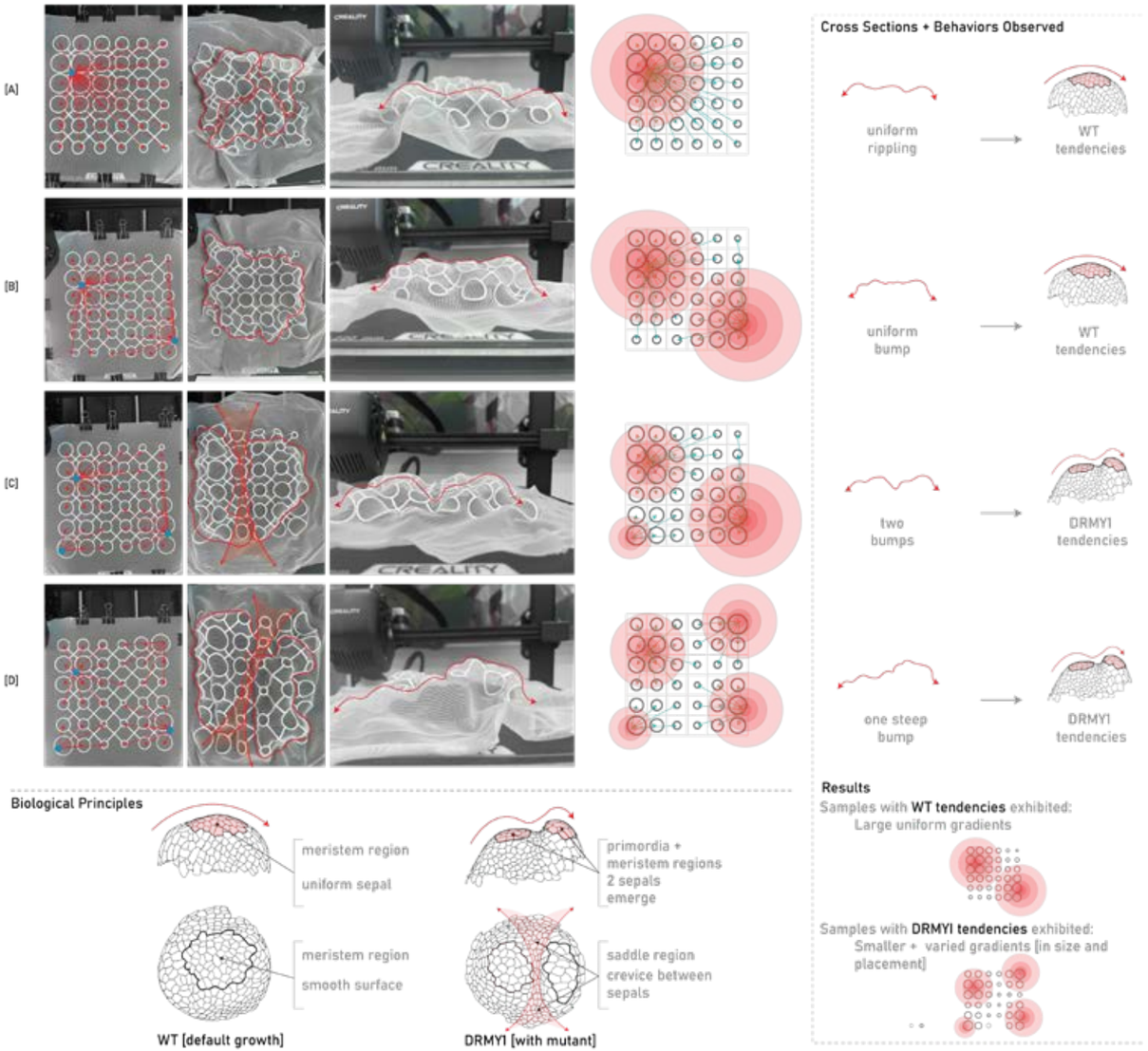
33.3% - *66.6% Ratio*
behavior : pop in/out

