Portfolio

// Navigating Tectonic and Formal Pursuits of Architecture

Austin
Samson

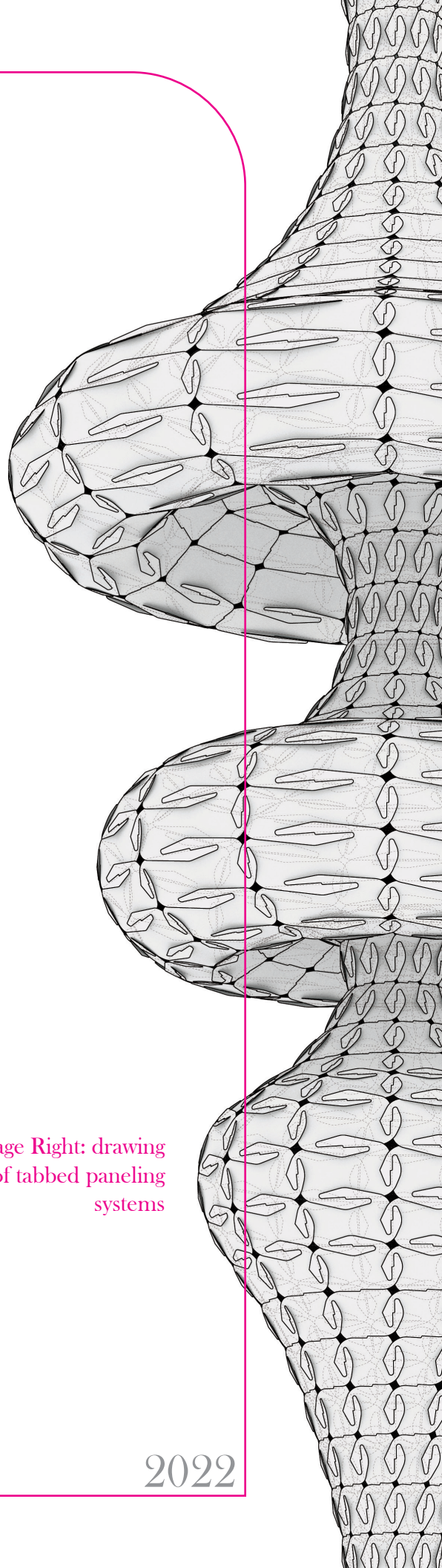


Image Right: drawing of tabbed paneling systems

2022

About

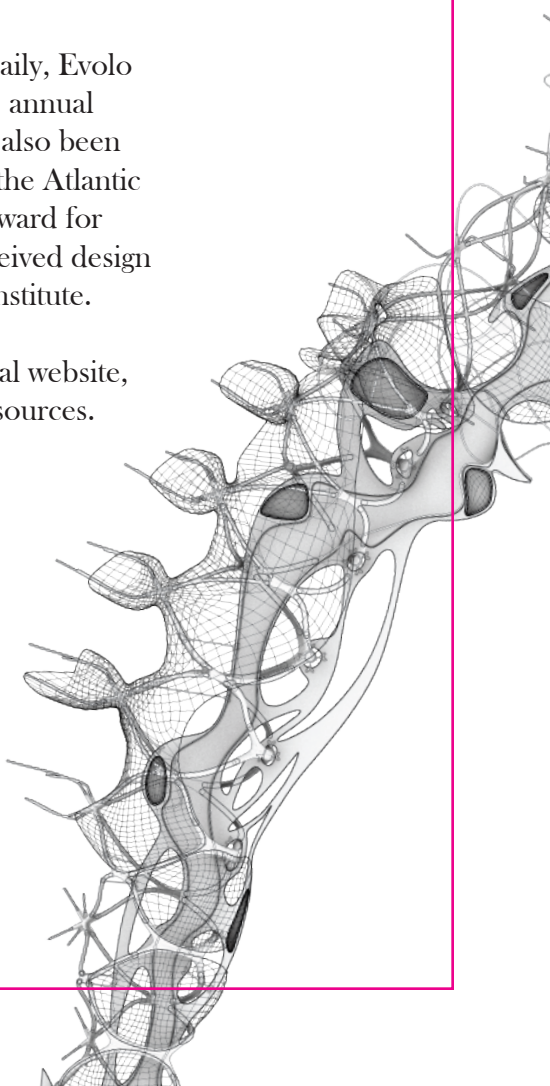
Austin is a licensed architect currently practicing and teaching in Boston, MA. He holds a Masters of Architecture degree from the Southern CA Institute of Architecture and a Bachelor of Science in Architecture from Wentworth Institute of Technology.

The goal of this portfolio is to convey relationships between formal and tectonic characteristics of design elements through a multitude of mediums. Austin has spent most of his academic and professional career exploring the potentials of digital design and fabrication through advanced computational modeling, digital fabrication techniques, and digital rendering and animation.

In addition to practicing as a full time architect, Austin teaches computational modeling and digital fabrication at Wentworth Institute with a strong focus on projects that explore new coherencies between material and architectural applications. He co-teaches a course focused on emerging technologies in the Fall and is currently teaching a course around free-from 3D printing with clay using a 6-axis robot arm.

Austin's work has been featured on Sucker-Punch Daily, Evolo Magazine, Art Africa Magazine, and Wentworth's annual architectural publication "W.A.R." His artwork has also been featured in a Boston gallery titled "...Fine" located at the Atlantic Wharf Gallery. He received the Sci-Arc Service Award for contributions made to the Sci-Arc community and received design excellence awards for work done at Wentworth Institute.

Please scan the QR code below for links to a personal website, Instagram, academic blog and various teaching resources.



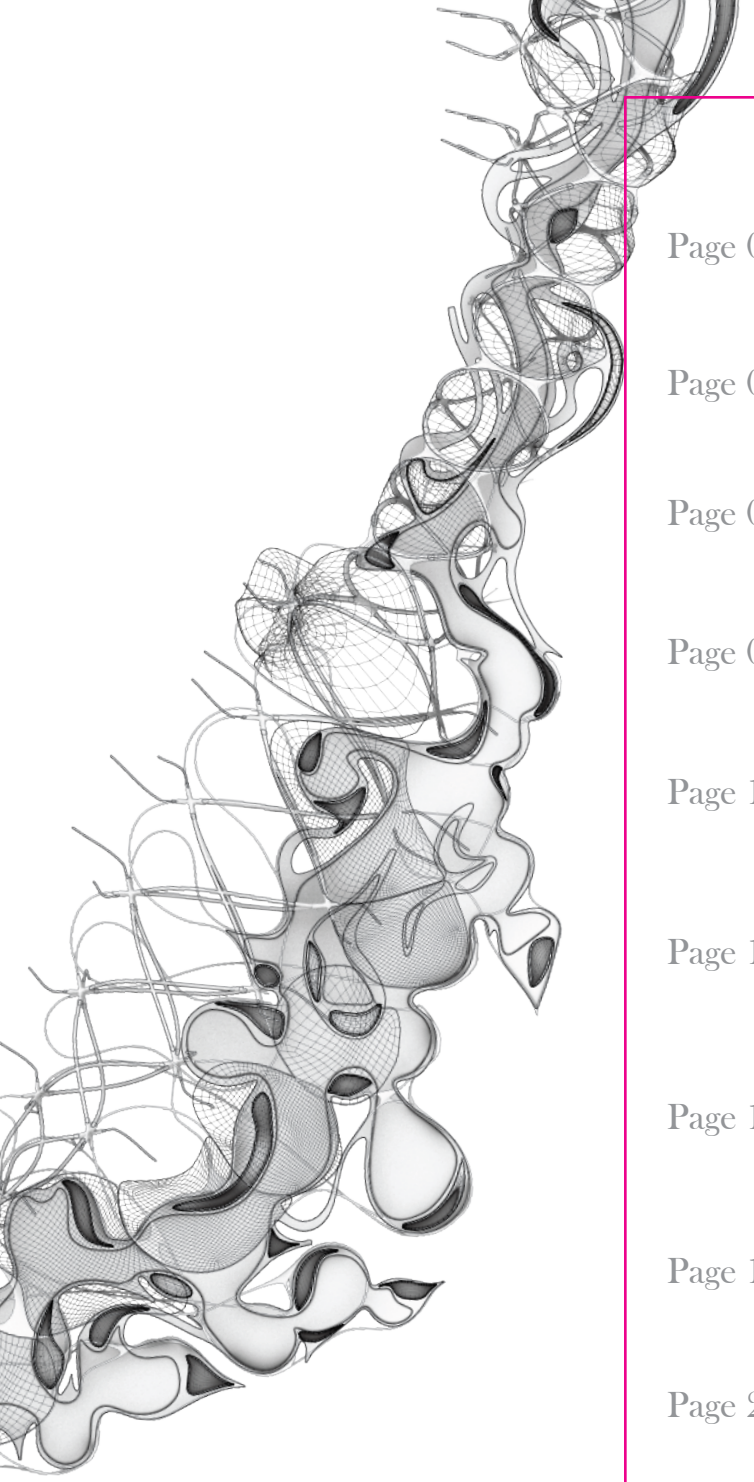


Image Center: drawing of the Barcelona Footbridge

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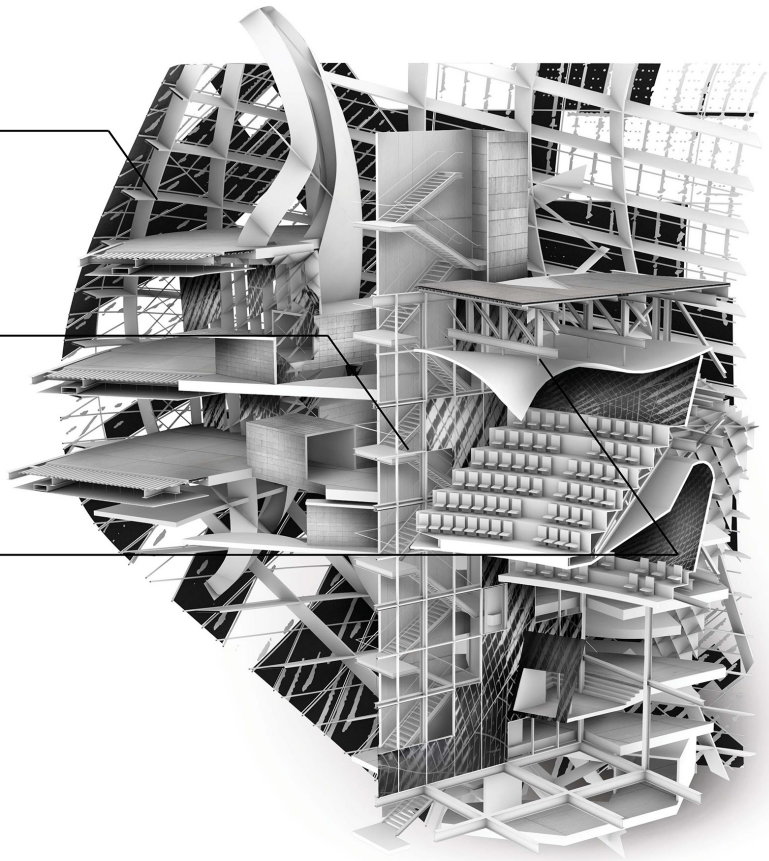
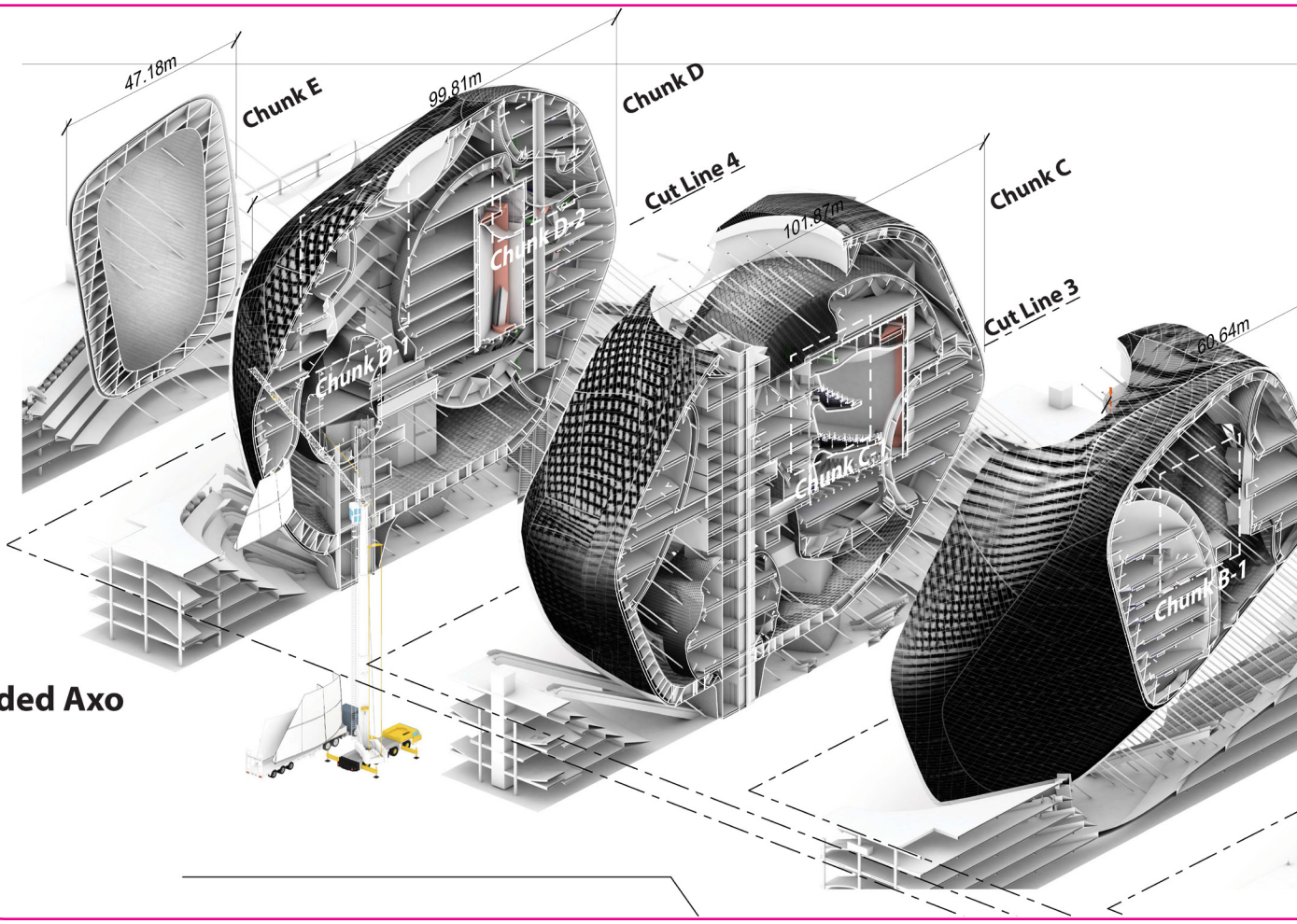
Chunk C-1

Egg Crate Structure
(see structure Axo)
d=90cm~240cm
t=30~45mm
ASTM A992

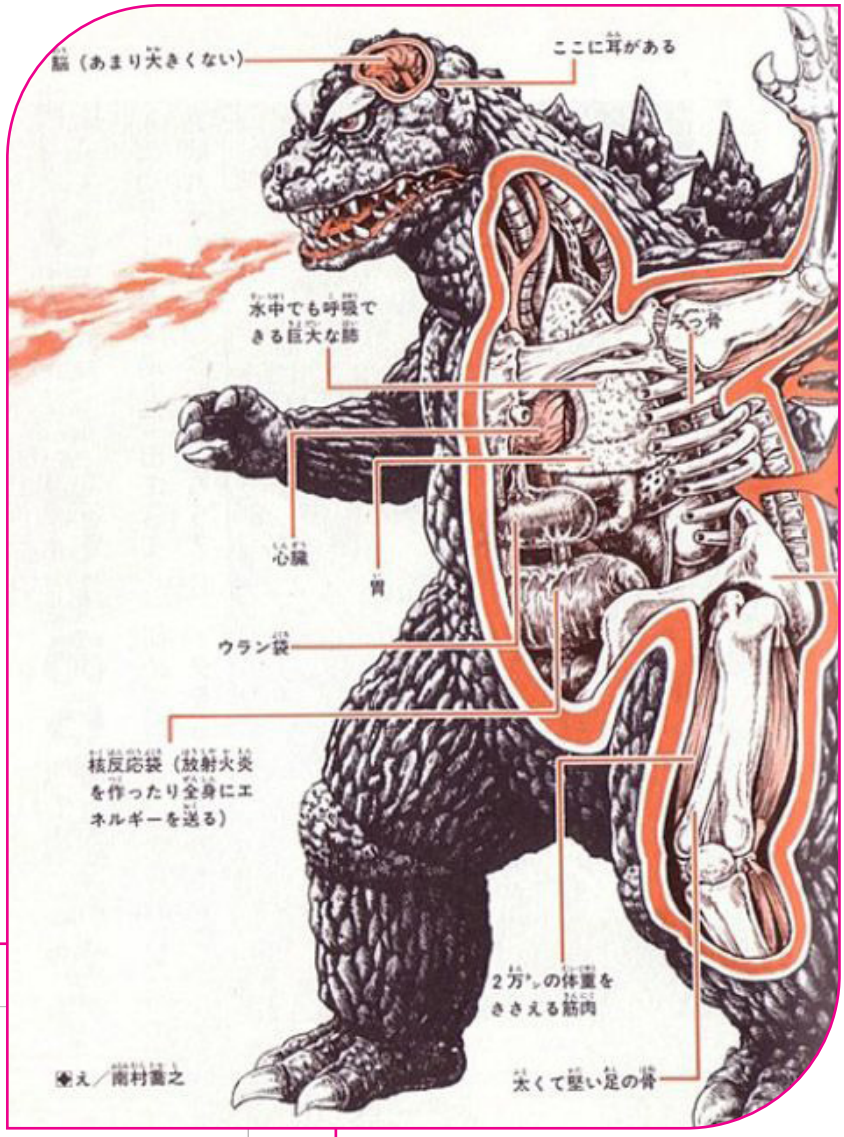
Concert Hall
Wall Frame
Box-300x300x10(mm)
H-300x300x10x15(mm)
H-200x200x8x12(mm)

Concert Hall
Roof Truss
H-300x300x10x15(mm)
H-200x200x8x12(mm)

