M.A.L.A.

MULTICULTURAL ADVANCED LEARNING ACADEMY

NEAL MIDDLE SCHOOLCARRINGTON MIDDLE SCH

MALA will empower their students through culturally relevant teaching. Learning will be extended outside of the classroom and into the community. Students will make decisions on important social issues and take actions to help solve them. Our school will be a place where *all* students want to be and learn.

MISSION

Community, Equity & Cultural Empowerment

Comunidad, Equidad y Empoderamiento Cultural

MOTTO

PROBLEMS & SOLUTIONS

WE TALKED TO:

Teachers

Community Members

Students

PROBLEMS:

Inequitable Schools

Students are not engaged

Division in our community

Not having access to Healthy sources of nutrition

Solutions:

Culturally Relevant Teaching

Cultural Center

Community Engagement & Education

Healthy Meals, Urban Garde
Bee Hives

D.E.A.L.

ENGINEERING DESIGN PROCESS

DEFINE THE PROBLEMS

EXPLORE IDEAS

APPLY A SOLUTION

LOOK BACK & LEARN

D What is the problem you are trying to solve?

E Brainstorm, Research & Sketch
Be Creative & come up with new ideas.

A Model it, Build it

L Look back, learn and redesign if necessary

BLACK PANTH

+

WAKANDA

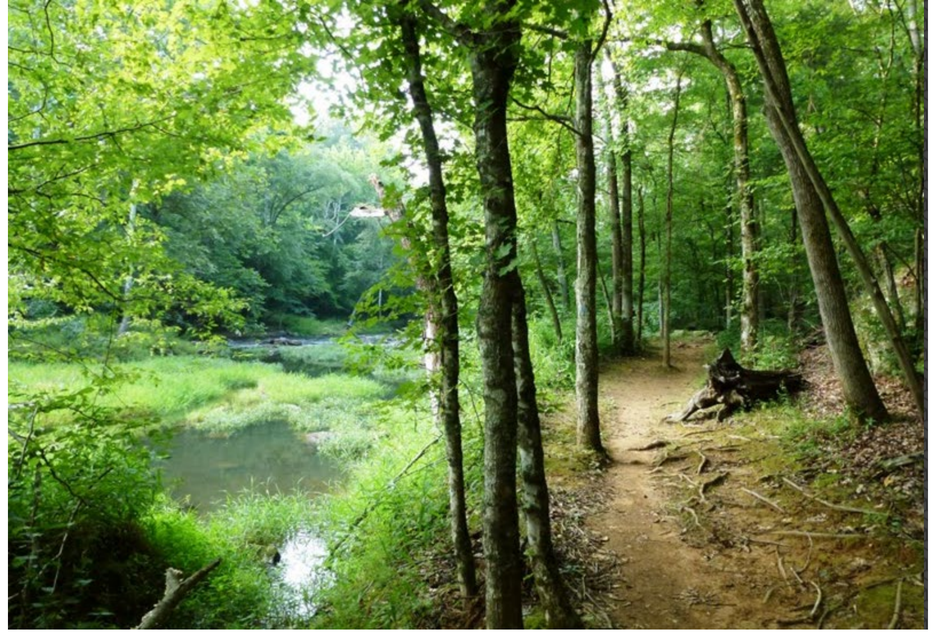
LOCATION

ENO RIVER PARK

The Eno is notable for its beauty and water quality

It has been preserved throughout the years

It has a long history of being a place where people have lived and worked

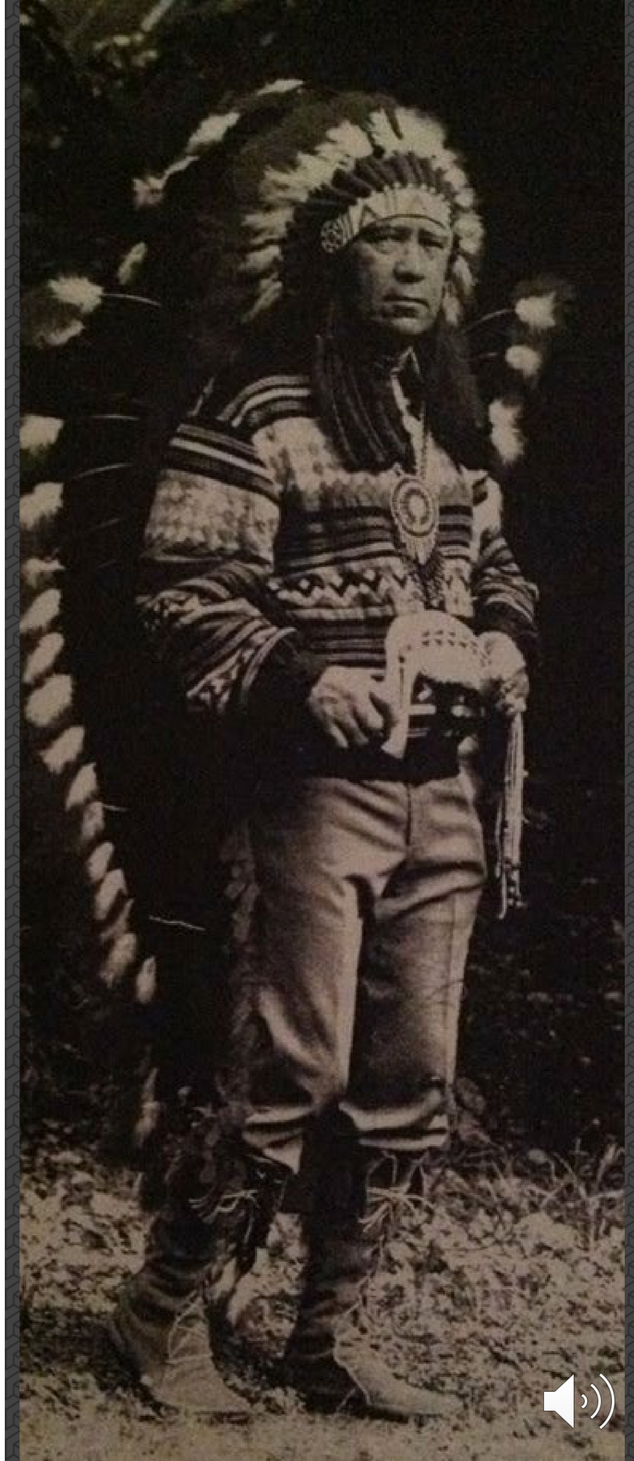


HISTORY OF THE ENO

Named after the Eno People

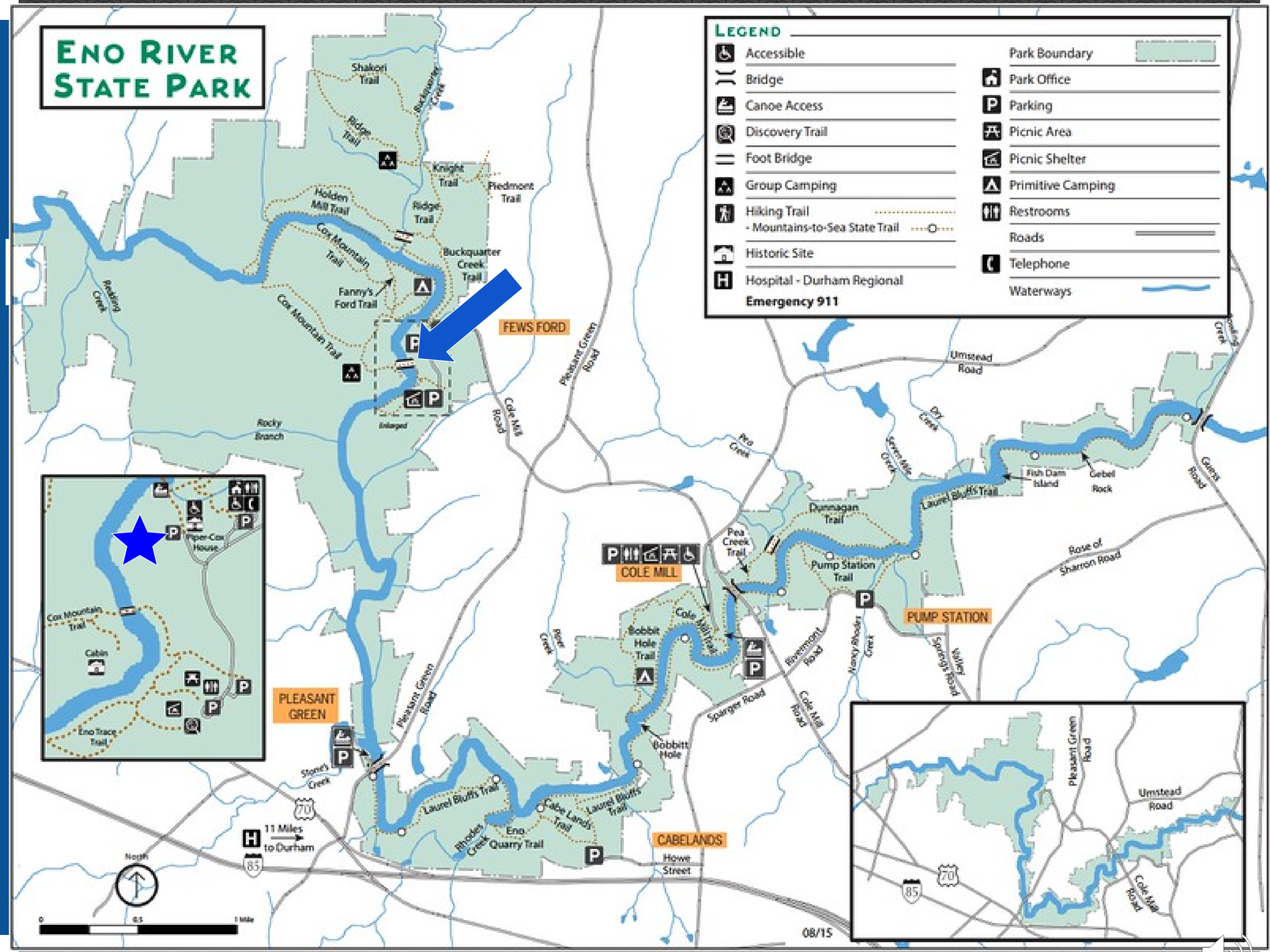
Mills were later built by Europeans

The river was used as a natural resource to power the mills



LOCATIO

ENO RIVER
DURHAM, NC



- Near trails
- Historic Sites
- Restrooms
- Picnic Area
- Boat Access
- Park Office
- Foot Bridge
- Parking/Street Access
- Camping Sites

PRESERVIN THE LAND

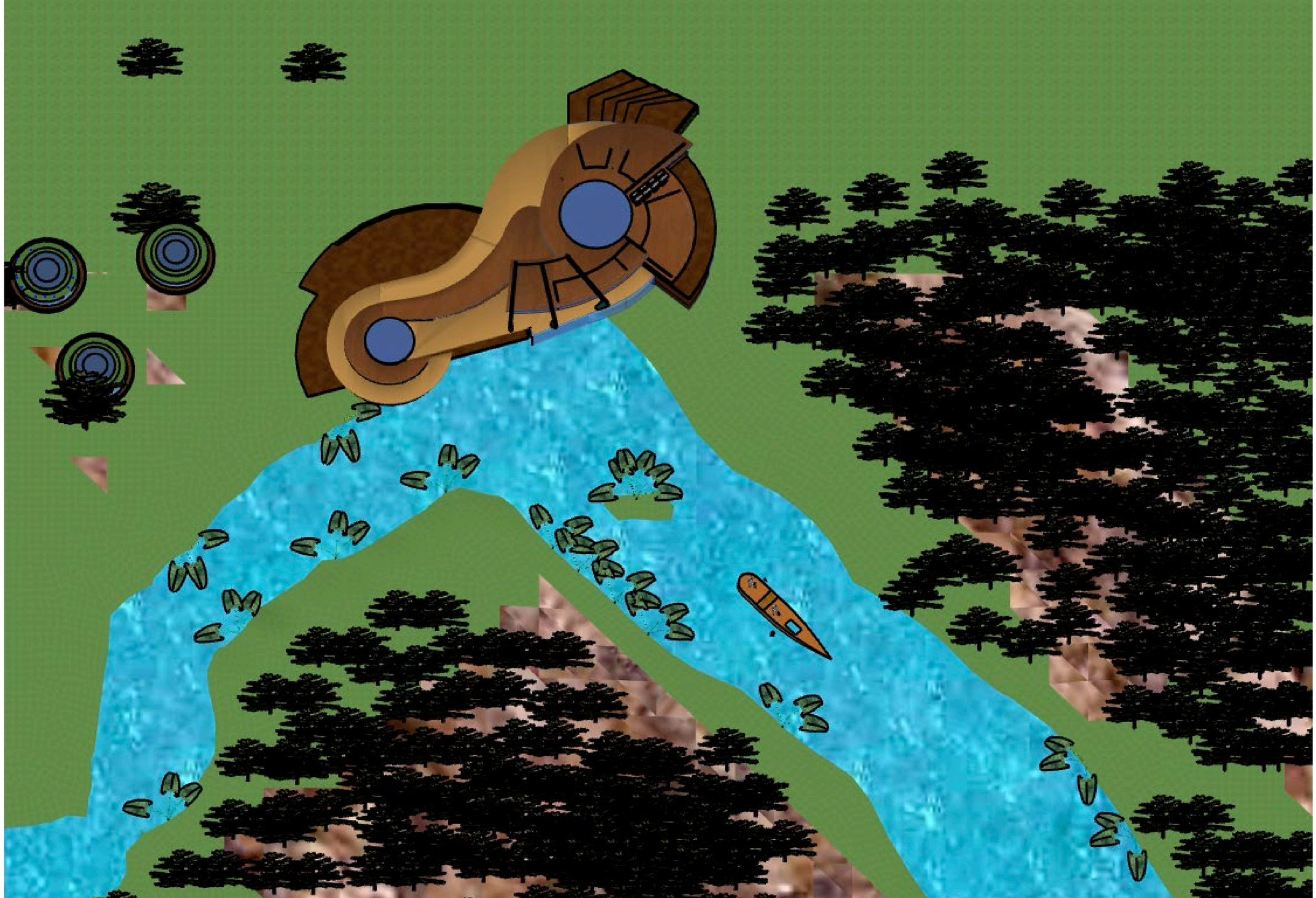
PRESERVING THE LAND IS OUR NUMBER ONE CONCERN WHEN BUILDING AT THIS LOCATION

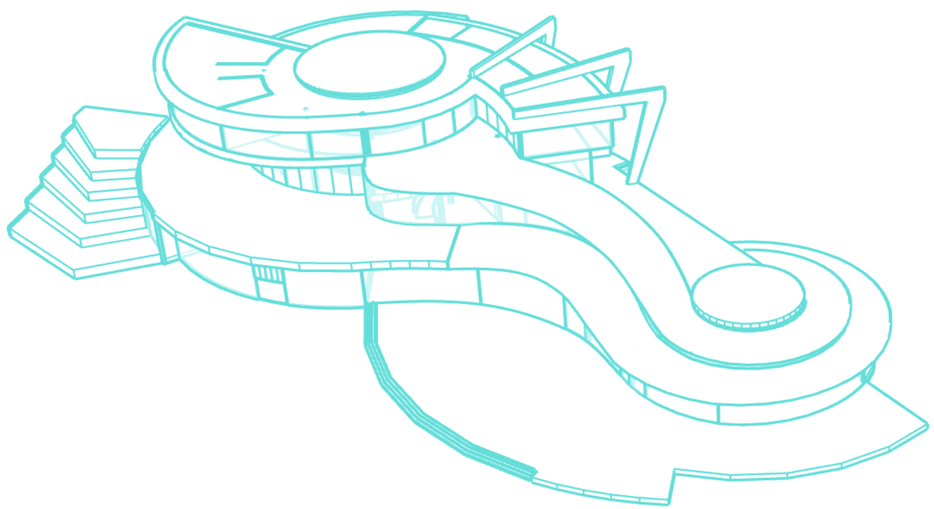
BUILD & POWER SCHOOL WITH NATURAL RESOURCES