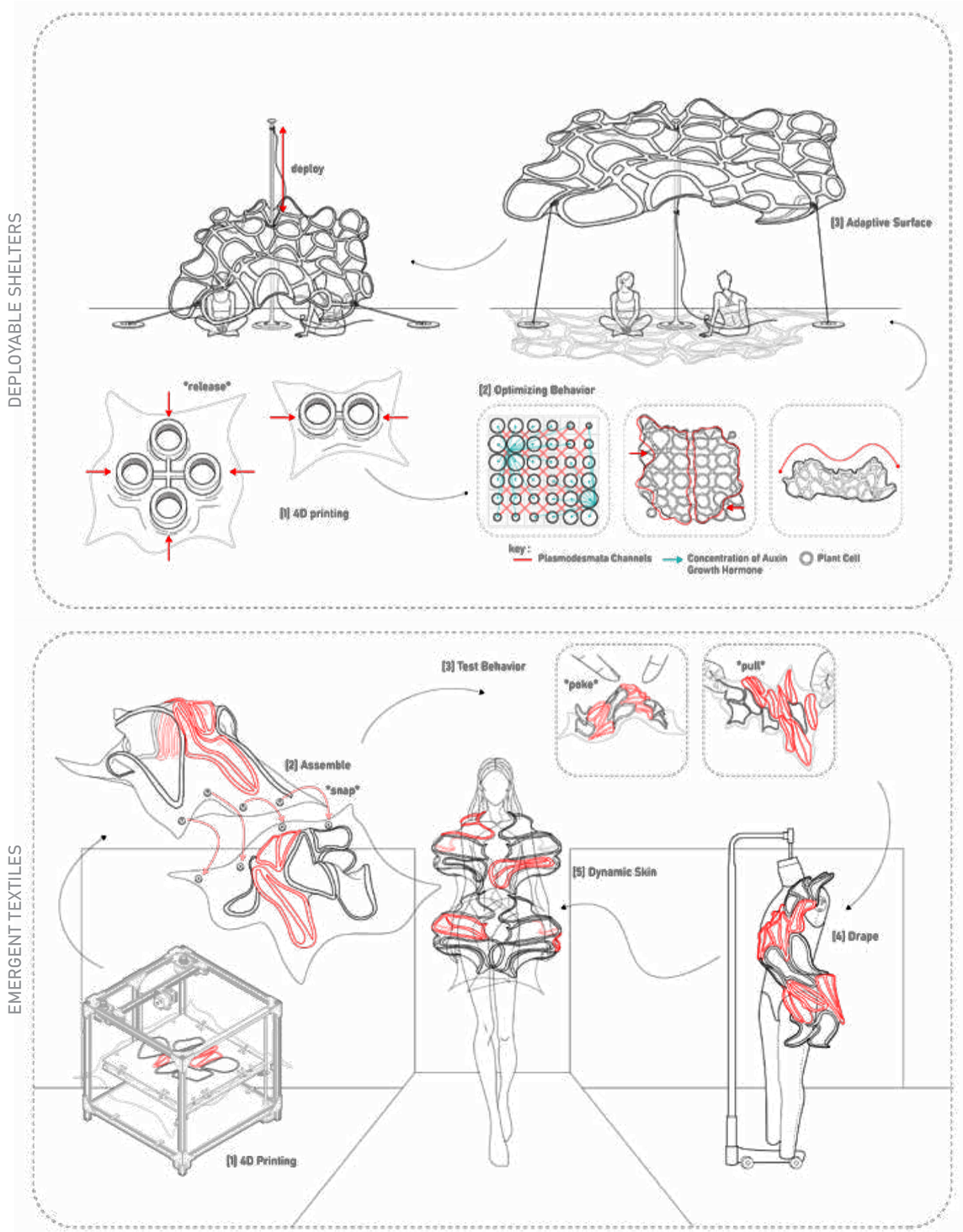
62% - *38% Ratio*
behavior : varying stiffness