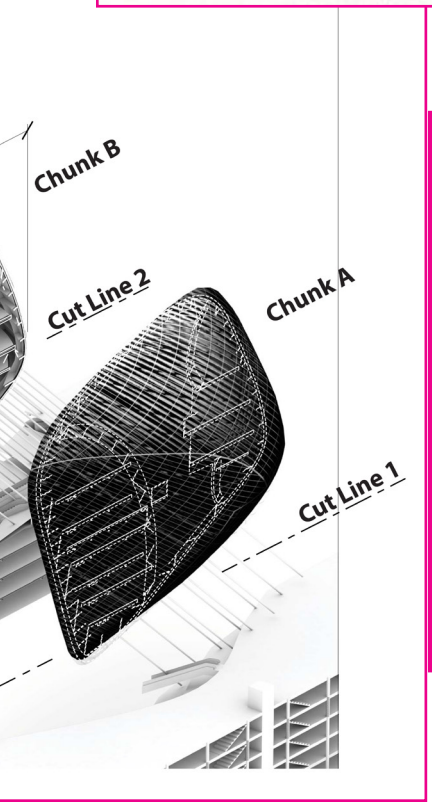




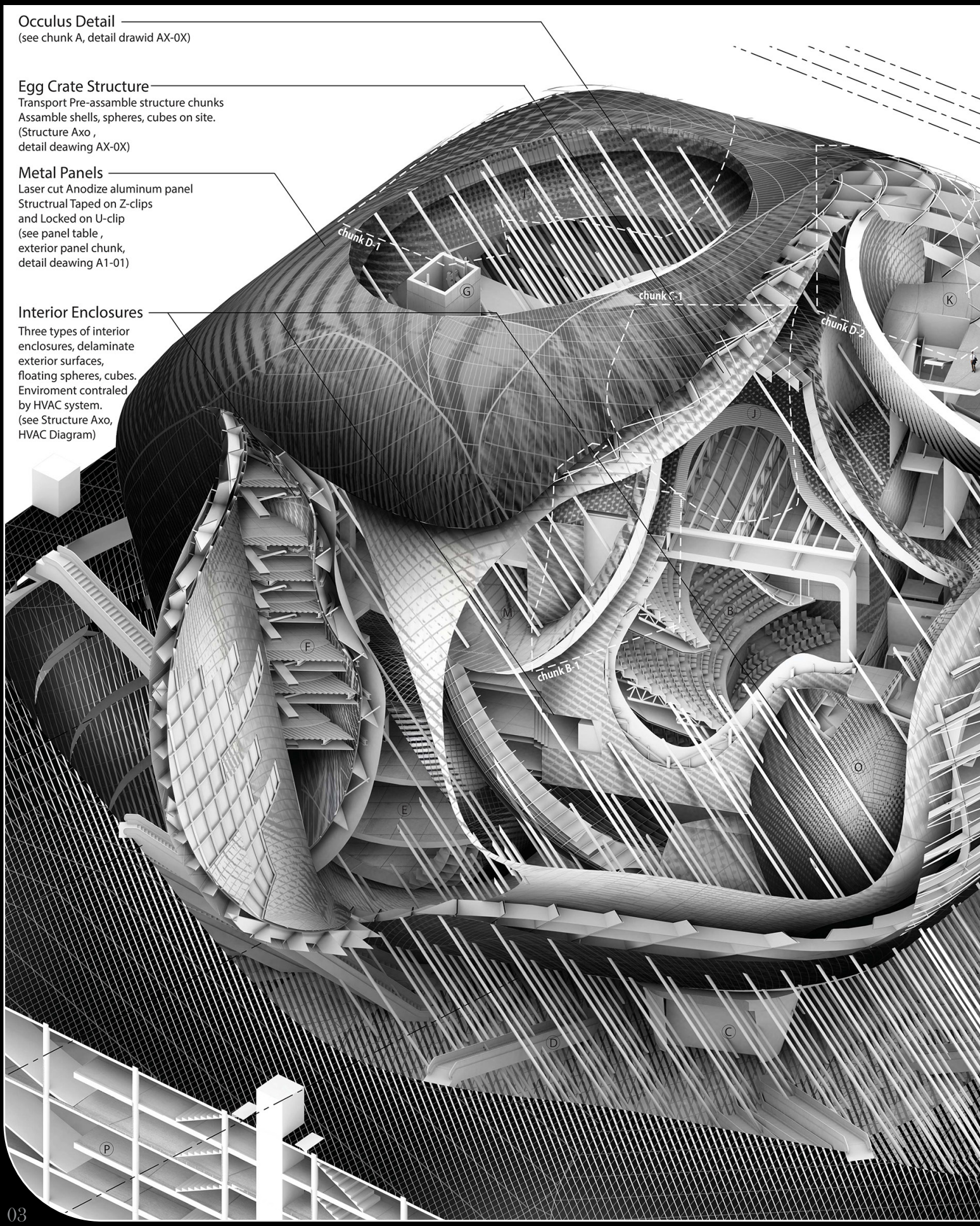
Exploded Axo



Mega Drawings is a look into rethinking traditional design documentation methods through modeling and rendering. The term “scale” is replaced with “zoom” as 3D models are typically 1:1 and can contain all of the detail in one setting. So zooming closer and further out of an image will reveal more and less detail. Axon is preferred over 2 dimensional drawing in order to depict more complex scenarios. Image replaces drawing in order to composite multiple sets of information (material, annotation, line-work) is all composited into a final still. Non-orthographic cutting and slicing is used to show relationships between skin, structure, program, and circulation. The anatomical image of Godzilla (left) is used as inspiration for these types of drawings.



Mega Drawings


Occulus Detail
(see chunk A, detail drawid AX-0X)
Egg Crate Structure
Transport Pre-assamble structure chunks
Assamble shells, spheres, cubes on site.
(Structure Axo ,
detail deawing AX-0X)
Metal Panels
Laser cut Anodize aluminum panel
Structrual Taped on Z-clips
and Locked on U-clip
(see panel table ,
exterior panel chunk,
detail deawing A1-01)
Interior Enclosures
Three types of interior
enclosures, delaminate
exterior surfaces,
floating spheres, cubes.
Enviroment contraled
by HVAC system.
(see Structure Axo,
HVAC Diagram)
chunk D-1
chunk C-1
chunk D-2
chunk B-1
A
B
C
D
E
F
G
J
K
M
O
P



Chunk D-2

Panel structure

Pipe D=100mm t=3mm
(see A1-01)

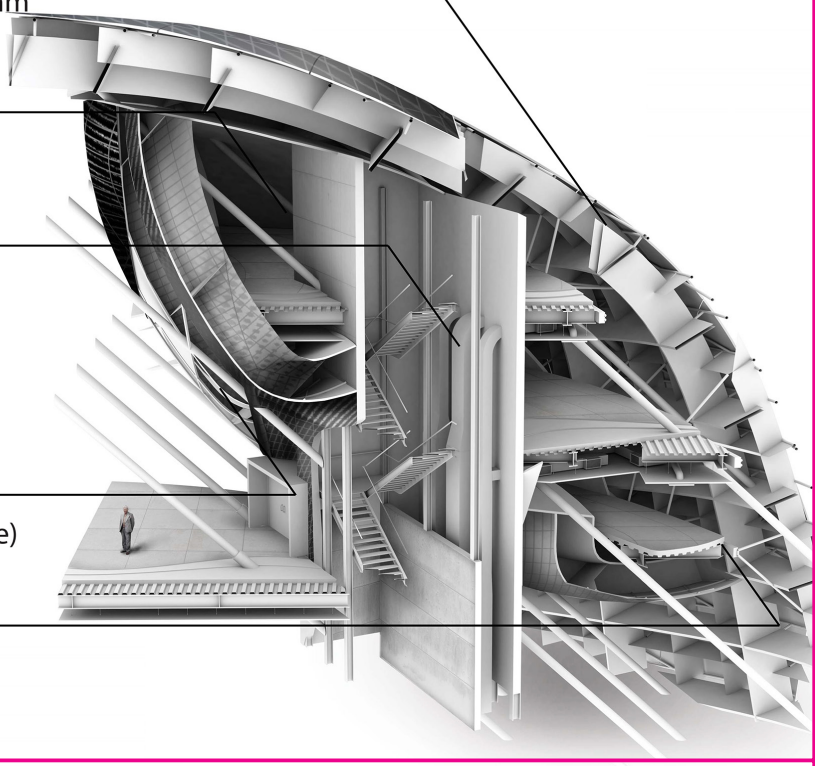
2 layer 1/2" GWB
4" Steel stud

Vertical Shaft

7.5m x 1.5m
(include air supply,
return ducts,
plumbing pipes,
see HVAC diagram)

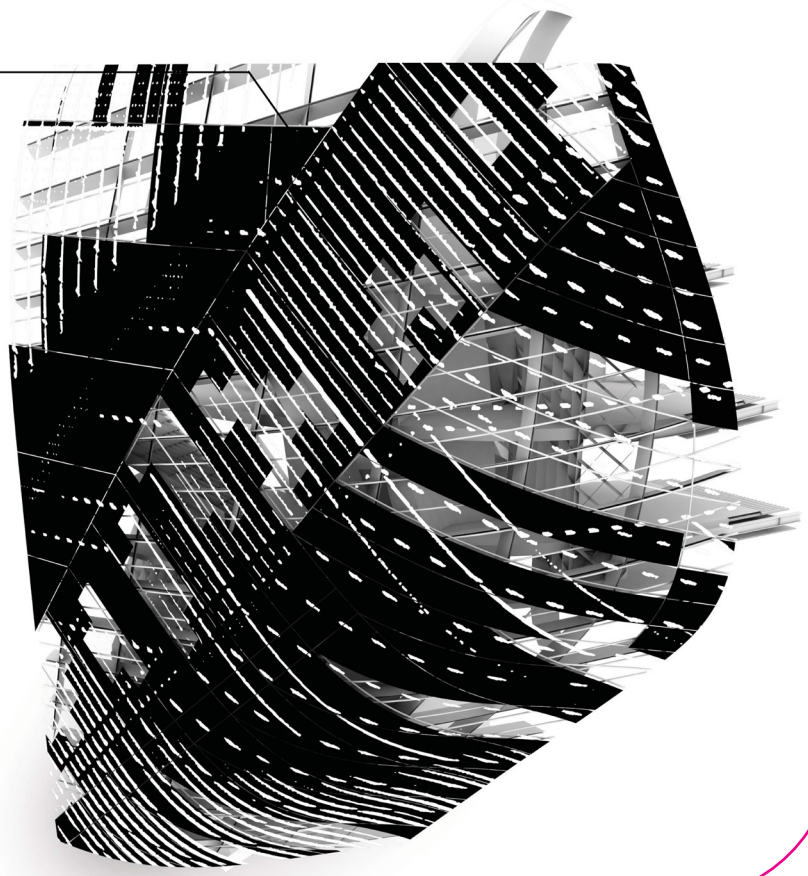
Metal Panels
(see interior panel table)

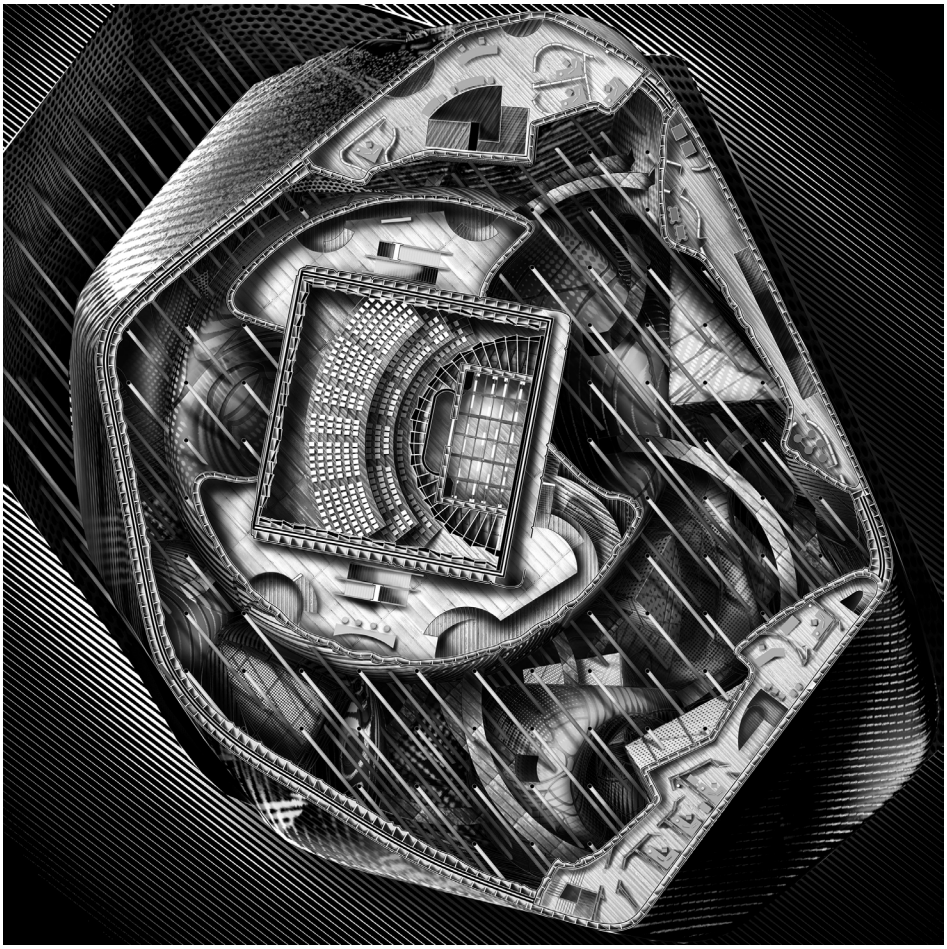
Floor and Outer
Envelop Detail
(see A2-01)



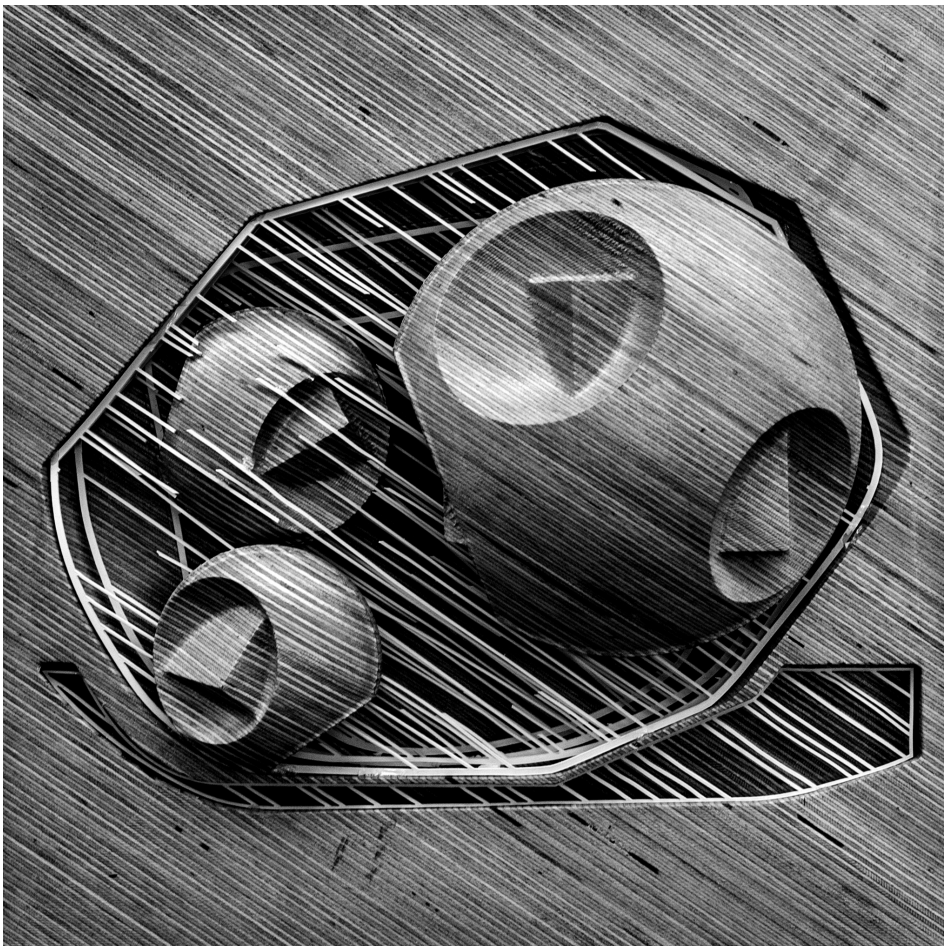
Skin Chunk

Metal Panels
Laser cut Anodize
aluminum panel
Structrual Taped on
Z-clips
and Locked on U-clip
(see panel table ,
exterior panel chunk,
detail deawing A1-01)





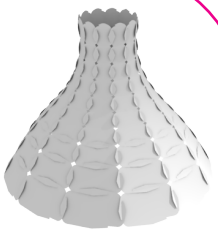


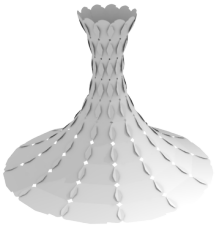


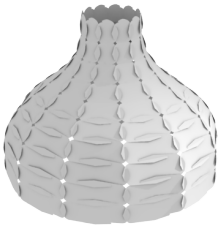


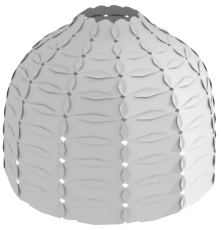
A New Painterly

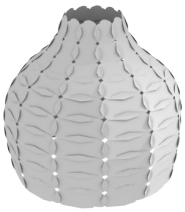
This project uses chiaroscuro effects to re-imagine ways of using traditional drawing techniques. Density of hatch pattern and over use of contrast provide ambiguous levels of depth within drawings and models - scan the QR code for animations of the project.