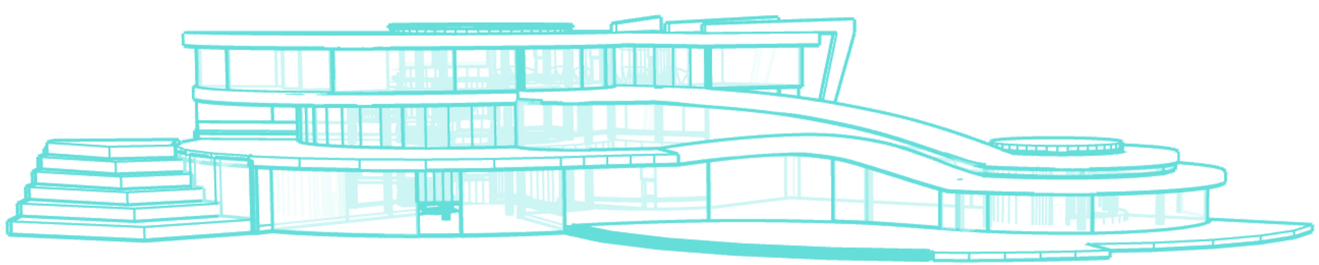
WE WILL THINK ABOUT HOW THE PLANTS, ANIMALS AND WATER WILL BE AFFECTED BY US BEING THERE

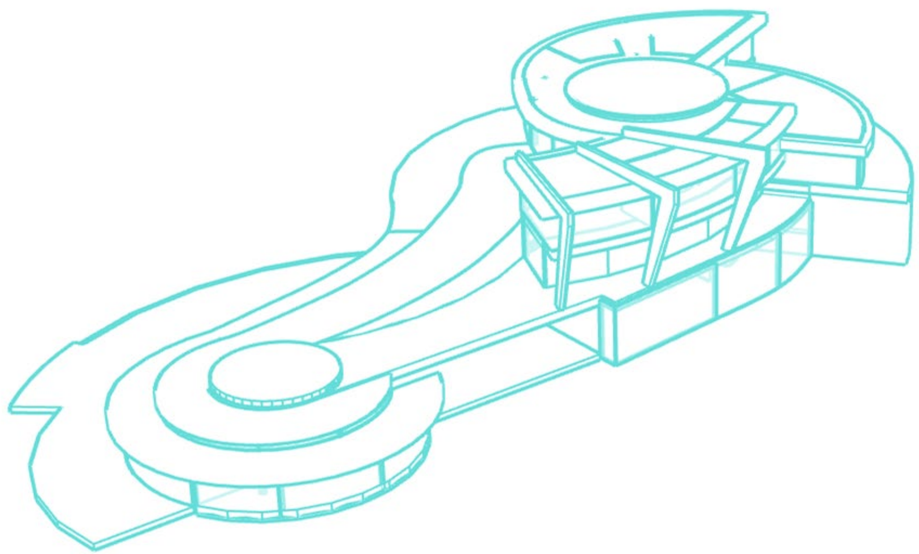
MALA

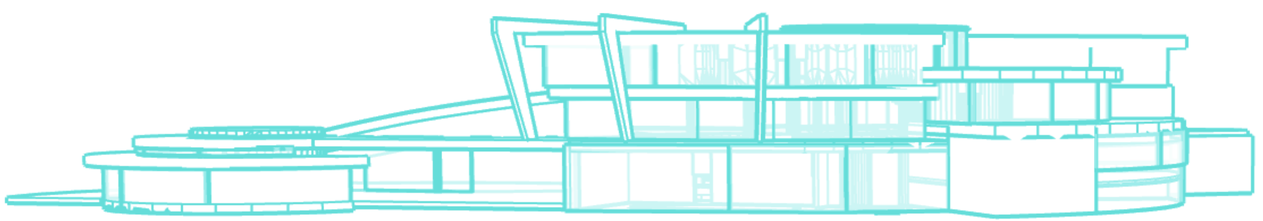
Multicultural Advanced Learning Academy
Eno River - Durham, North Carolina