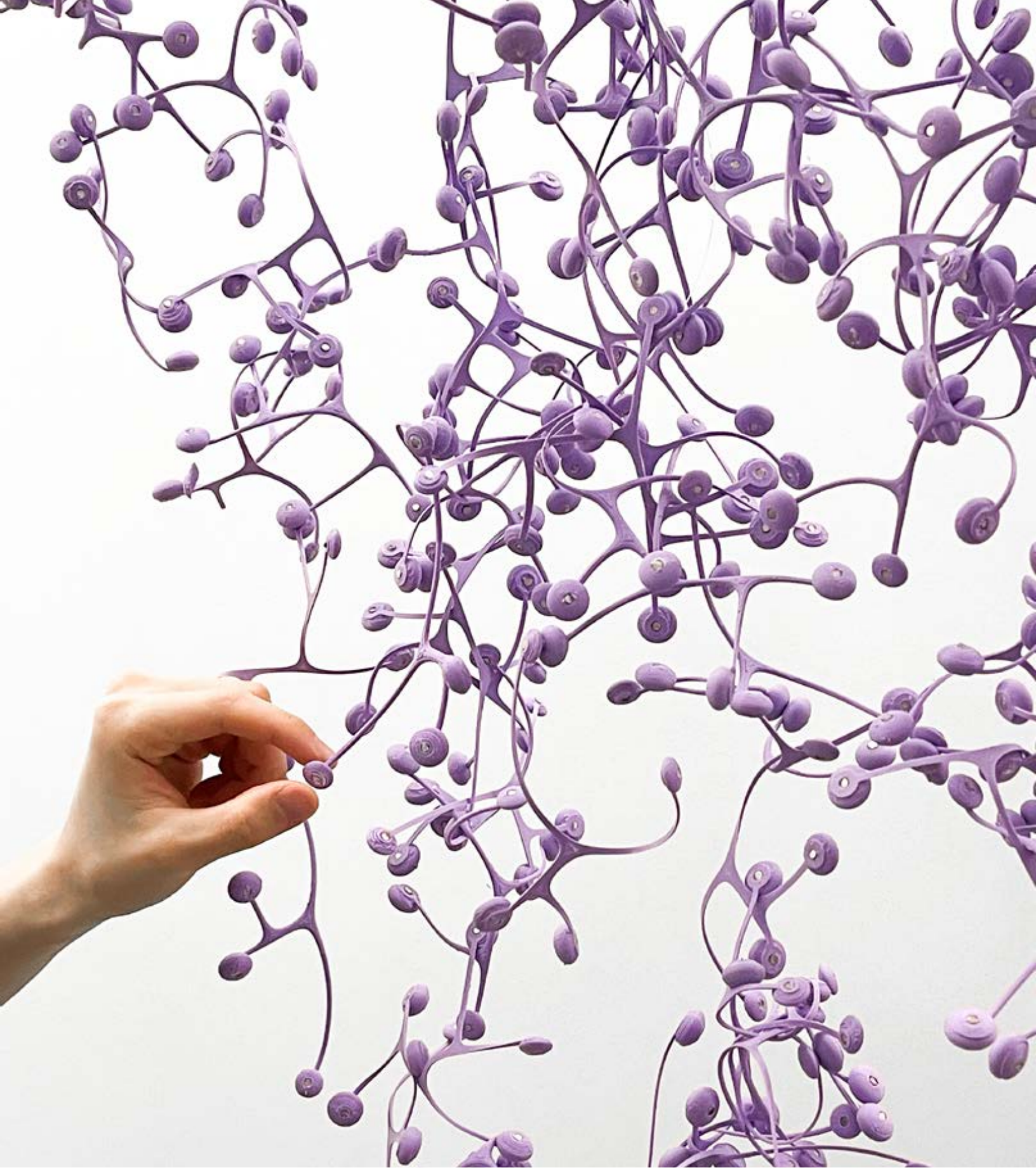
TESTING BEHAVIORS IN SWATCHES OF VARYING RATIOS



4D PRINTED OUTCOME OF SEPAL


[A]
[B]
[C]
[D]
CREALITY
Cross Sections + Behaviors Observed
uniform rippling
WT tendencies
uniform bump
WT tendencies
two bumps
DRMY1 tendencies
one steep bump
DRMY1 tendencies
Biological Principles
meristem region
uniform sepal
meristem region
smooth surface
WT [default growth]
primordia + meristem regions 2 sepals emerge
saddle region
crevice between sepals
DRMY1 [with mutant]
Results
Samples with WT tendencies exhibited:
Large uniform gradients
Samples with DRMY1 tendencies exhibited:
Smaller + varied gradients [in size and placement]


DEPLOYABLE SHELTERS
deploy
[3] Adaptive Surface
"release"
[1] 4D printing
[2] Optimizing Behavior
key:
Plasmodesmata Channels
Concentration of Auxin Growth Hormone
Plant Cell
EMERGENT TEXTILES
[3] Test Behavior
"poke"
"pull"
[2] Assemble
"snap"
[5] Dynamic Skin
[4] Drape
[1] 4D Printing



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[201]-658-6878
Thank you!