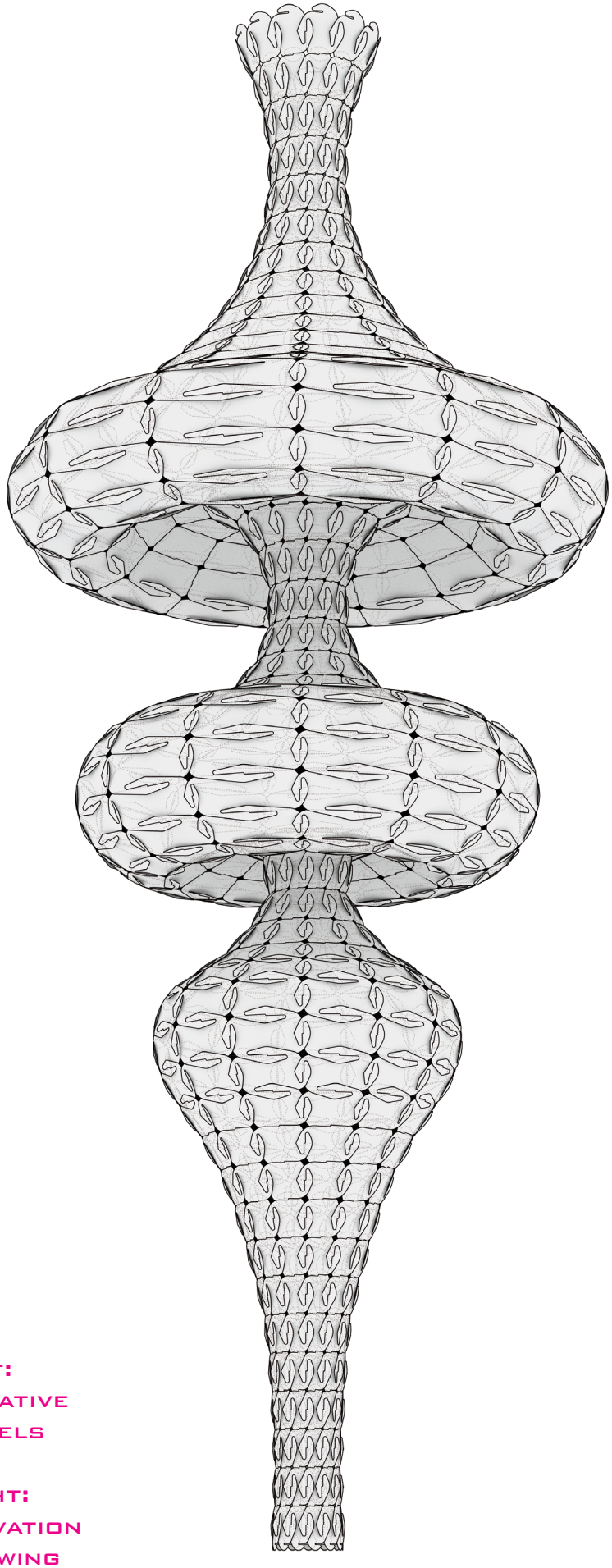










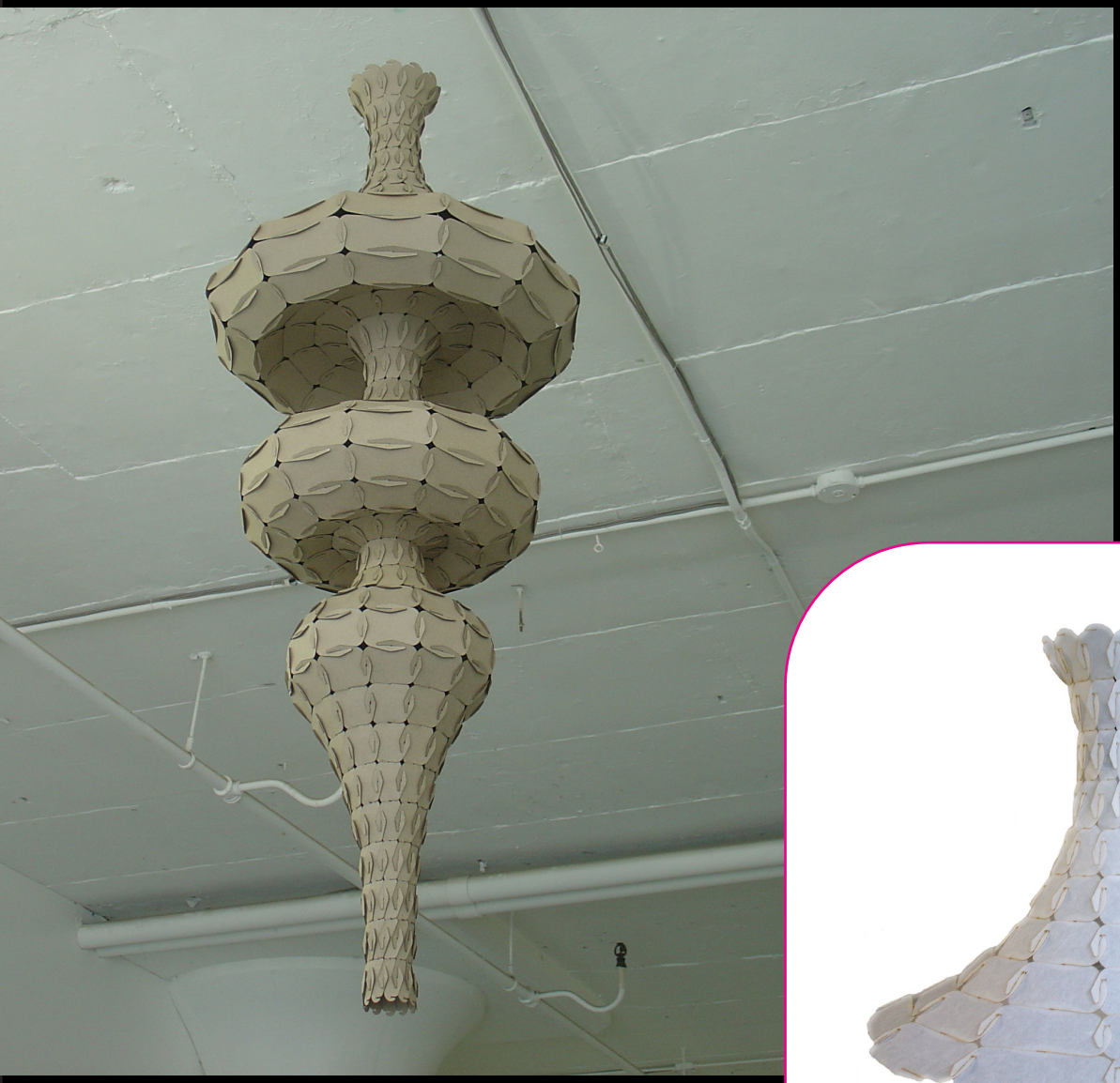






Left:
Iterative models

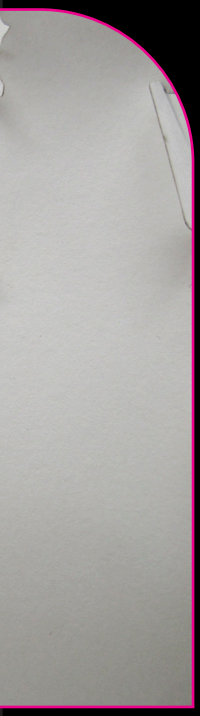
Right:
Elevation Drawing



Left: Physical Model of laser-cut chipboard

Below: Physical Model of laser-cut heat resistant material

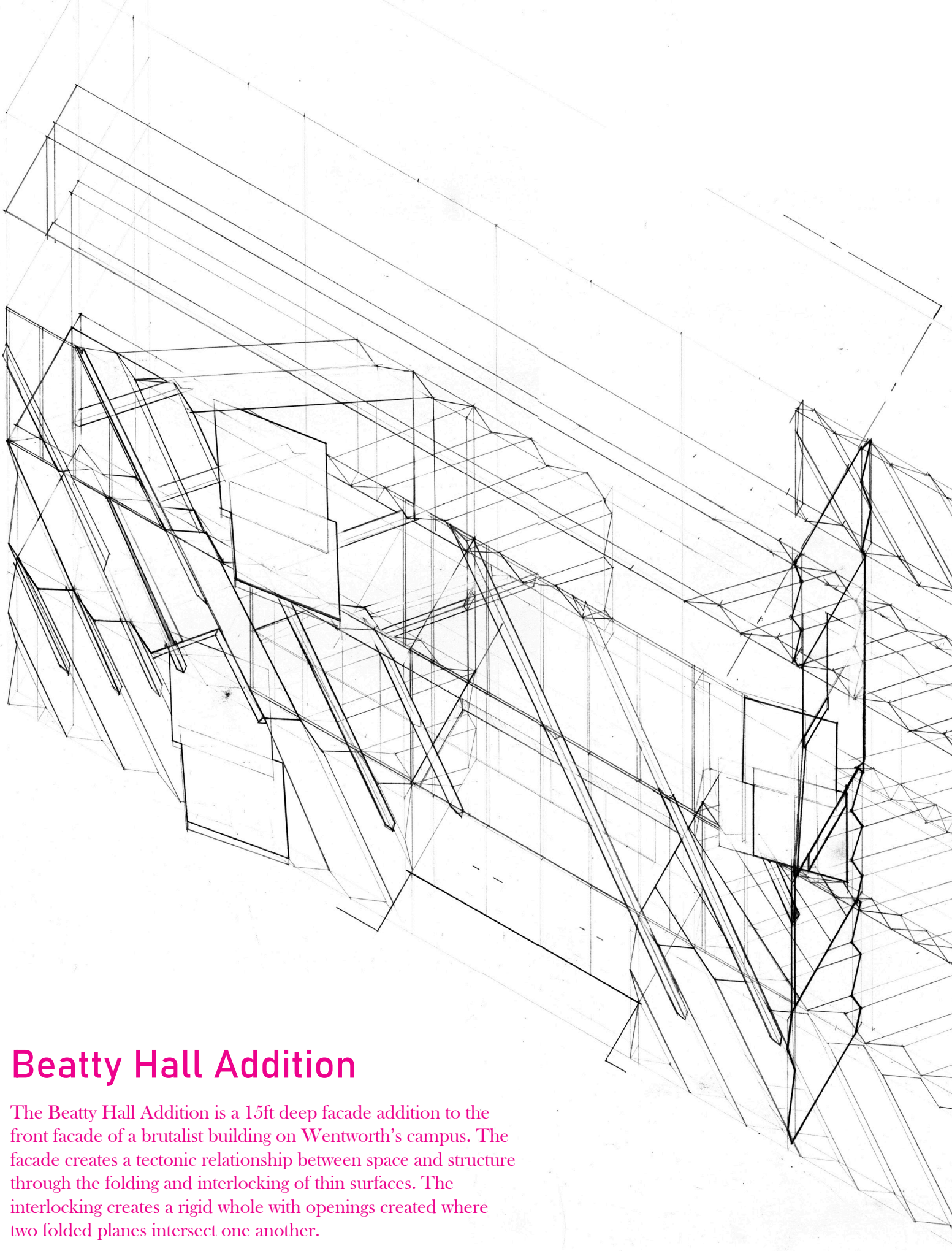






Tabbed Paneling Systems

Designed during an internship with RadLAB Inc, this project is researching different types of interlocking paneling systems and how they can be mapped to different types of surfaces.

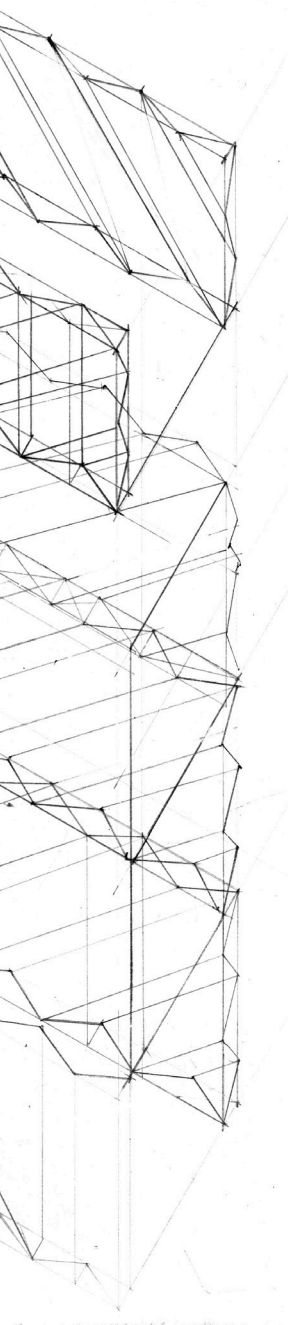


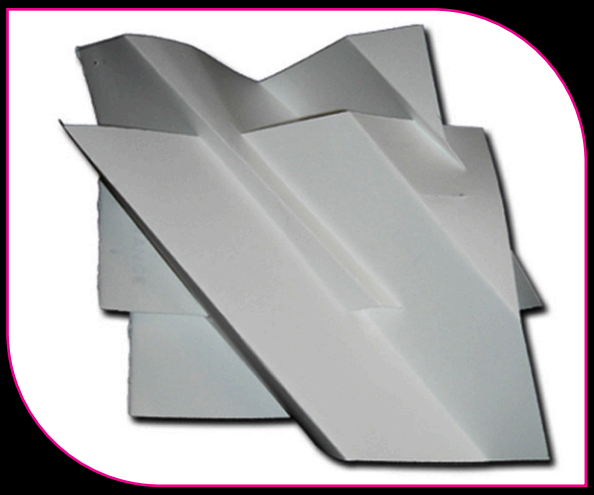
Beatty Hall Addition

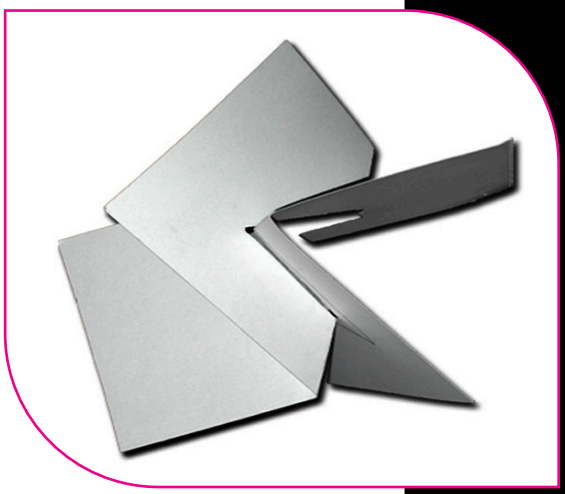
The Beatty Hall Addition is a 15ft deep facade addition to the front facade of a brutalist building on Wentworth's campus. The facade creates a tectonic relationship between space and structure through the folding and interlocking of thin surfaces. The interlocking creates a rigid whole with openings created where two folded planes intersect one another.

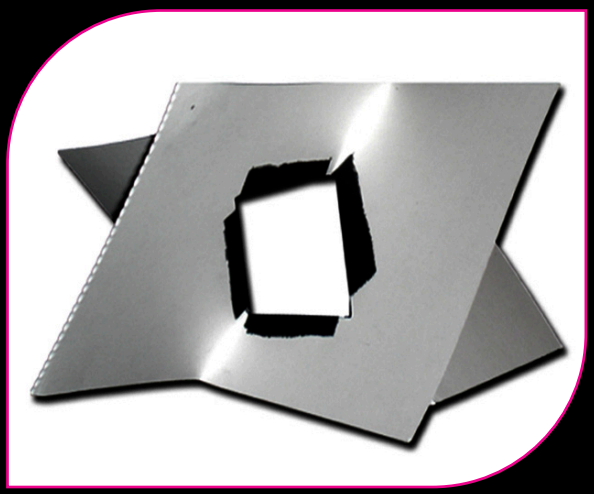
Right + Below: study models of interlocking folded planes.

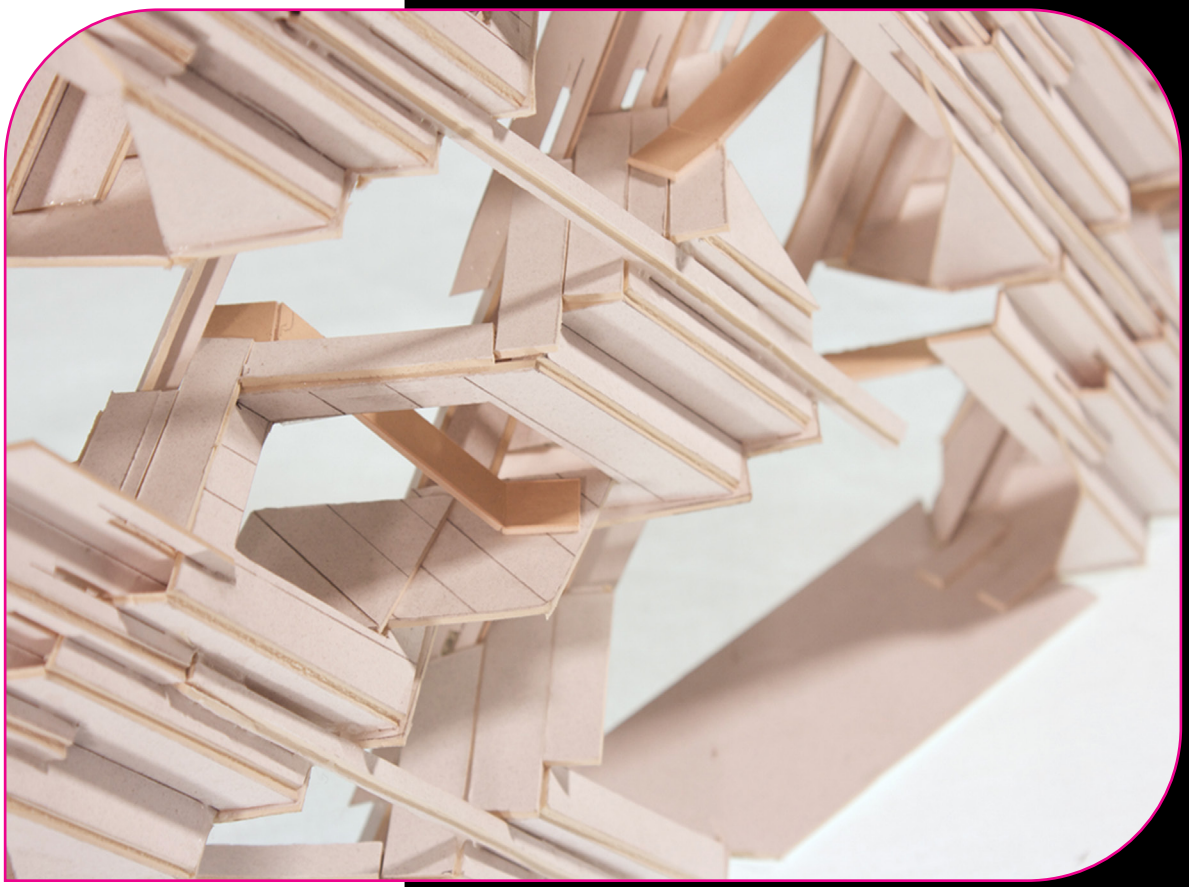
Left: hand drawn axon of the facade.