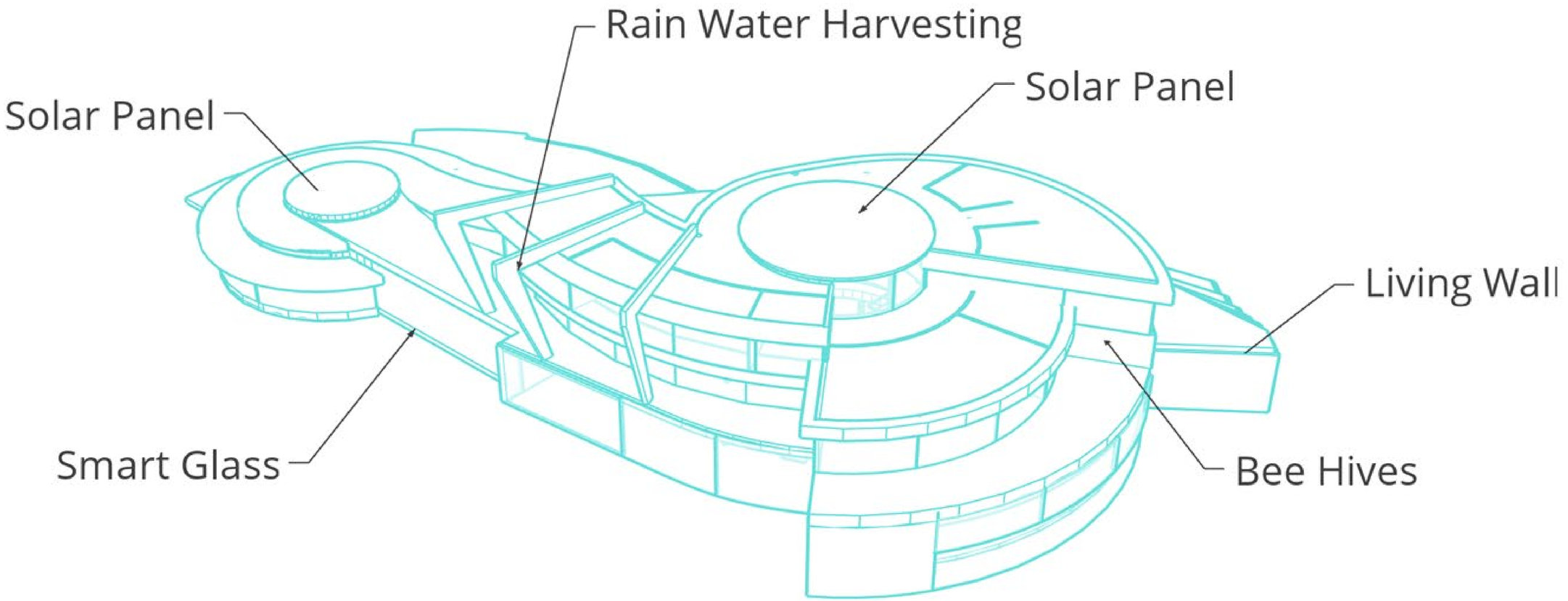


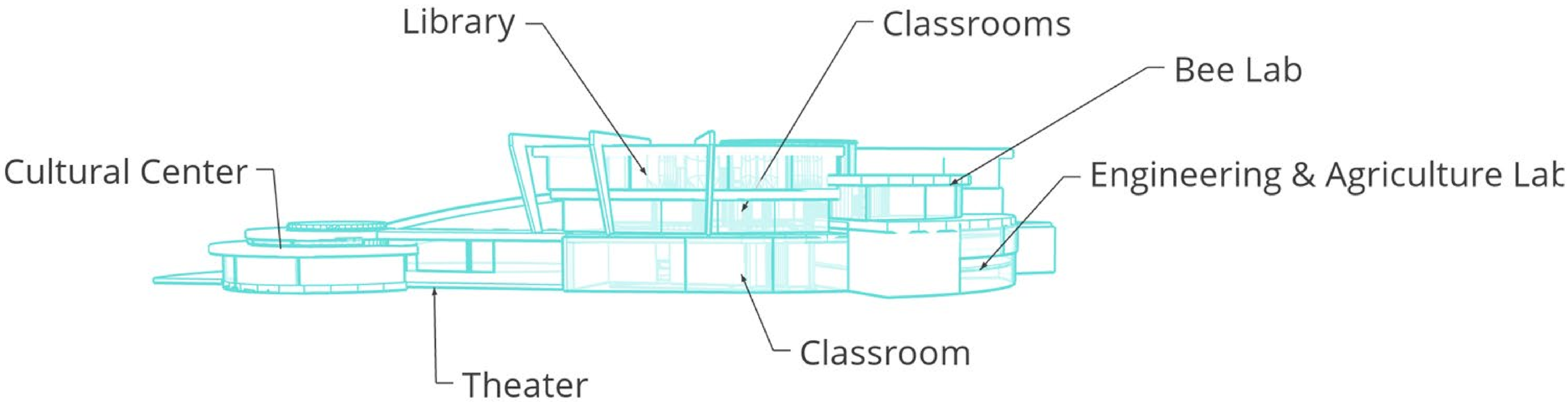


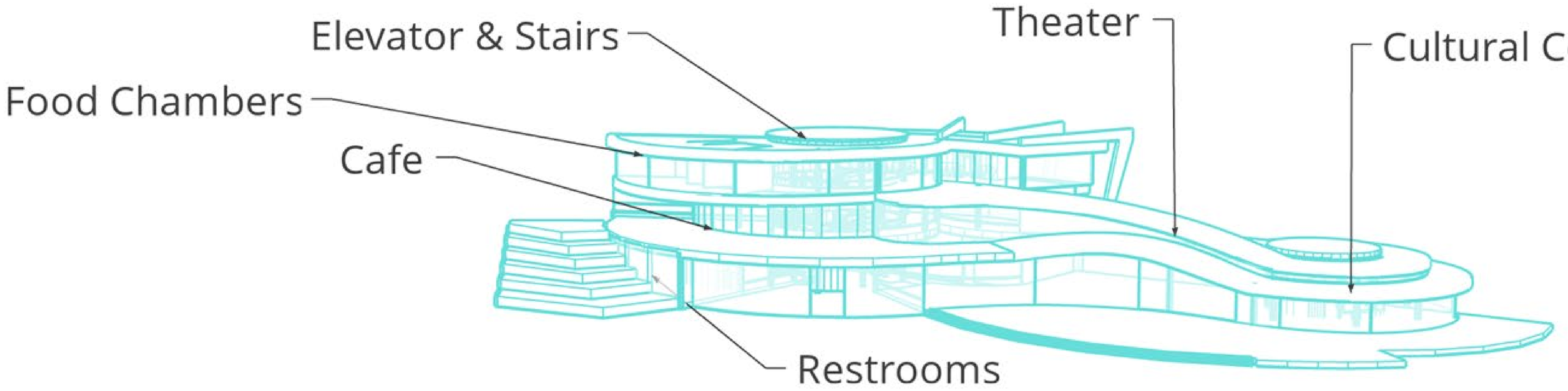


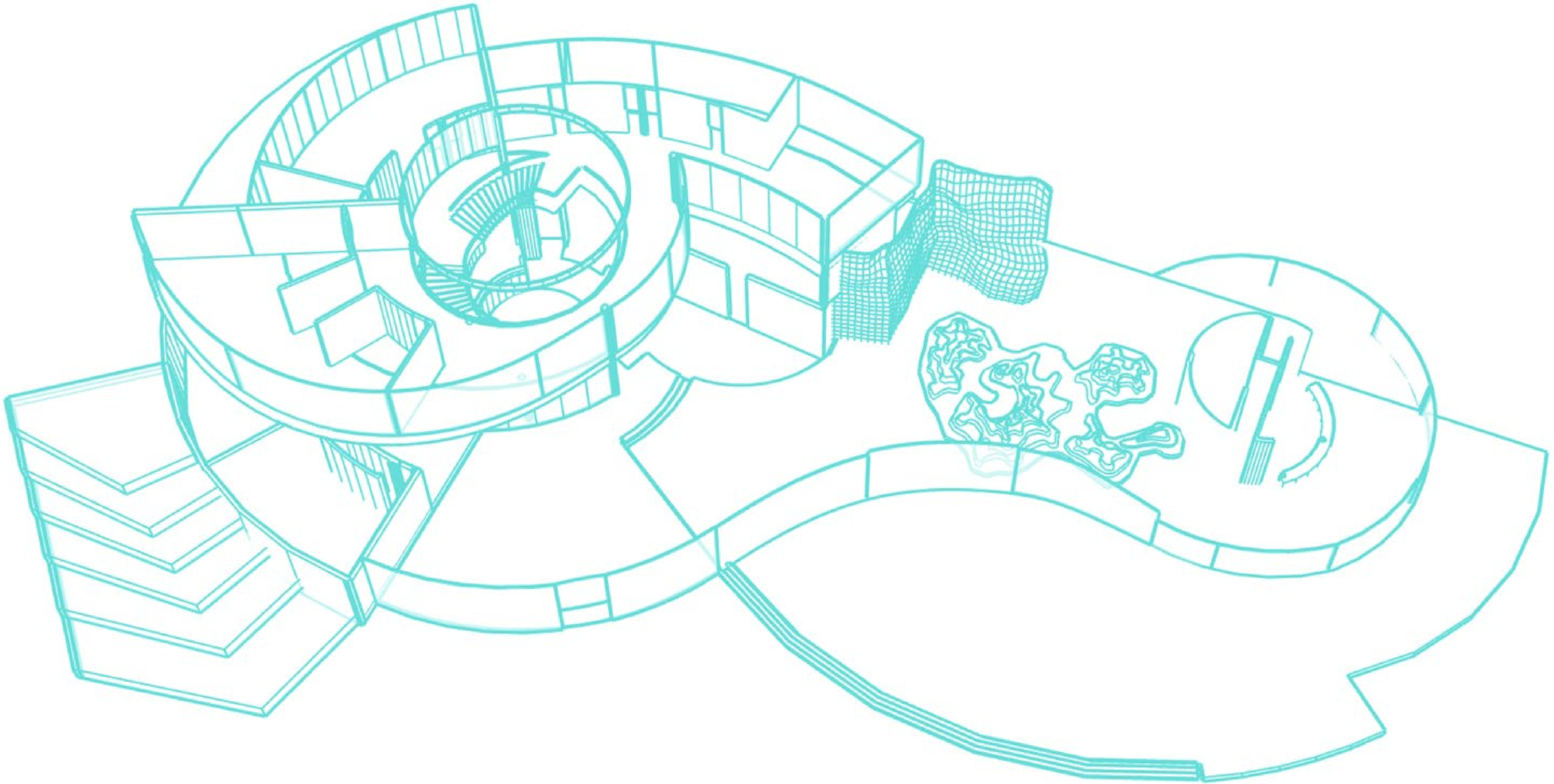





Rain Water Harvesting
Solar Panel
Solar Panel
Living Wall
Smart Glass
Bee Hives


Library
Classrooms
Bee Lab
Cultural Center
Engineering & Agriculture Lab
Classroom
Theater