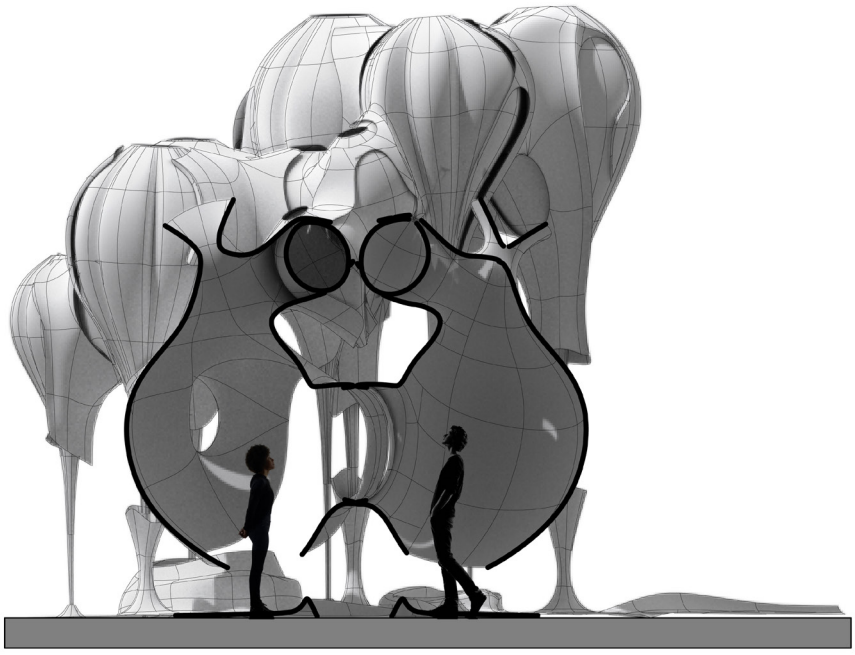


Top View

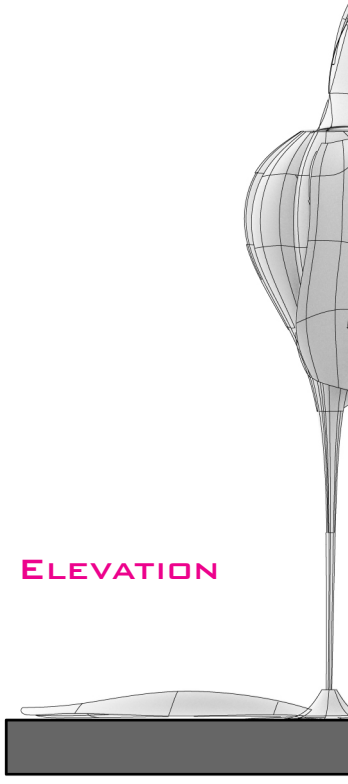
VR Pavilion

A pavilion designed and modeled in virtual reality using Gravity Sketch. The tool allows the designer to model at a 1:1 scale while simultaneously zooming in and out. The formal values of the project result from the software's ability to sculpt geometry through free-form modeling methods. Scan the QR code to experience the pavilion in augmented reality.

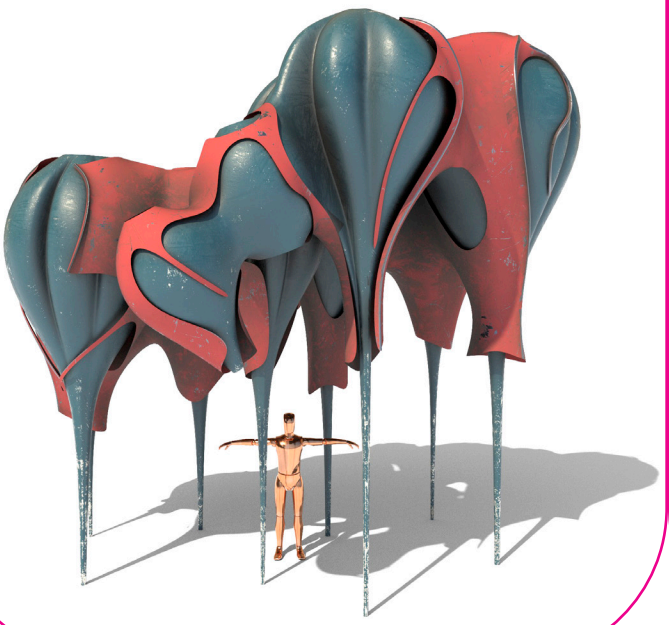
Section Sketch



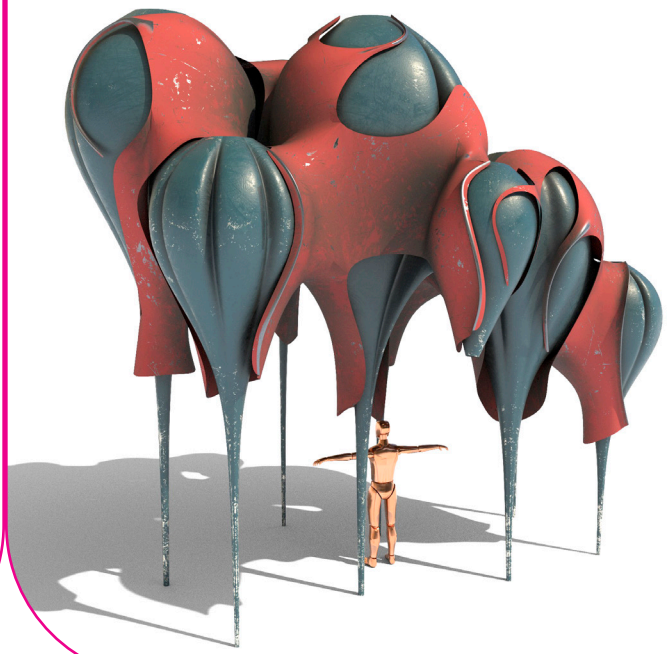
Elevation

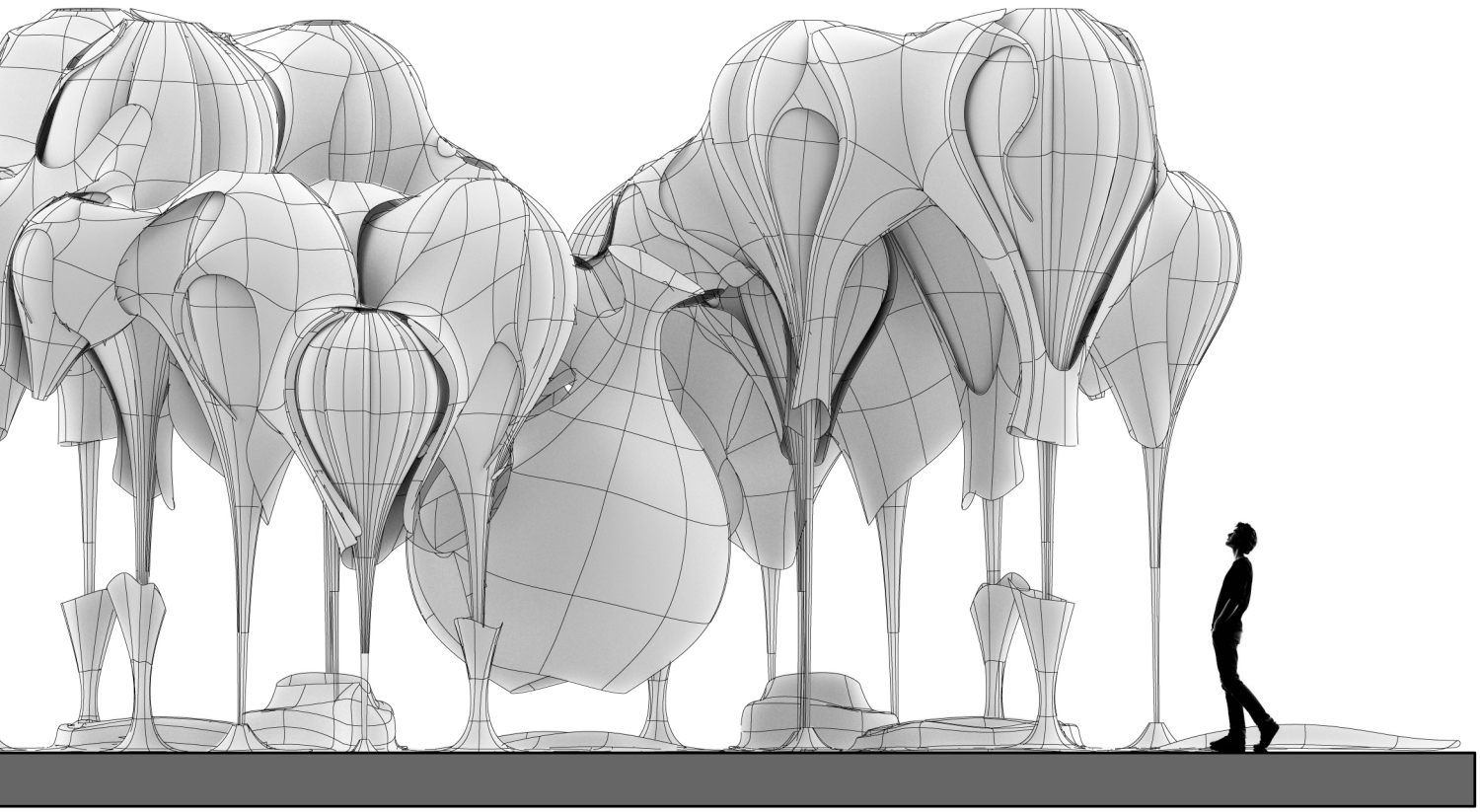


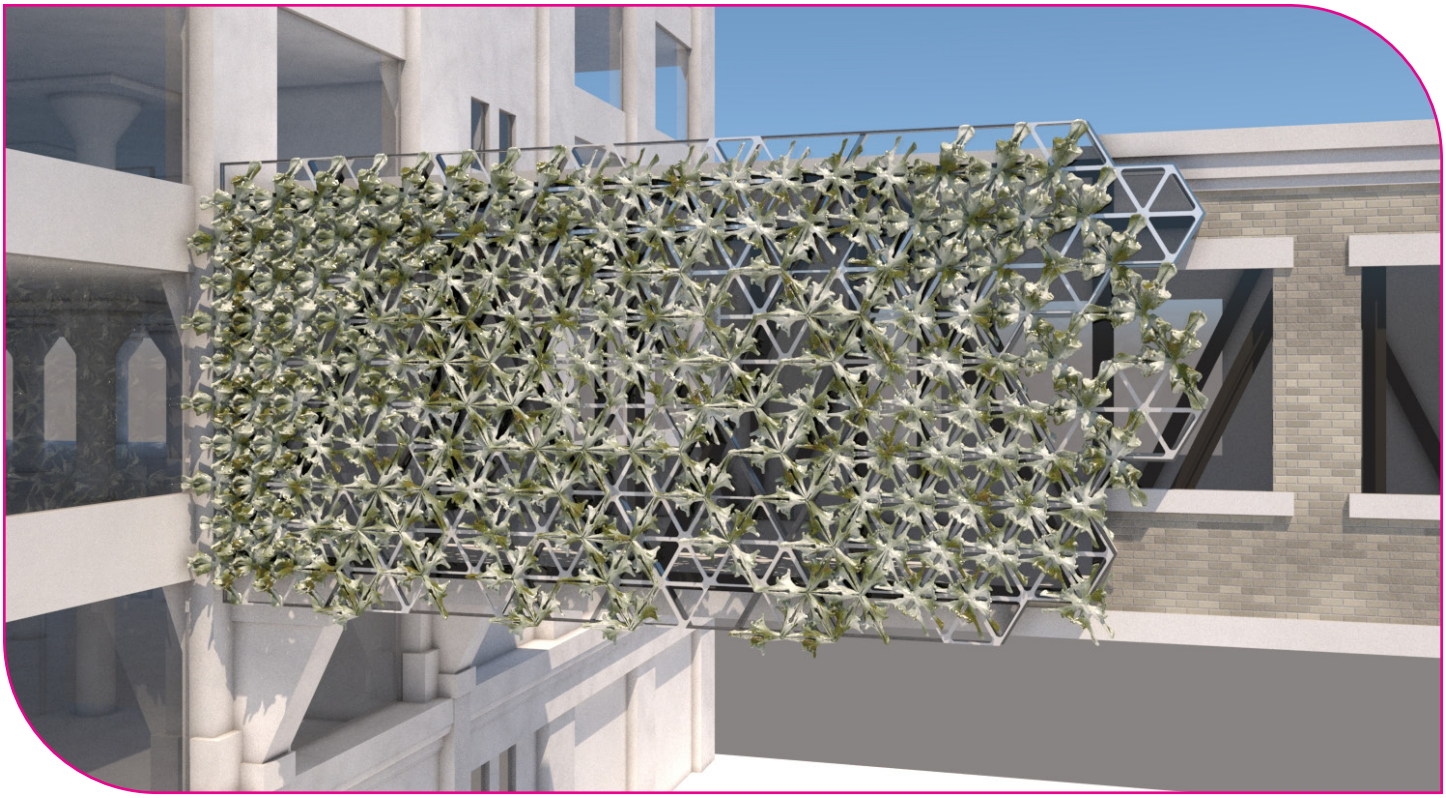
Render 01

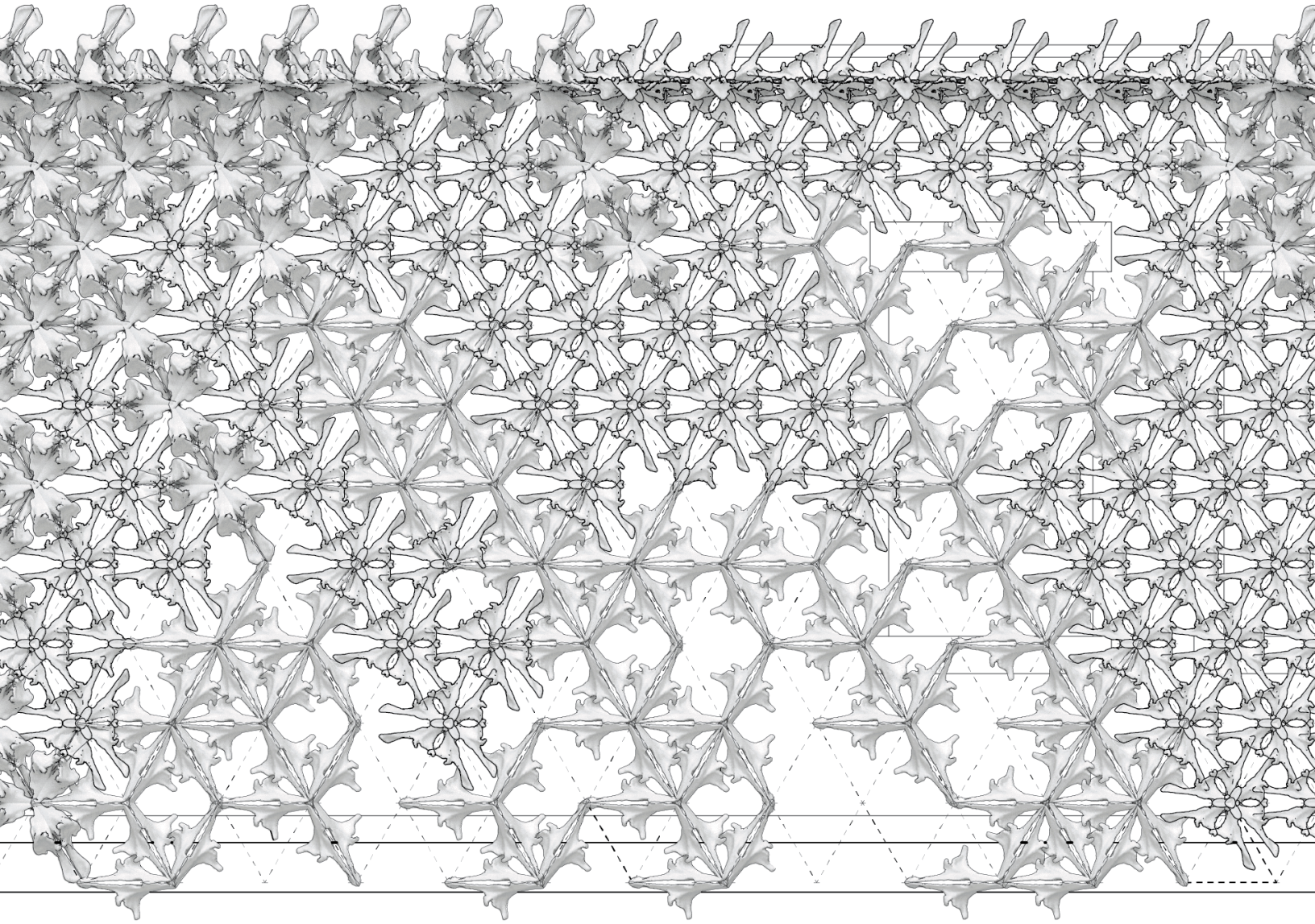


Render 02











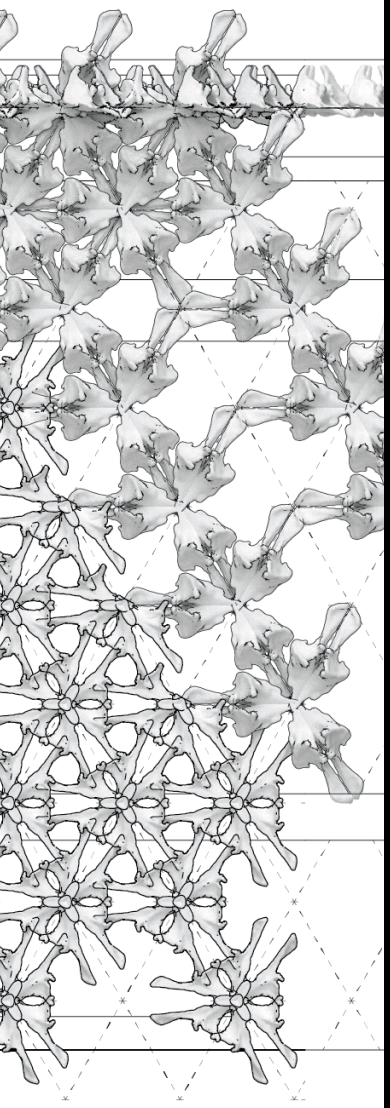
Ceramic
Growth Test



Ceramic
Growth Test



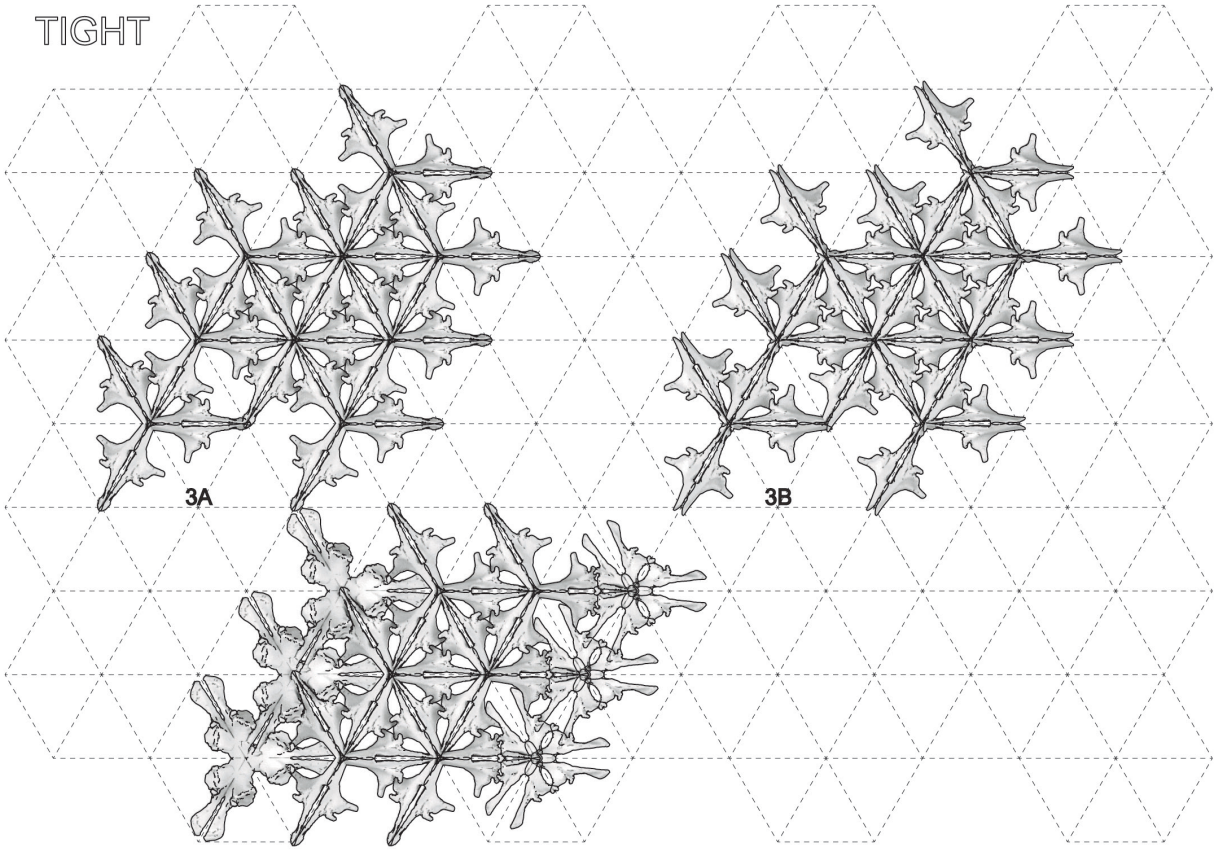
Basal Frond
Plant



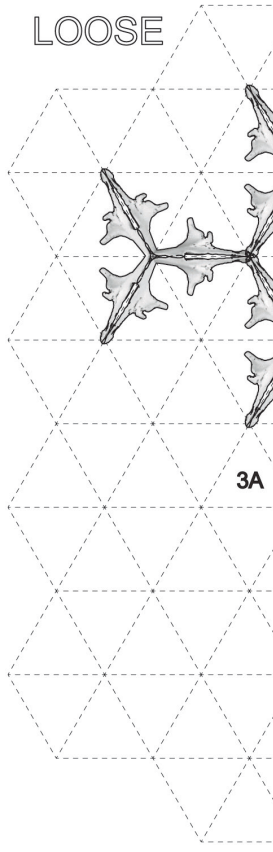
Ceramic facade (wip)

This facade project speculates on the ability for ceramic castings to provide a support system for different types of plant growth, resulting in a true living facade. The facade is comprised of a standardized set of casted ceramic panels whose aesthetic is reflected by the Basal Frond plant typology (upper left). The panels are arranged based on adjacency relationships and how much light is desired at any one moment. The project aims to provide a new take on green facade systems with a focus on common climate goals like solar gain, indirect sunlight, and clean air quality.

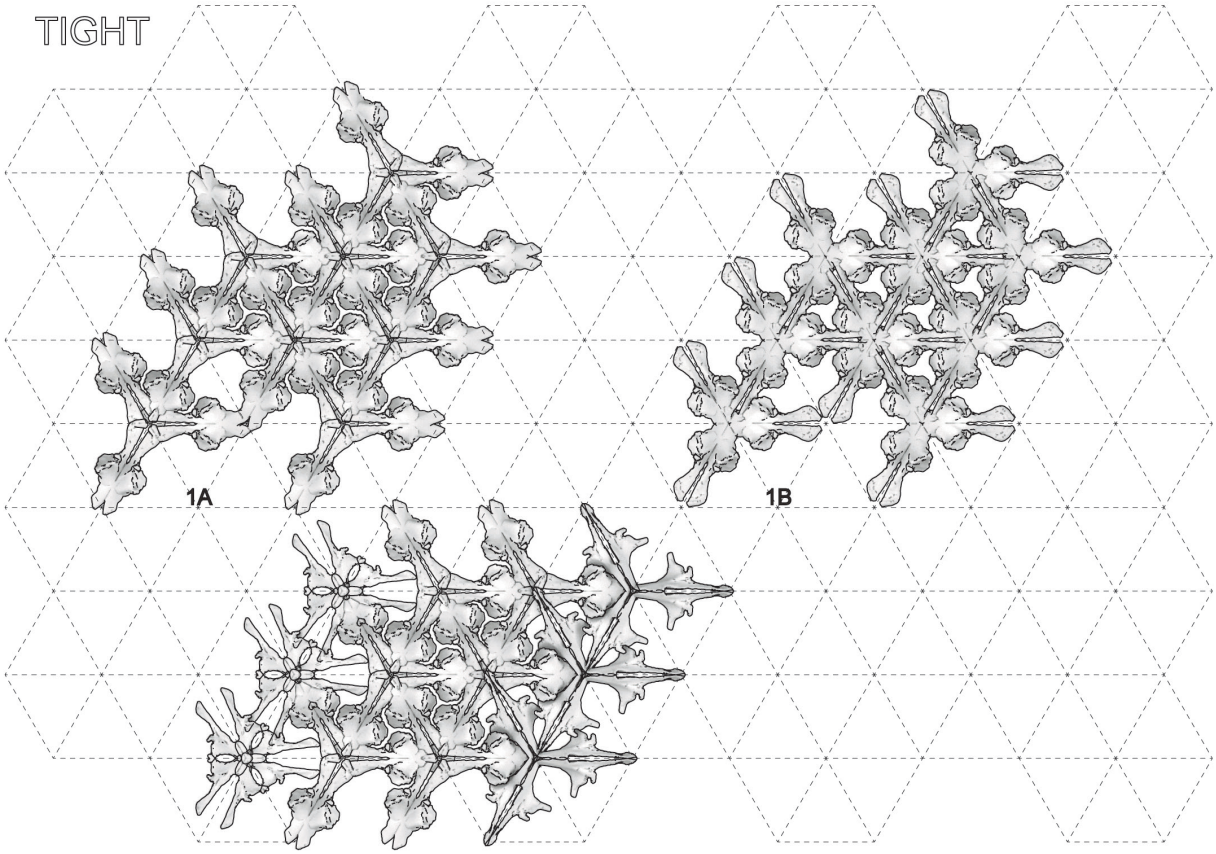
TIGHT



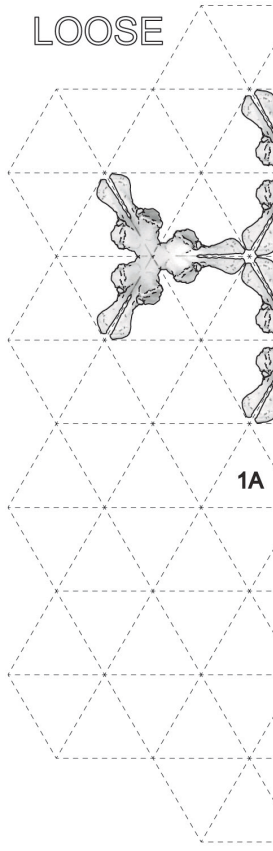
LOOSE

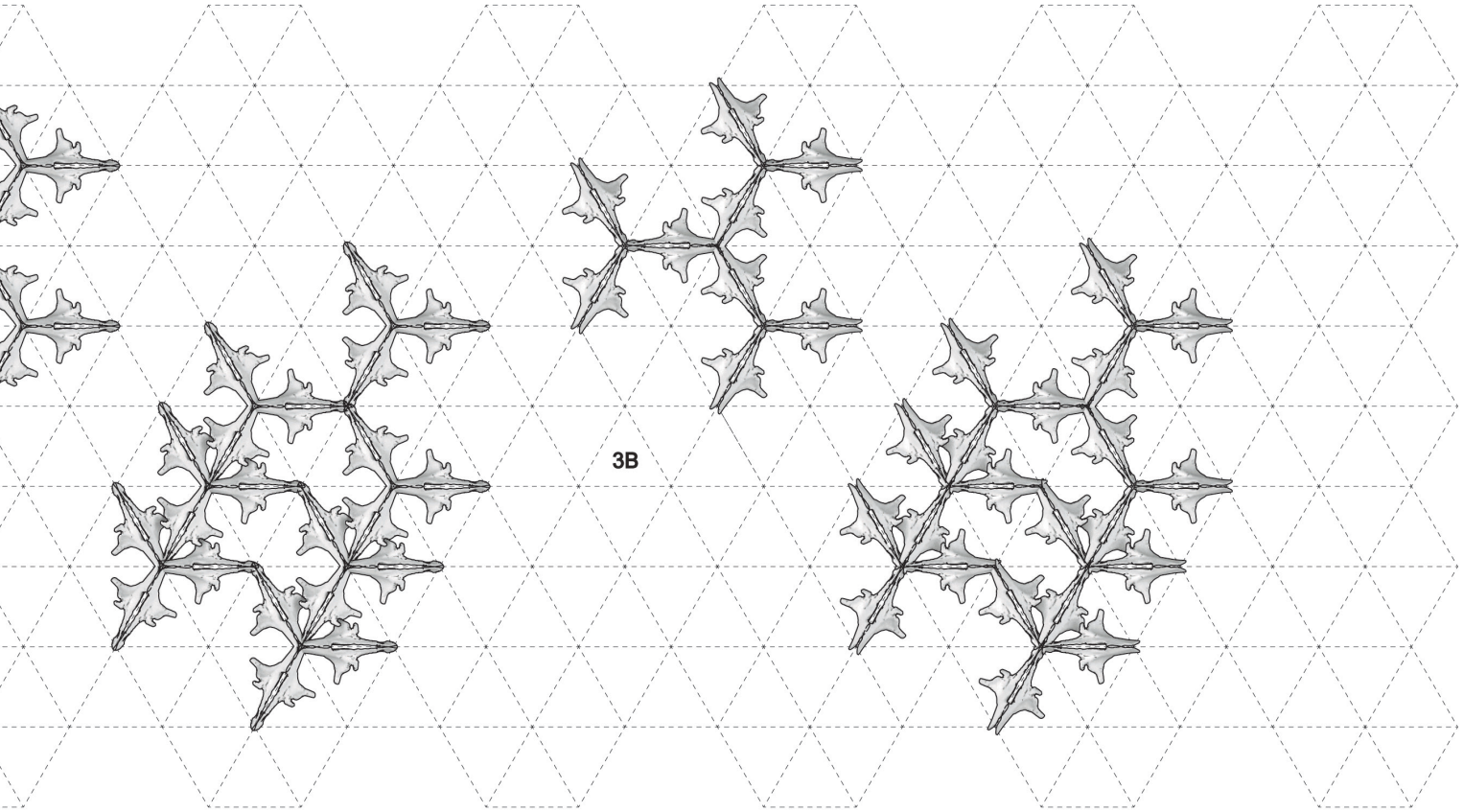


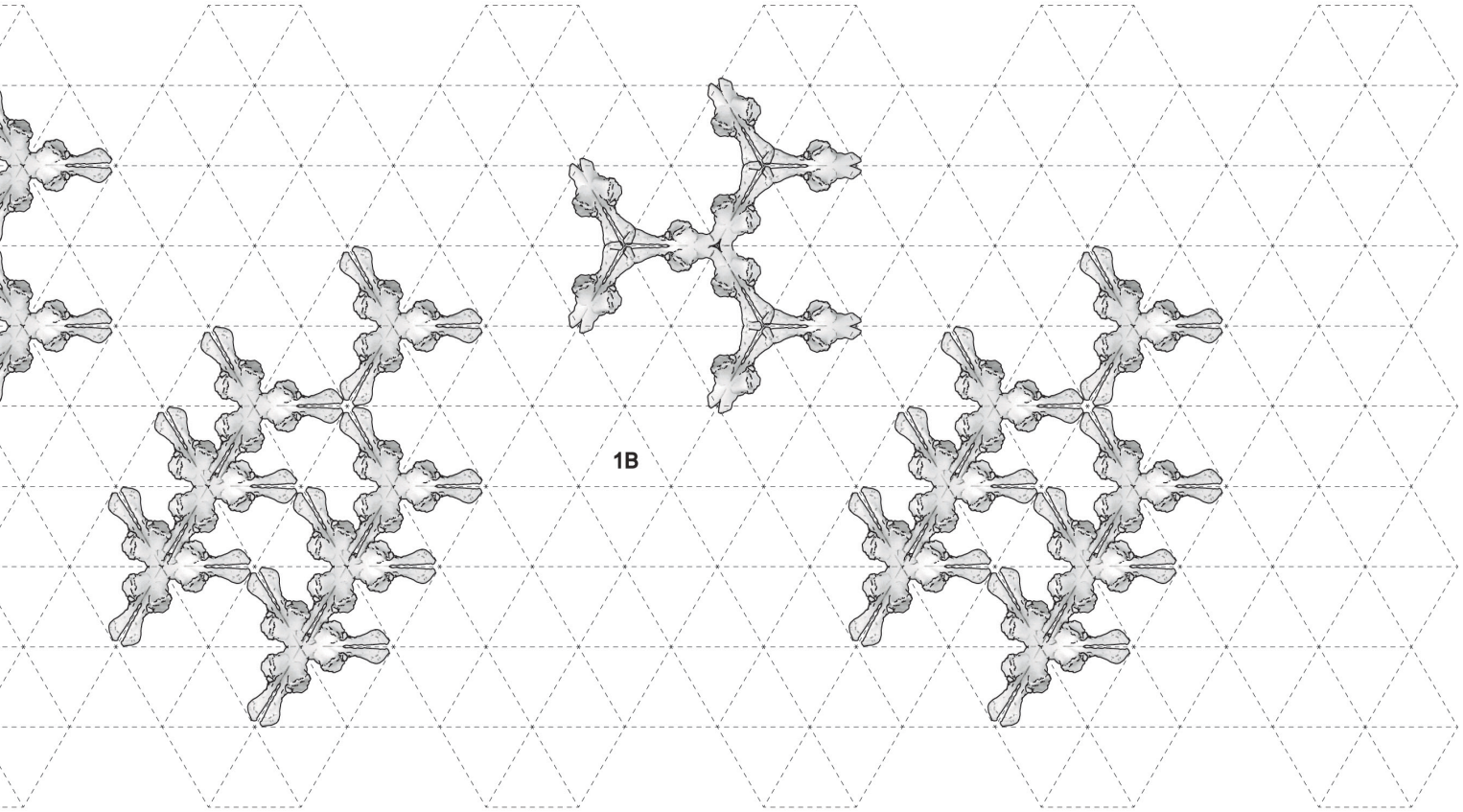
TIGHT



LOOSE




3B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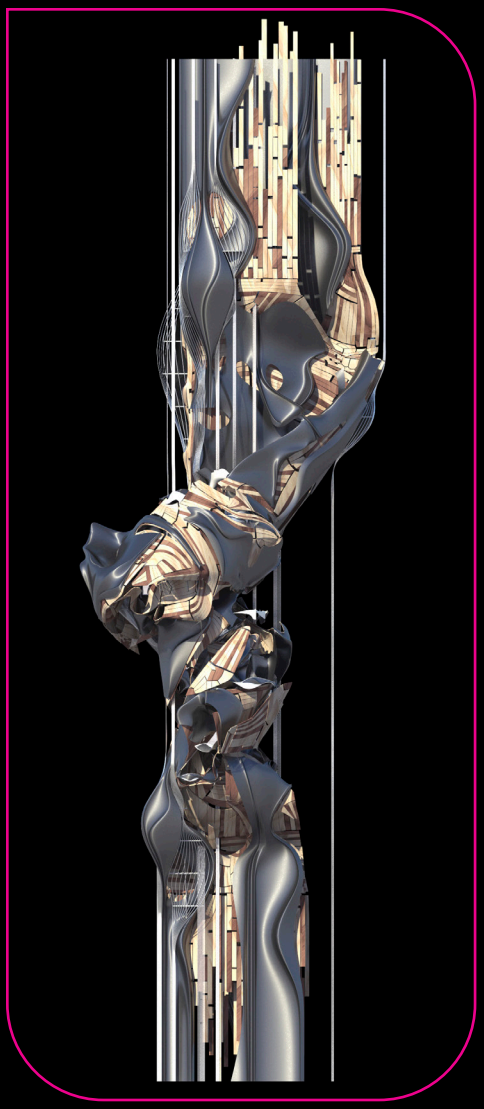