Elevator & Stairs
Food Chambers
Cafe
Restrooms
Theater
Cultural Center



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UBUNTU

CULTURAL CENTER

UBUNTU

CULTURAL CENTER

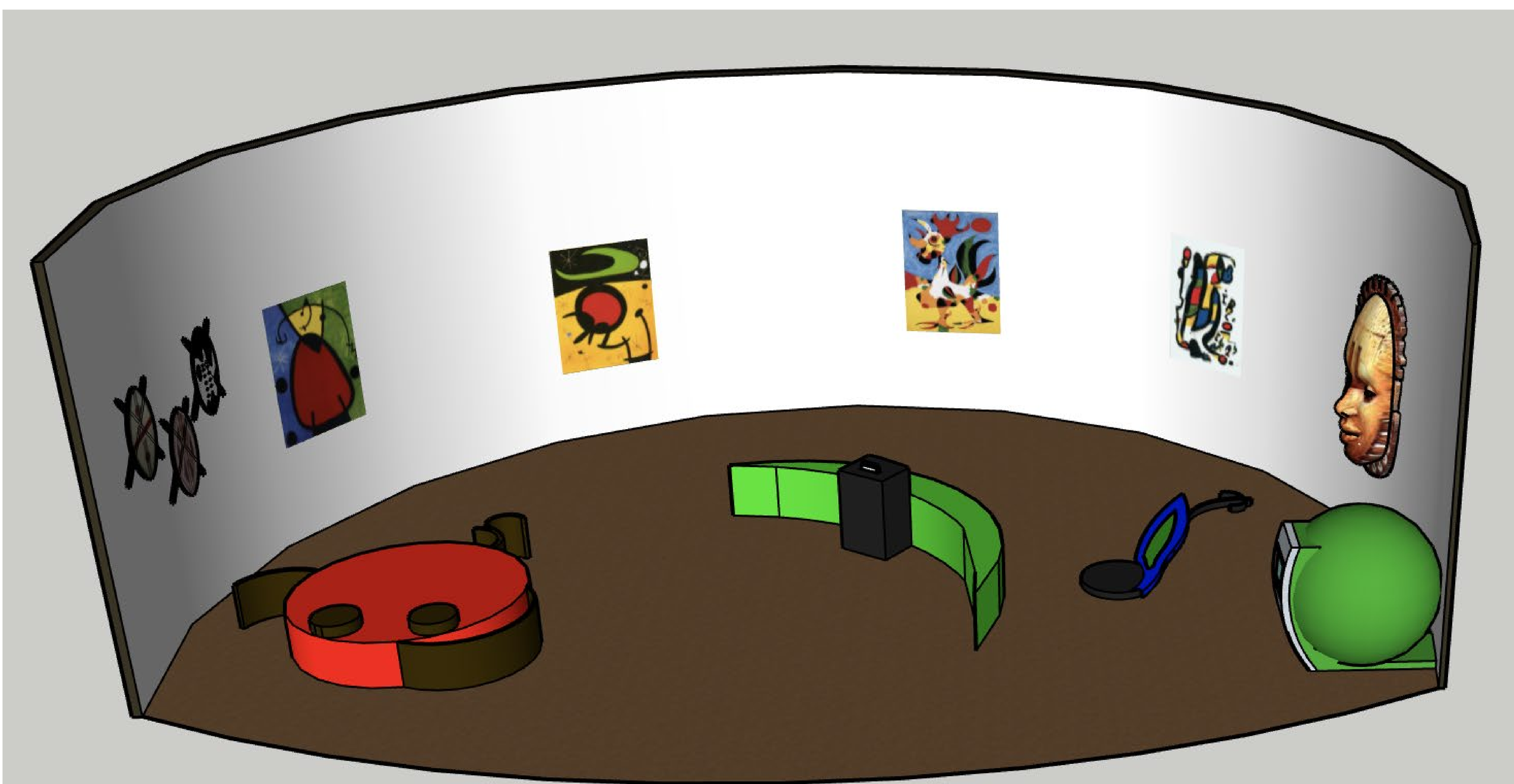
"I am, because you are"

Oneness, Humanity, Compassion

UBUNTU

CULTURAL CENTER

- Art Exhibits
- Theater Events
- Community & Family Events
- Performances
- Focus of Black & Indigenous Cultures



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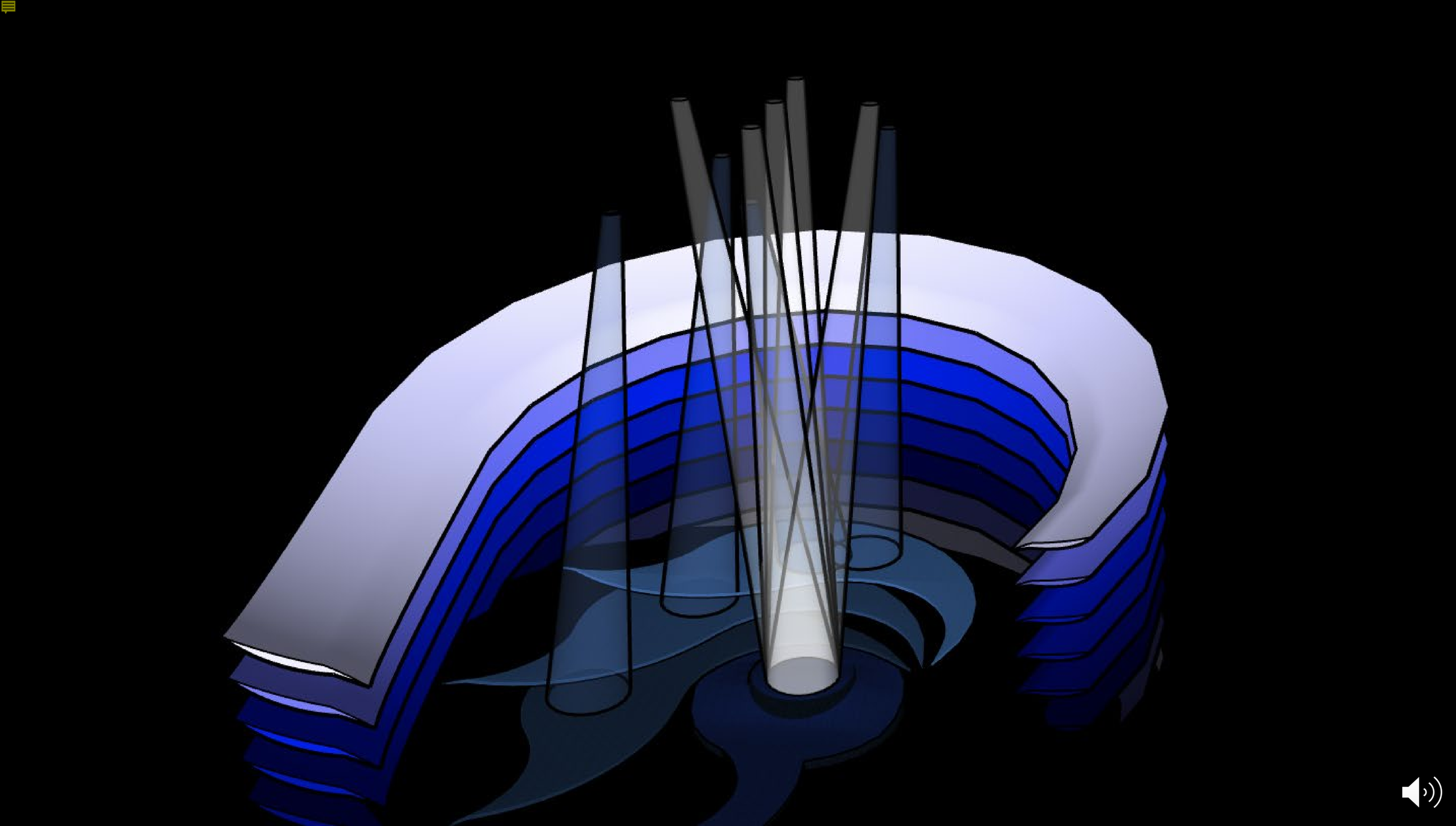
EL RIO