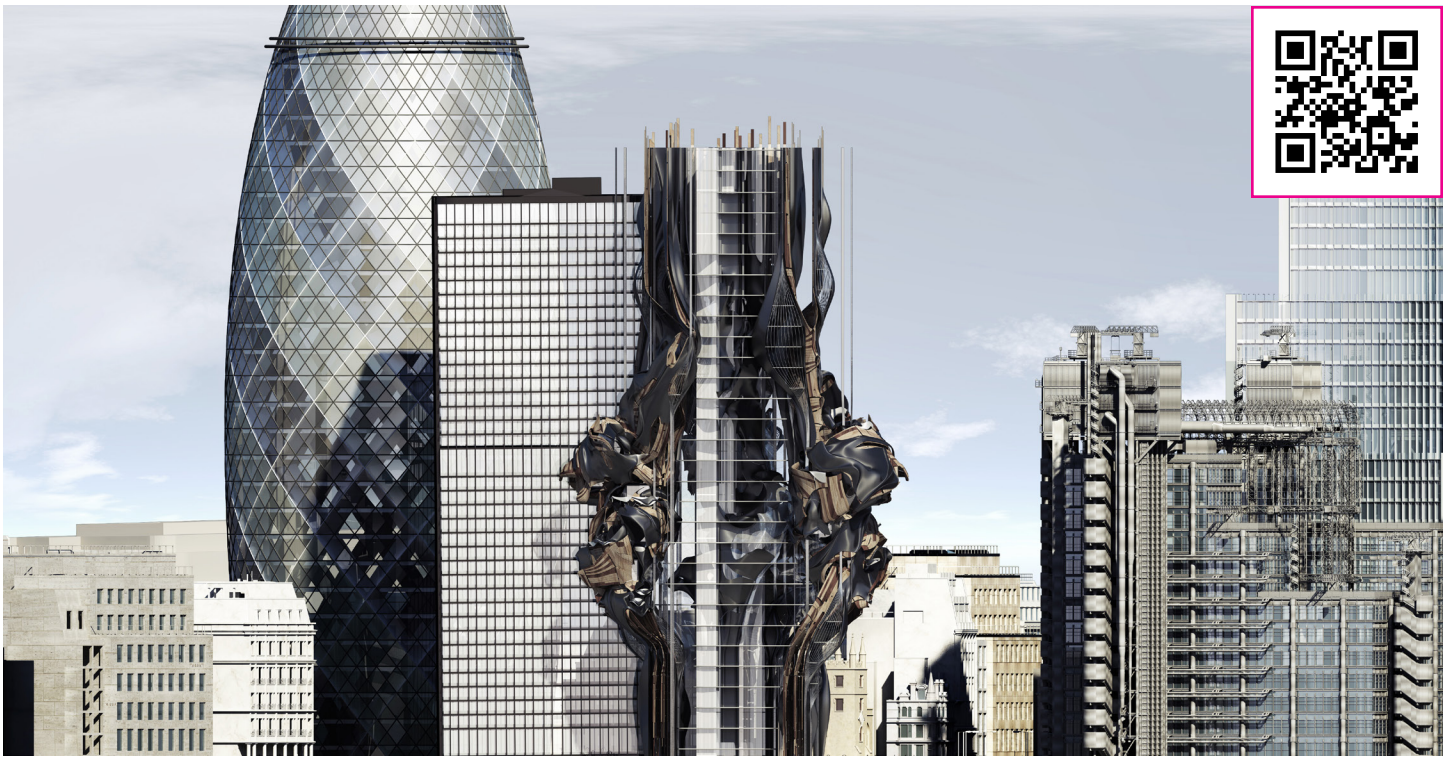


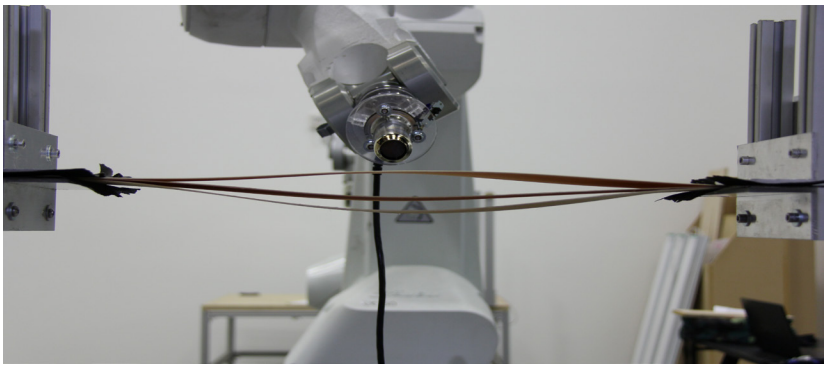


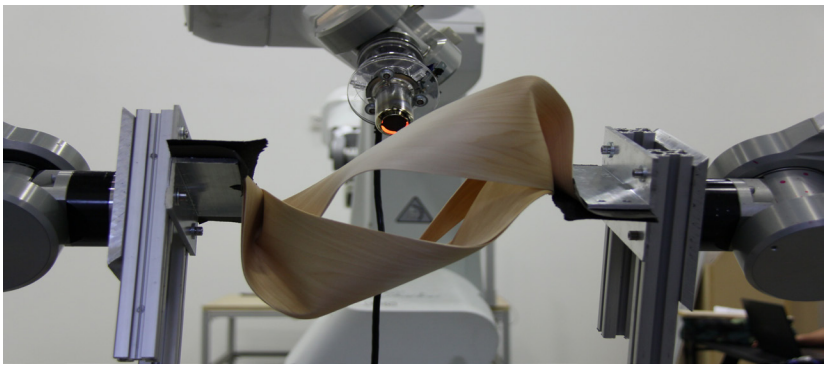


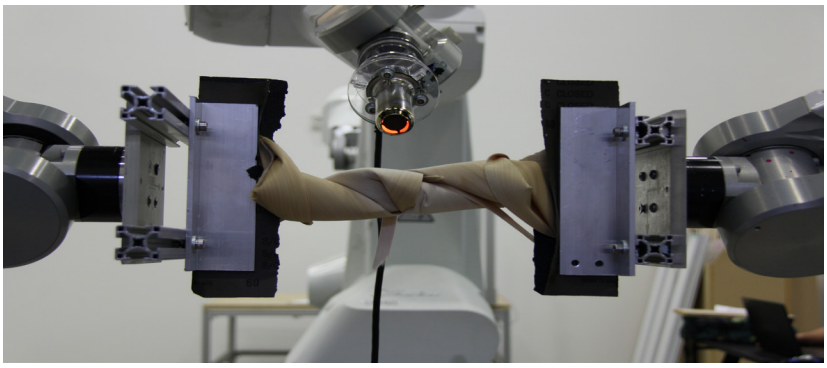
Non-Axisymmetric Disruptions

This project explores the development of a relationship between skin, volume, program, and material processes. Material is twisted using a series of precise movements creating volumes between layers of thin wood through processes of delamination and twisting. Those explorations are then re-interpreted into a tower set to disrupt typical tower typology through a disrupted center. Scan the QR code for a process video.

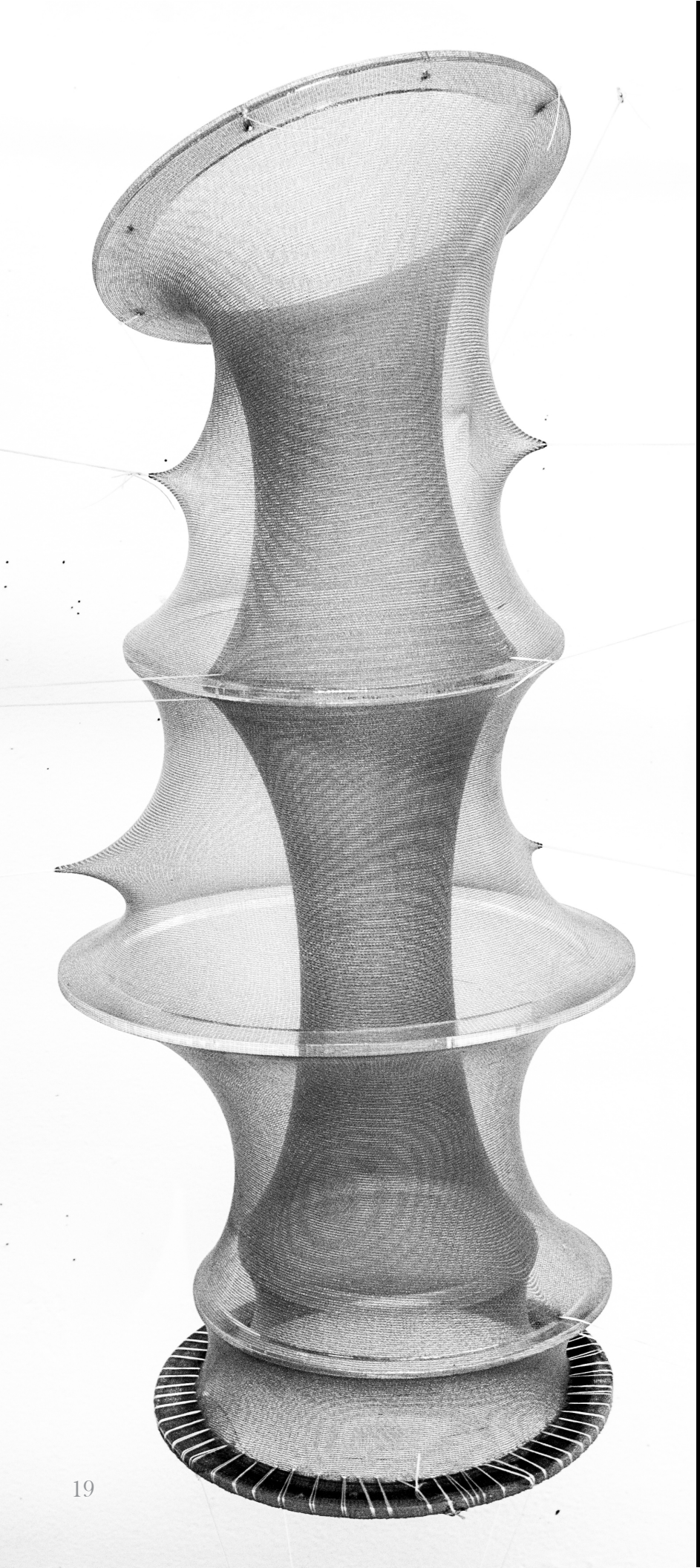












Things

Left: A study of tension forces through a surface. The fabric model is hung with a weighted bottom ring, pulling the fabric into shape. Intermediate rings create variation in the surface and are held in place through compression forces of the fabric being stretched over the rings.

Right Upper: The Edison Lamps: a series of chandeliers created by aggregating bulbs into multiple arrangements. Designed during an internship with HDA-X.

Right Middle: A cantilevered surface created with 5 layers of compressed composite tape and resin infused string.

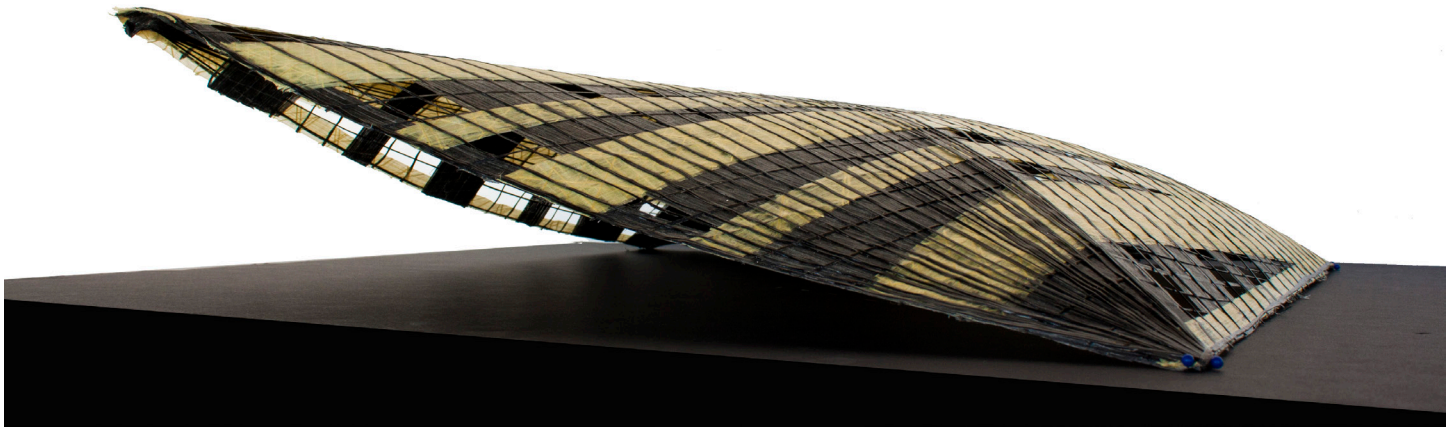
Bottom Right: Close-up of the composite surface.

Bottom Left: Table version of the Edison Lamp.











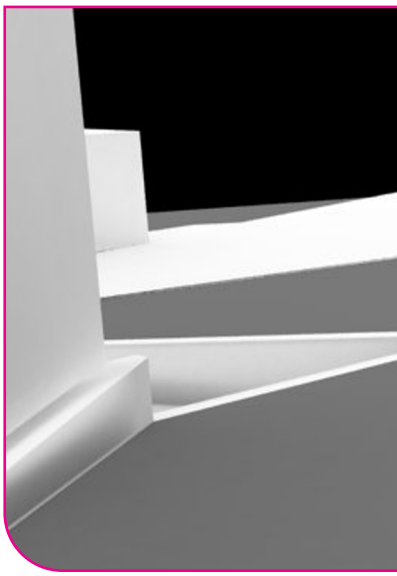


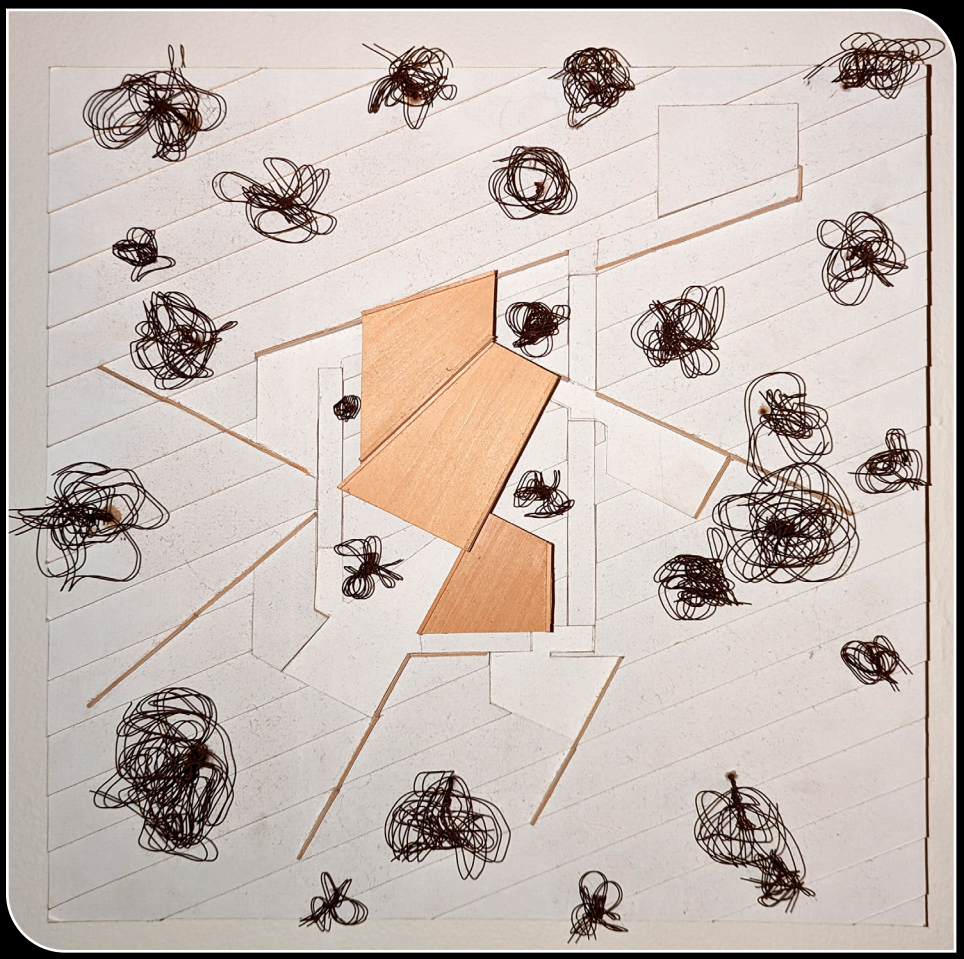
Site Plan
1/16"=1'

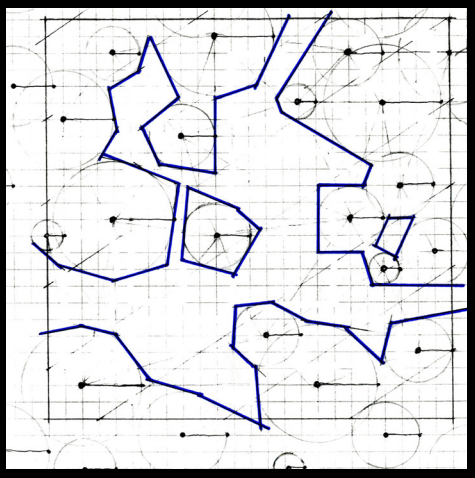


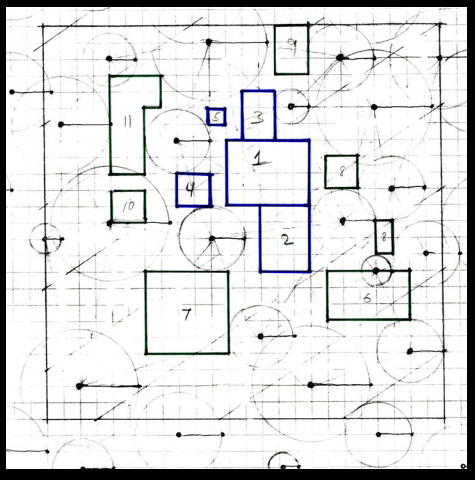
One-Room School House

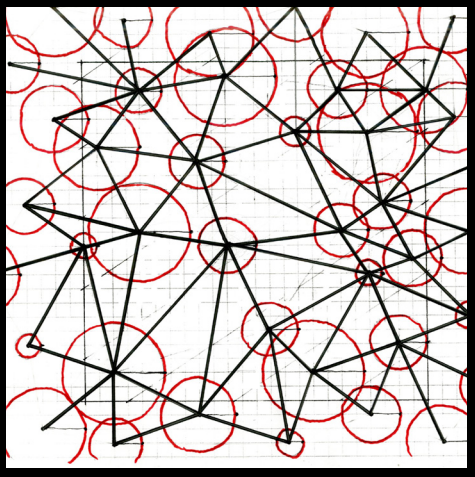
The one-room school house looks into tectonic relationships between ground, wall, and volume. The project begins with a hyper analysis on finding spatial organization within a random field of trees, looking at canopy radius versus open space, versus program. Then moves into rationalizing the analysis into a series of outdoor and indoor spaces spaced throughout the field of trees - retaining walls reaching beyond hard-scaped areas attempt to blend the architecture within the landscape. Retaining walls slip past one another, giving a sense of vertical and horizontal discontinuity while trying to rationalize changes in grade with circulation ramps.









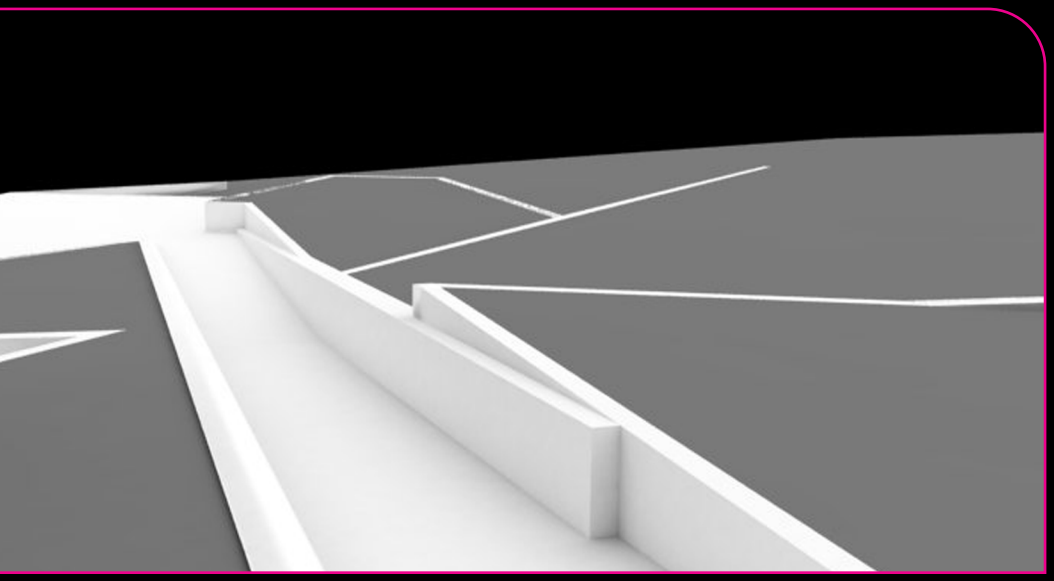


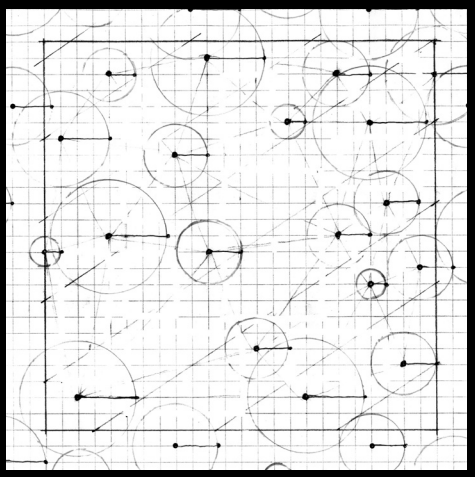
Left: Plan Drawing.

Top: Physical Model.

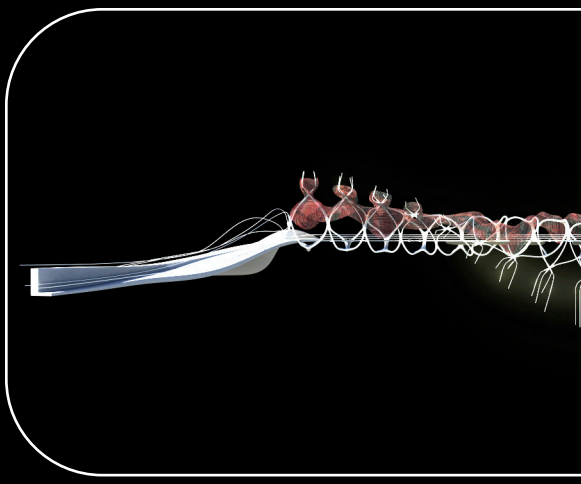
Right: Diagrams analyzing spatial patterns found within a seemingly random layout of trees.

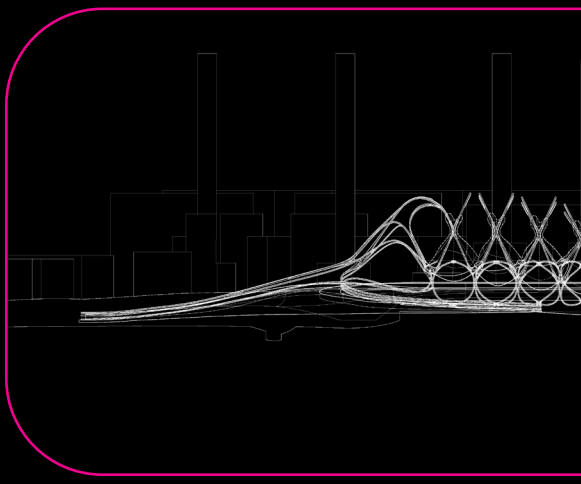
Bottom: Rendering of the relationship between ground, circulation paths, and retaining walls.







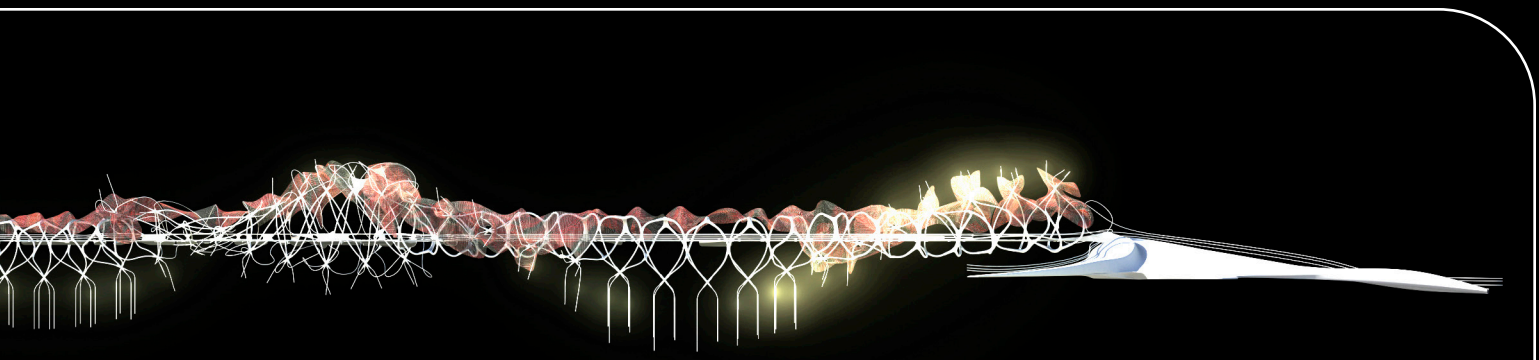




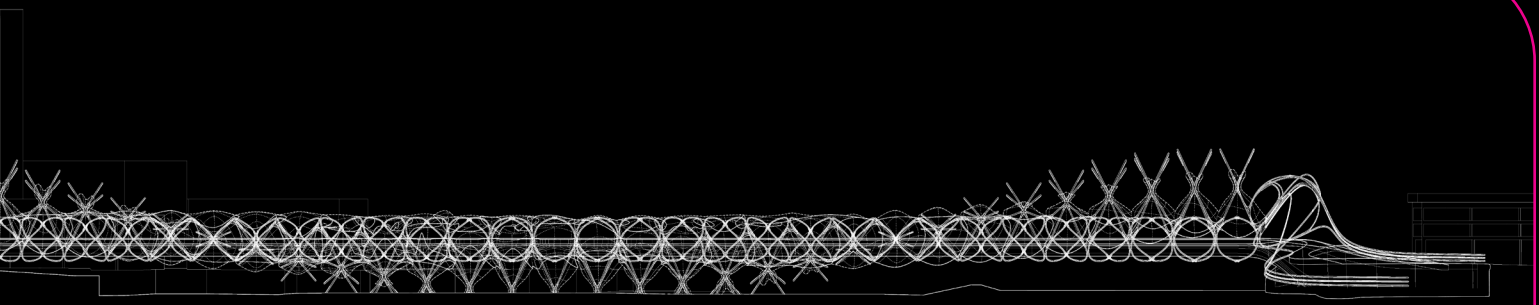


Barcelona Foot Bridge

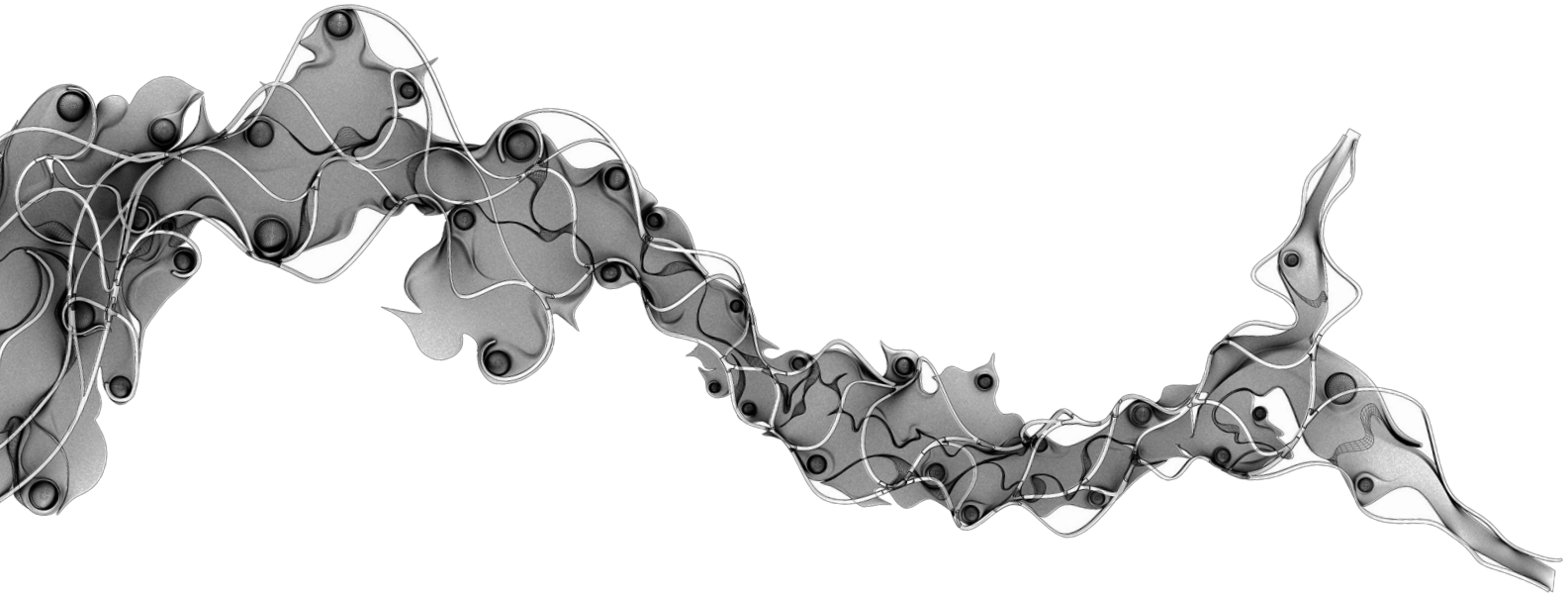
Designed during an internship for HDA-X (formerly Xefirotarch) - led by Hernan Diaz-Alonso, the Barcelona Footbridge acts as a pedestrian walkway across a major river outlet. The path takes a snaking rout across the water and bulges into wider areas allowing for moments to experience the ocean/city views, moments of reflection, and other types of gatherings.



Option 1 - Elevation



Option 2 - Elevation



Grassi Design Group





Professional Work

Projects completed while working for Grassi Design Group include historic renovation, brownstone rehabilitation, and commercial hospitality projects.

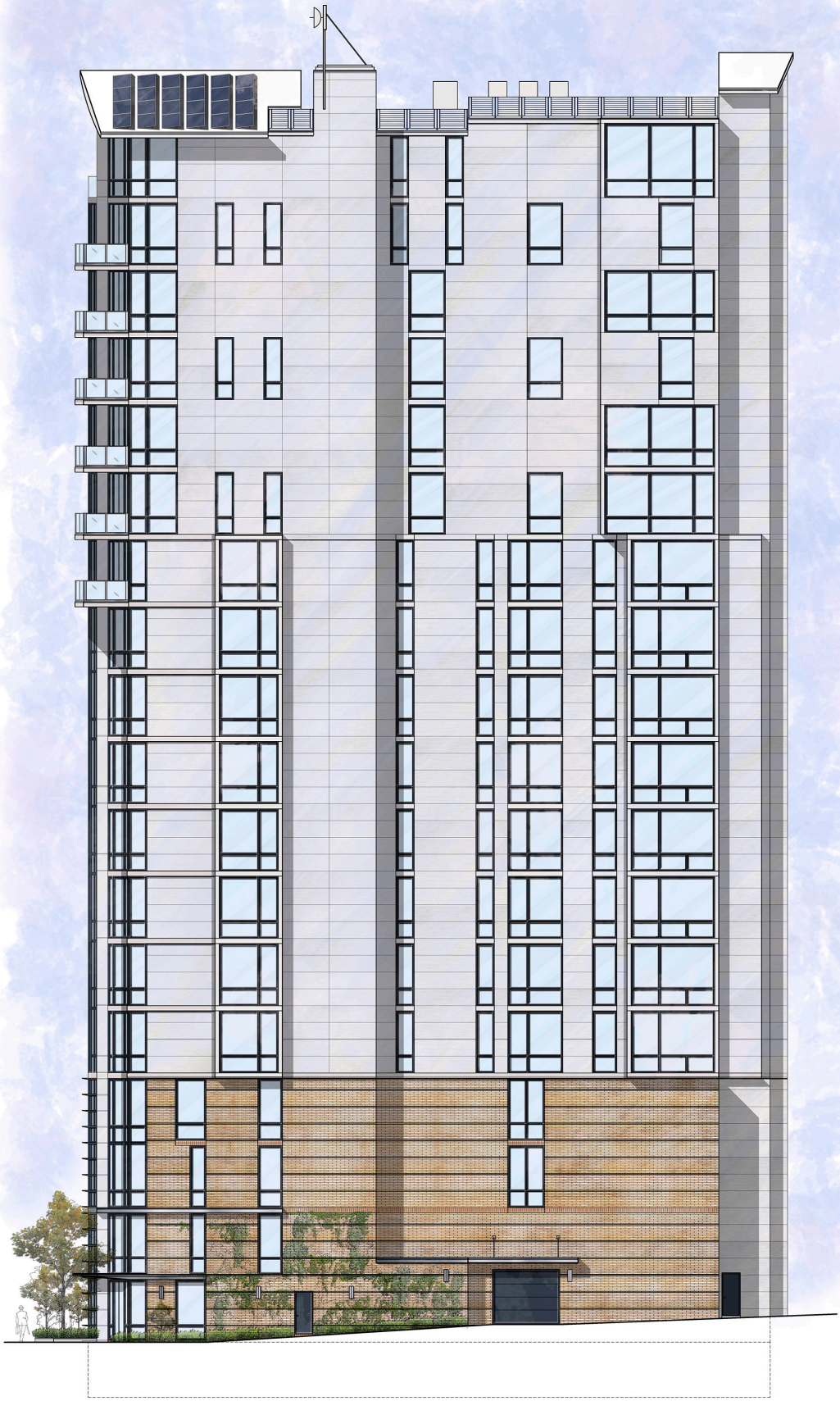
Far Right: Digital Rendering of 30 Concord Square

Top / Middle: Interior photos of 11A Melrose Street

Bottom: Image of The Algonquin Club in collaboration with Ken Fulk Inc.