THEATER



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CLASSROOMS

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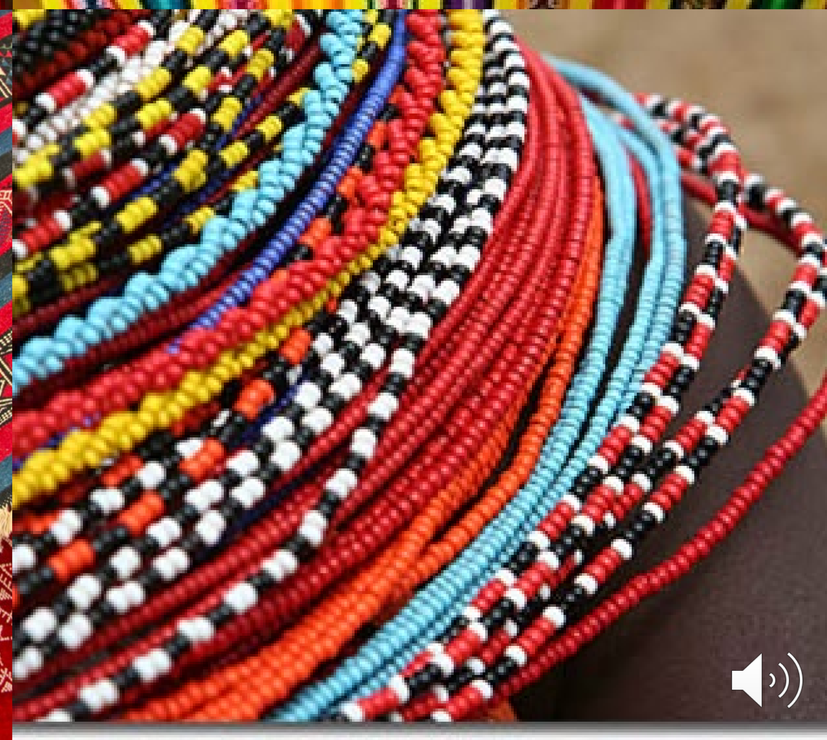
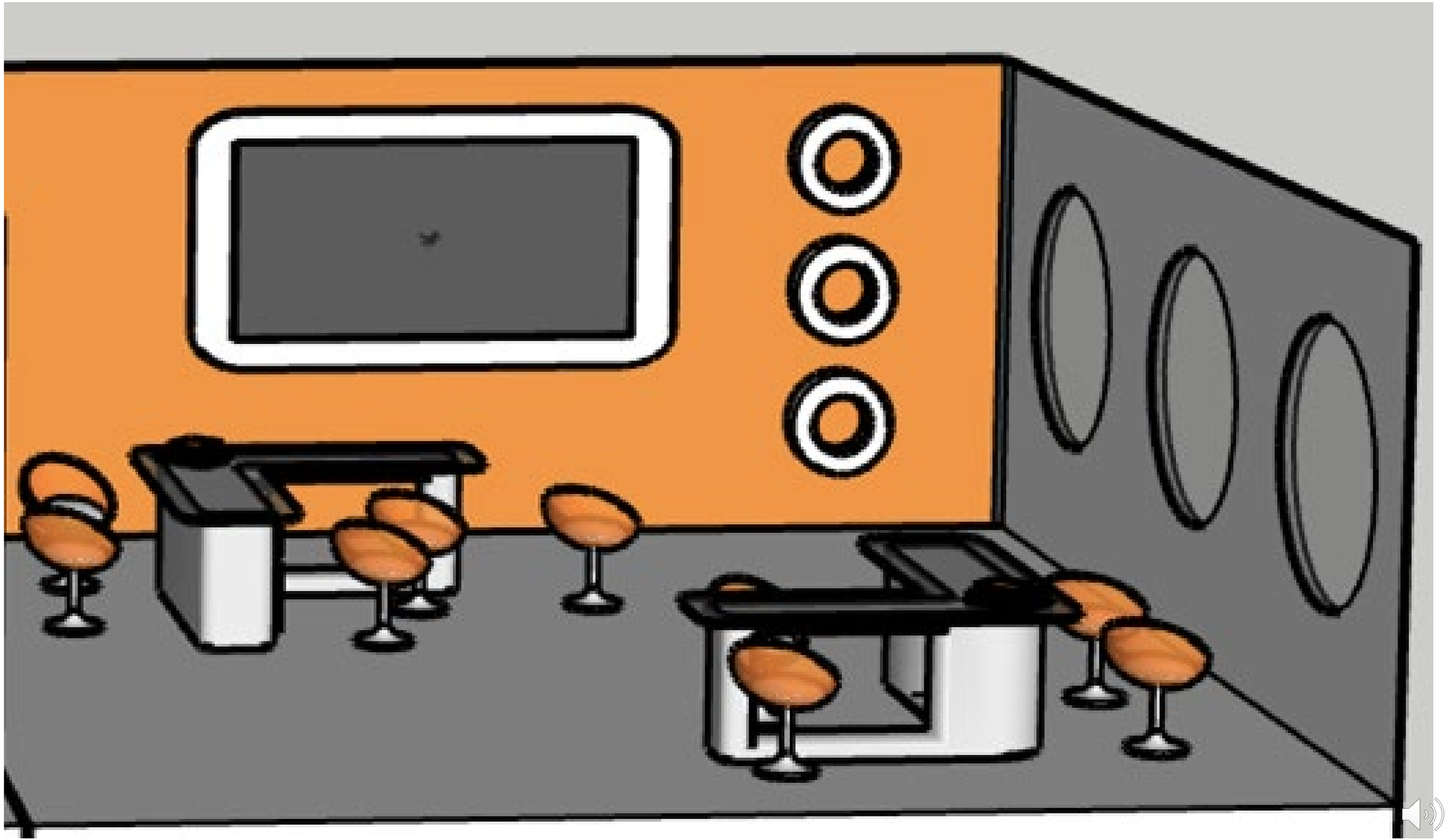
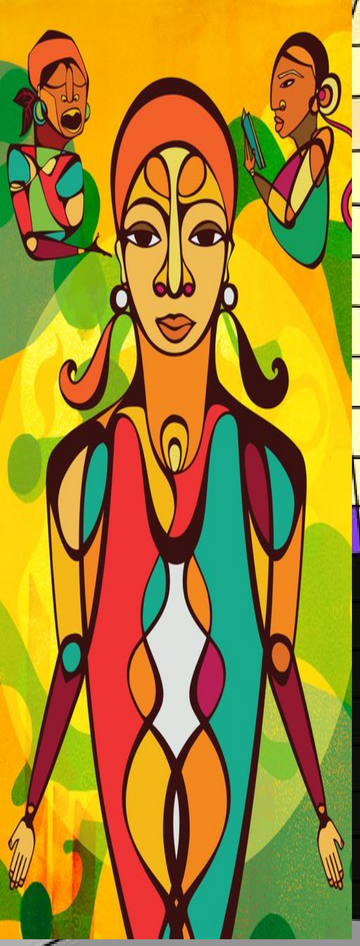
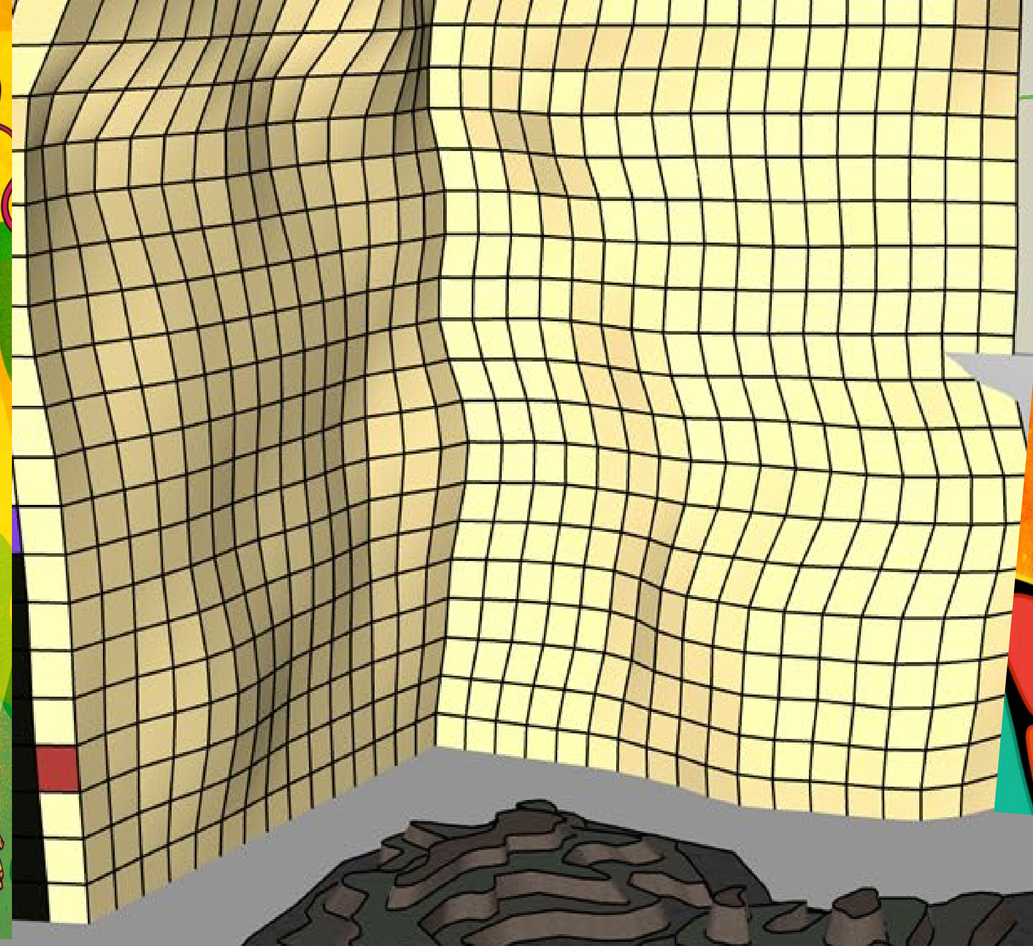
BOLD COLORS & PRINTS