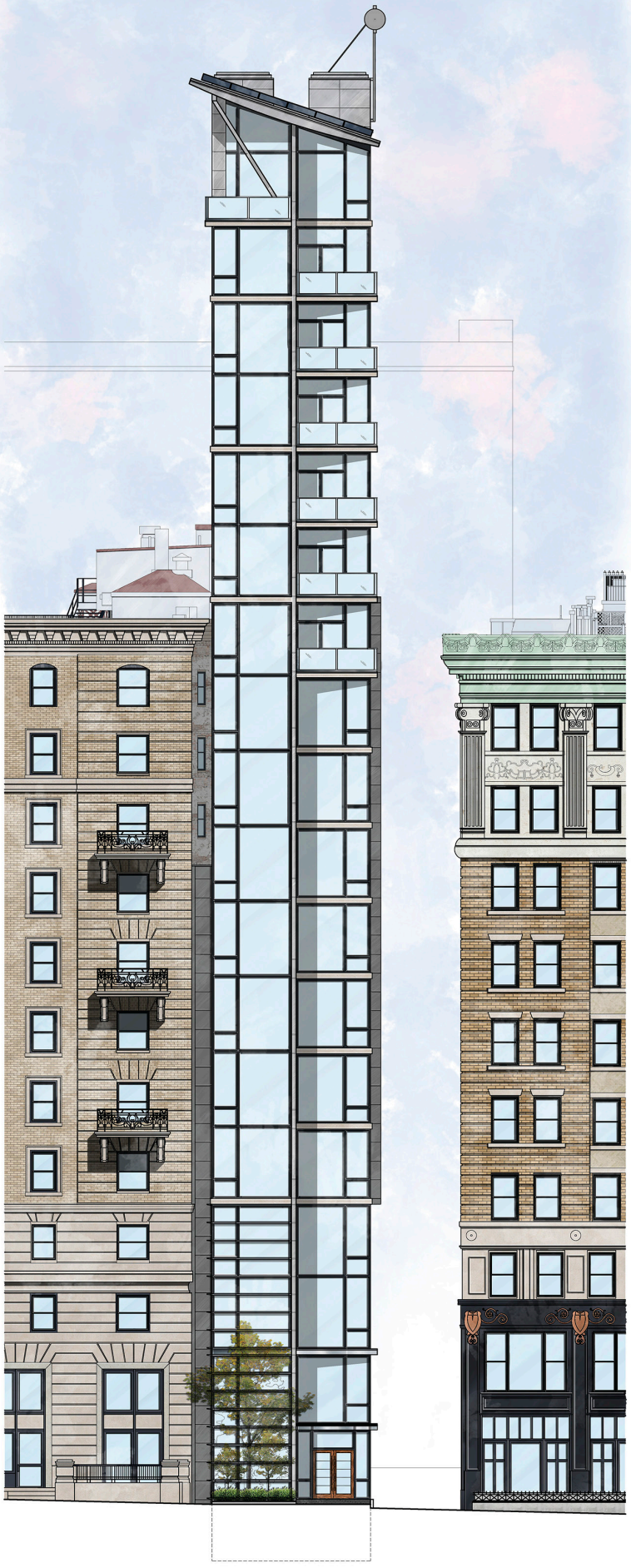


Center: Photos of Grassy Flats Resort



Left/Right: Digital Drawings of 17 Beacon







GRASSY FLATS BUILDI



GRASSY FLATS BUILDI

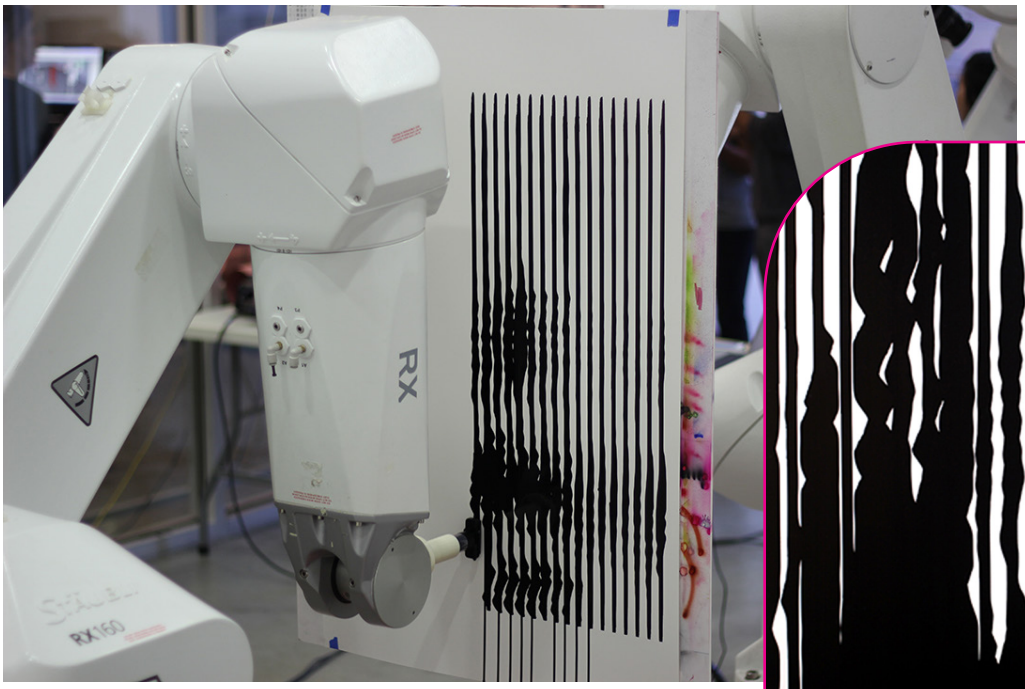


NG ELEVATION – STREET SIDE



NG ELEVATION – OCEAN SIDE



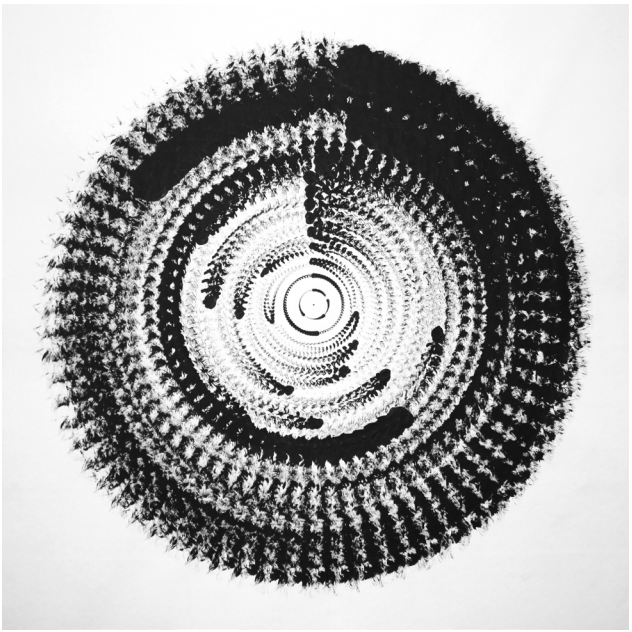


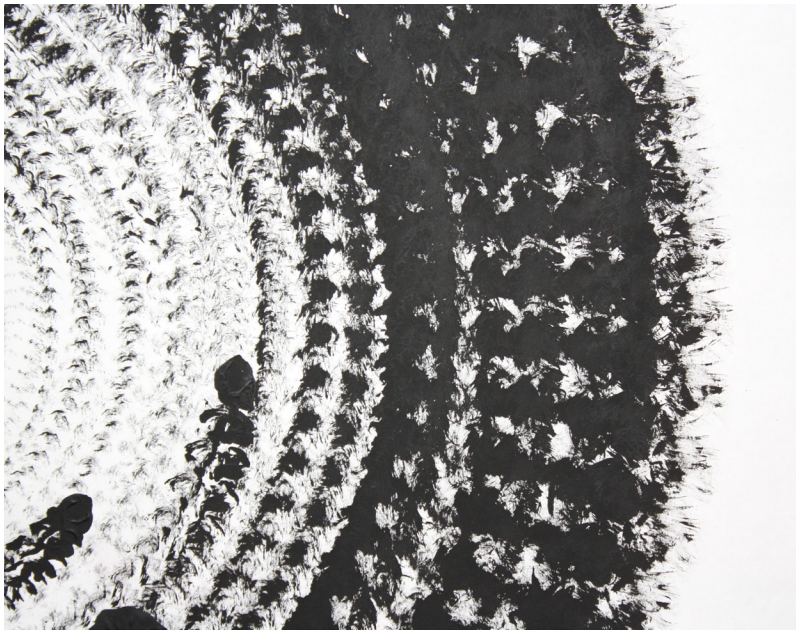


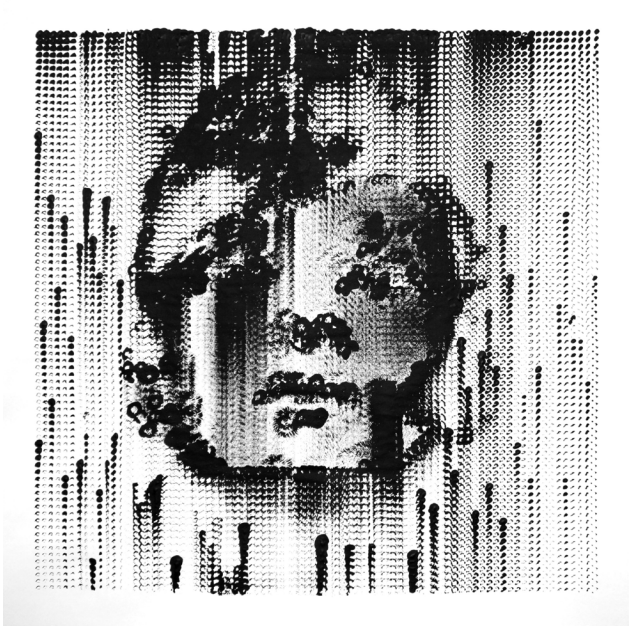
Hyper-Real Material Aesthetics

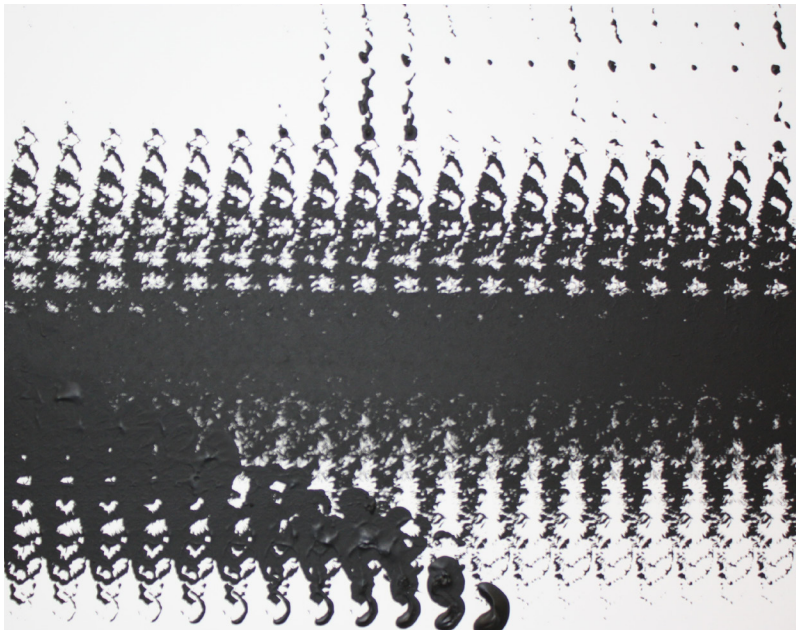


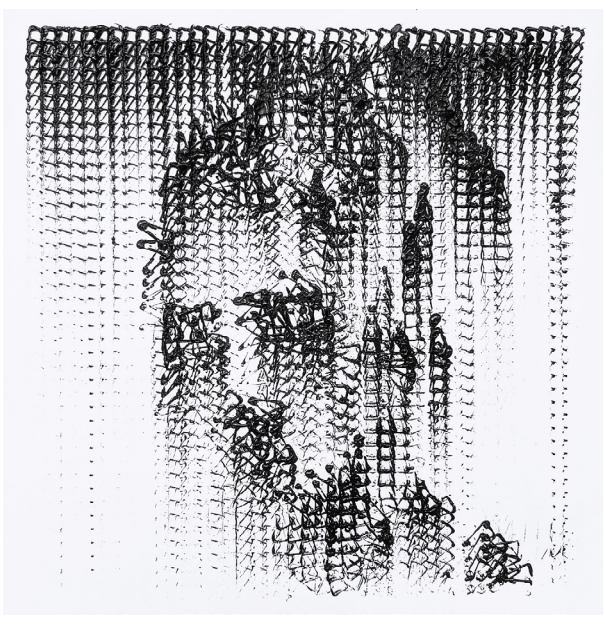
These paintings are a result from an exploration into computer numerical controlled painterly effects with different types of paint applicators attached to a 6-axis robot arm. Brushes, stamps, and foam blocks were used to apply paint to canvas - patterns are derived from gradients, image sampling, or 3D geometric contouring.





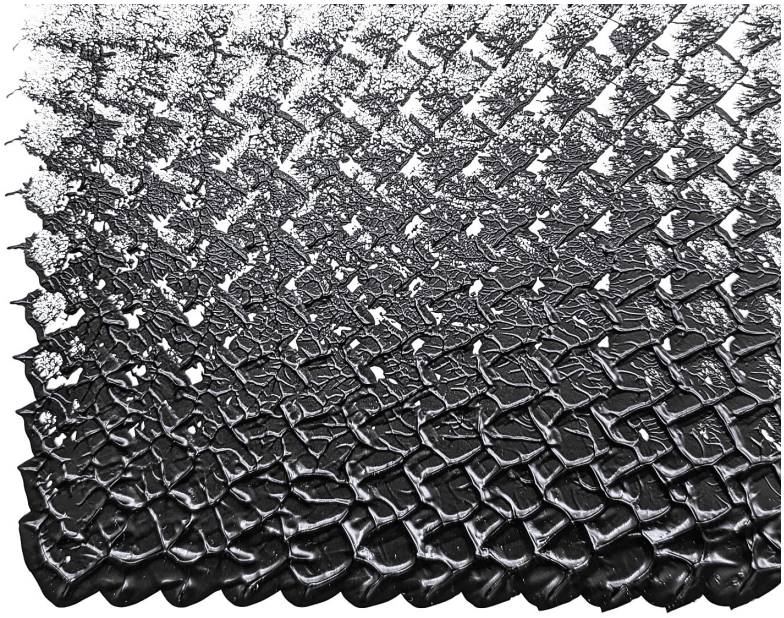


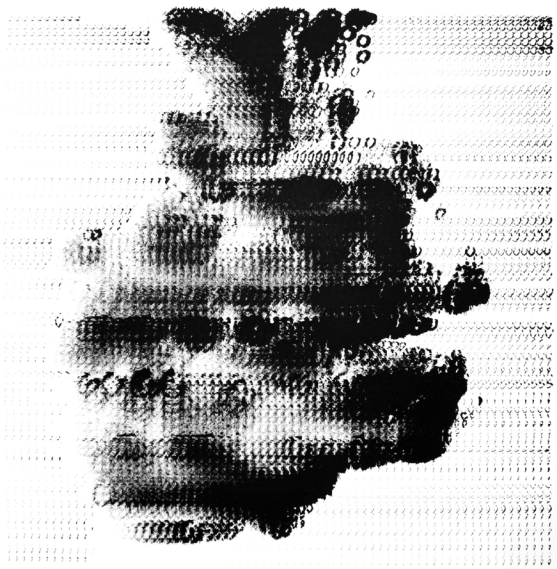


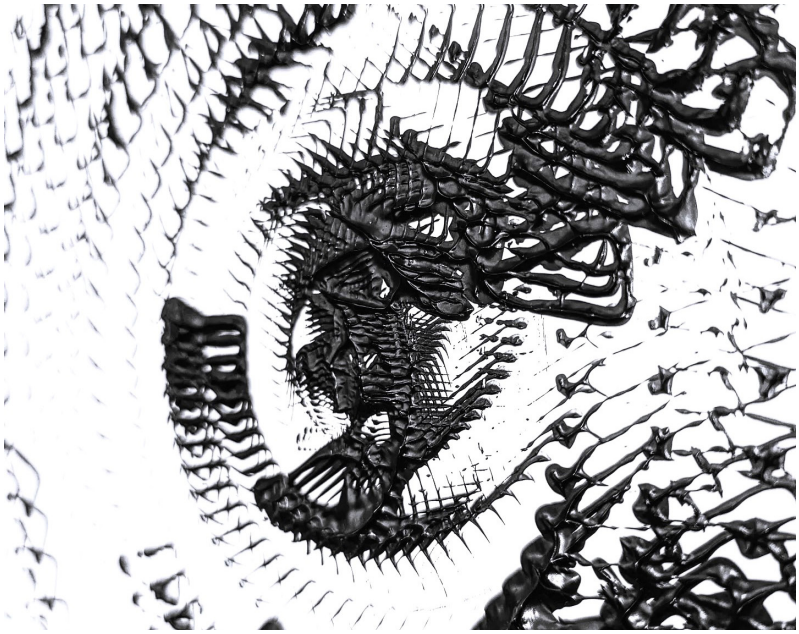


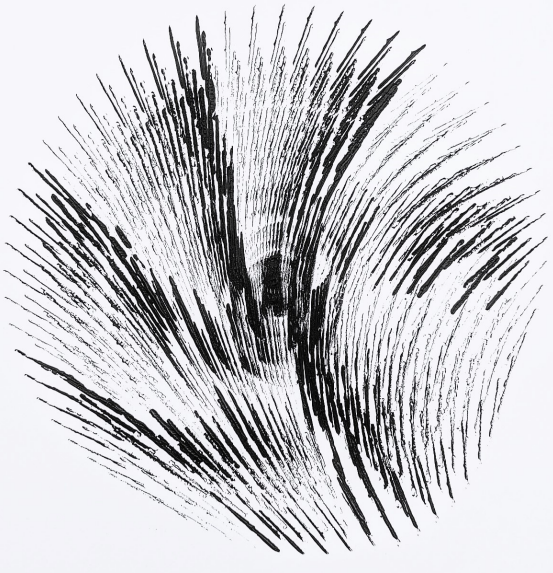


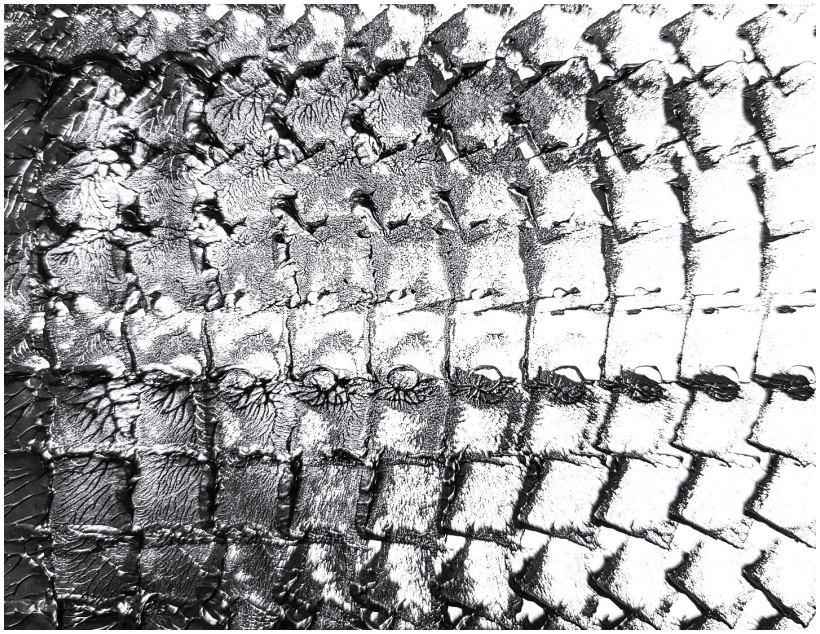














Above: Exhibit of student work at Wentworth Institute - follow the qr code for a video of the process.