Indigenous, Latin
and African prints



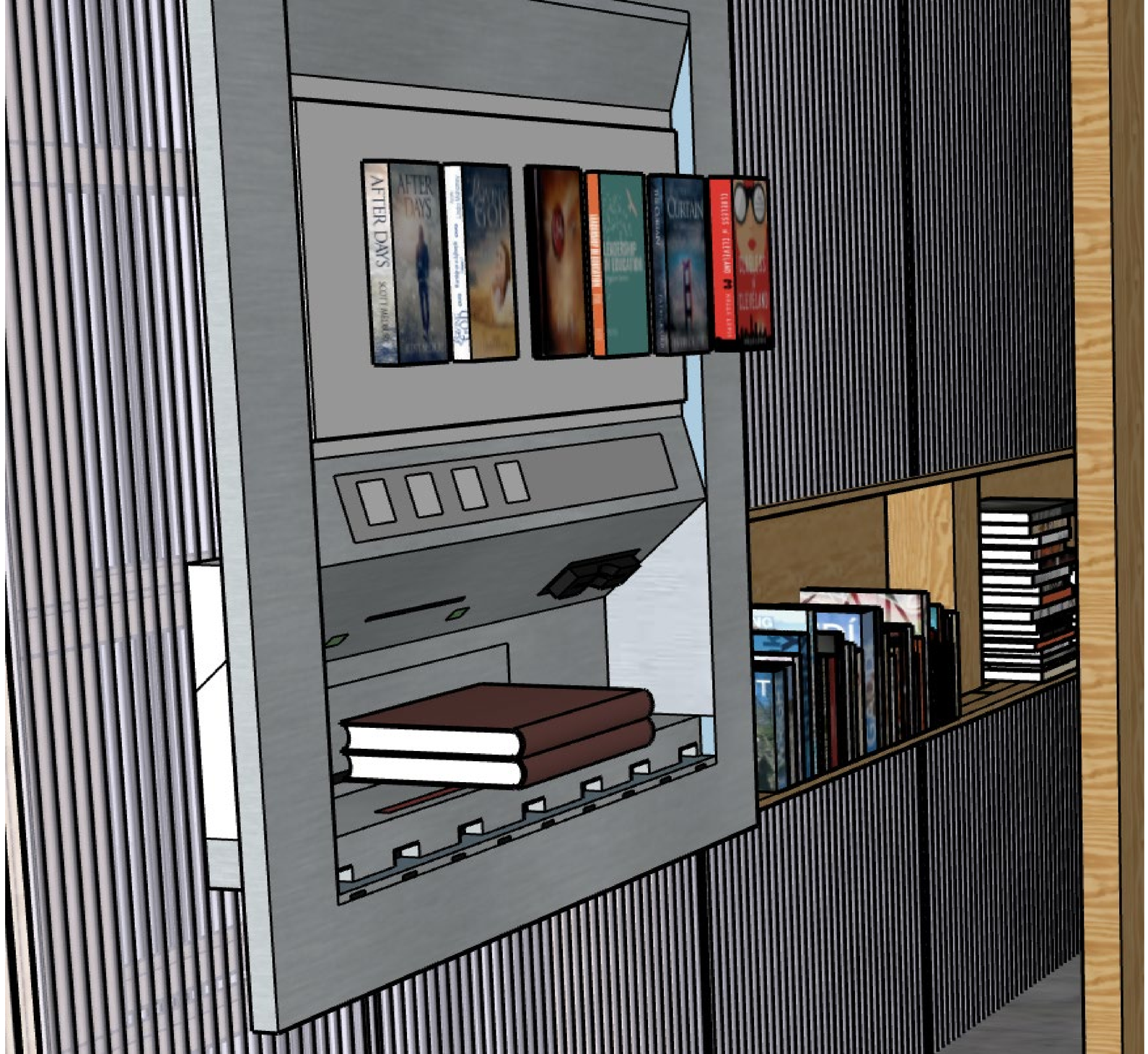




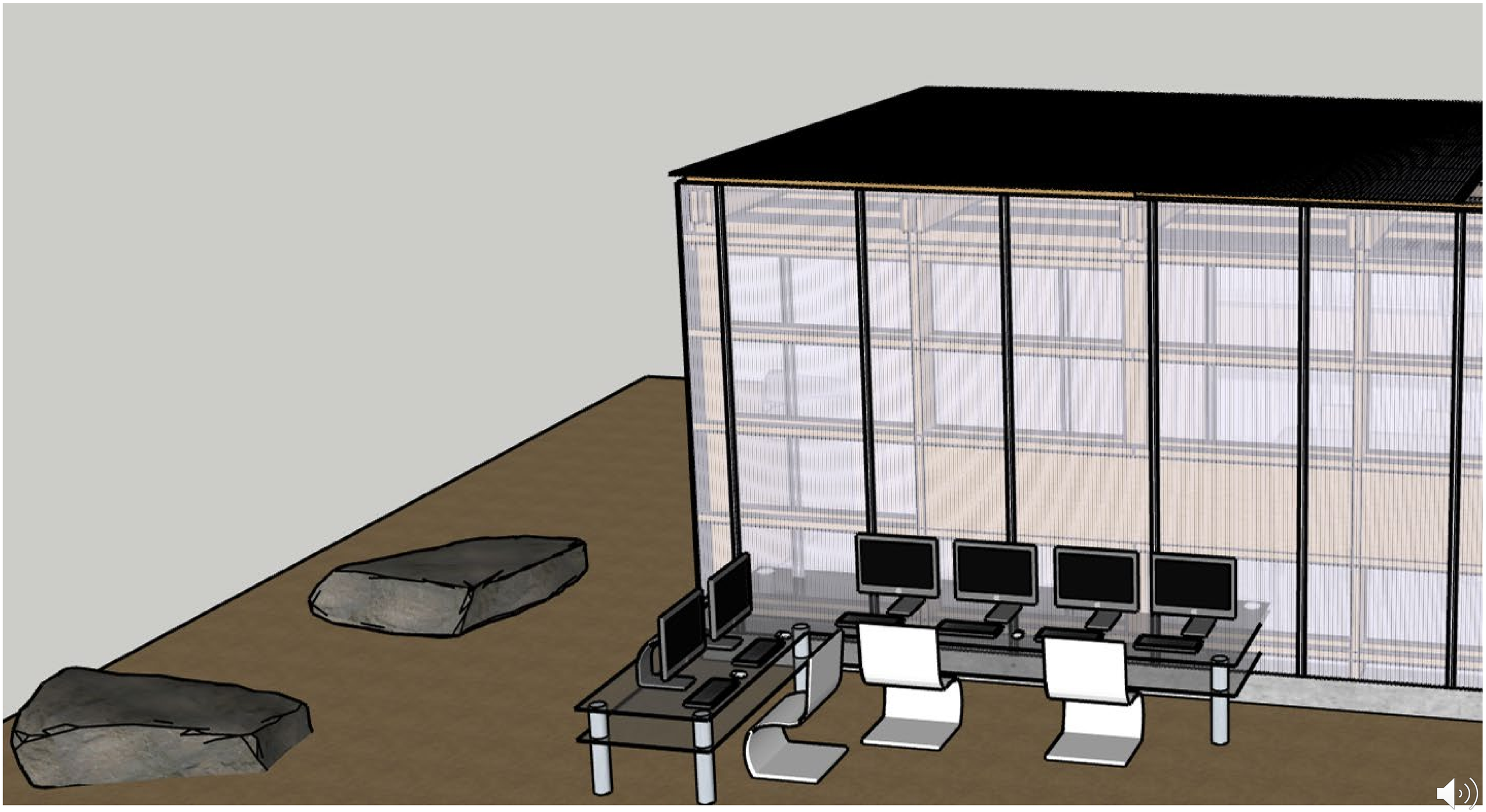


Library

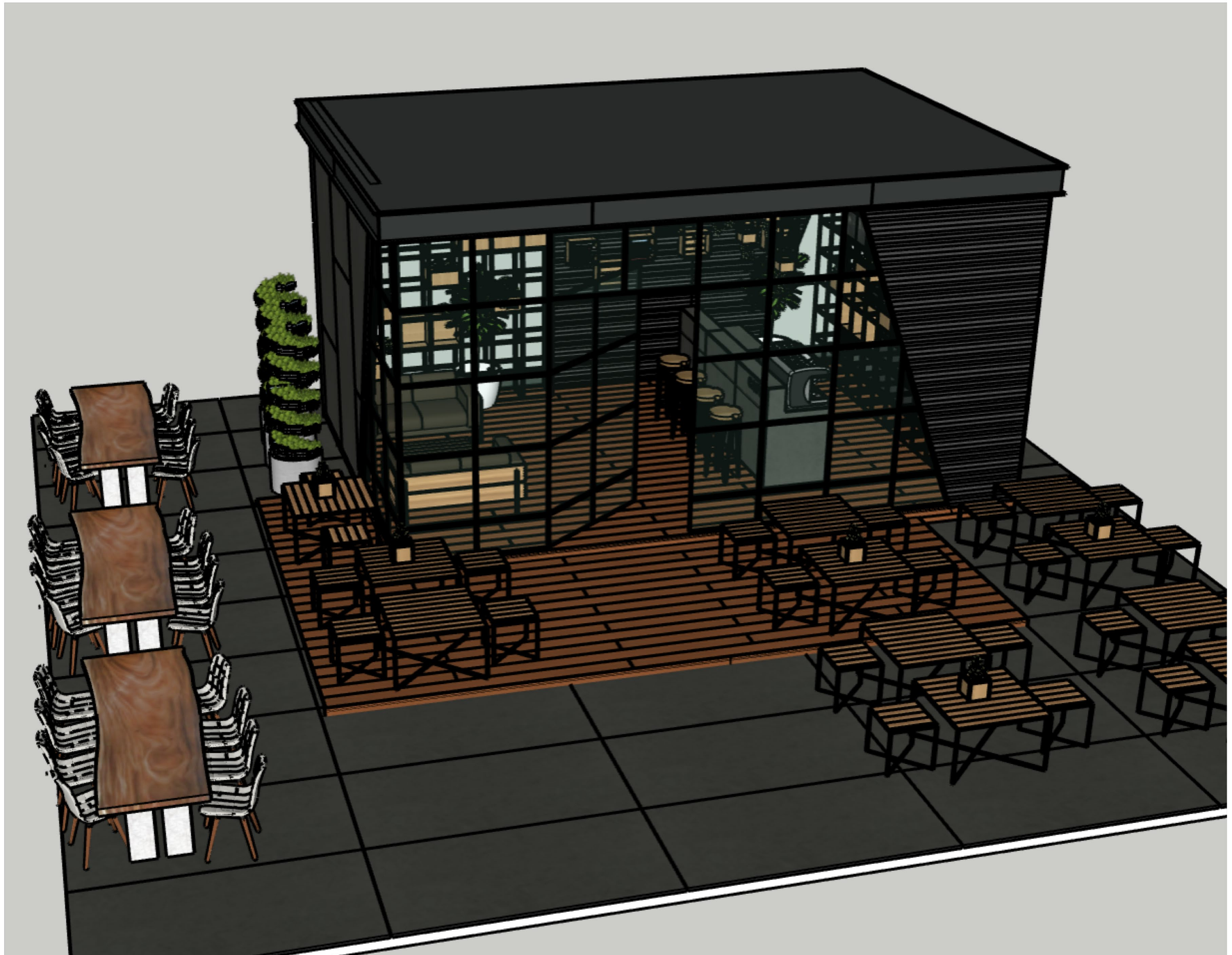

WRIGHT

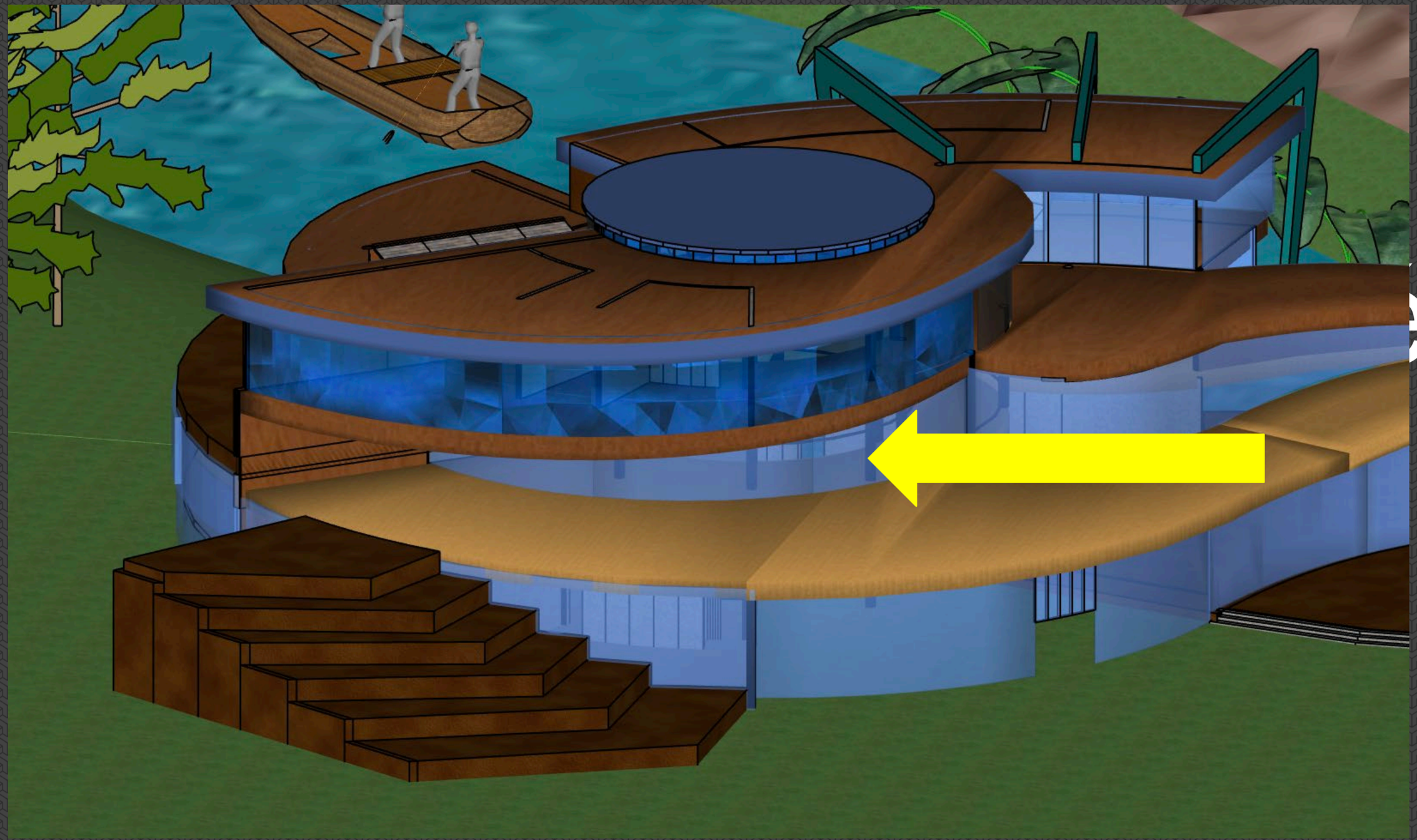


3D Virtual Book B



Global Summit Café






MENU
MENU

- We will grow most of the food our students eat in the cafe.
- Produce - plantains, limes, corn, beans, lentils, greens & peppers
- Herbs - Cilantro, garlic, cumin, ginger, thyme, cinnamon and peppermint

FOOD

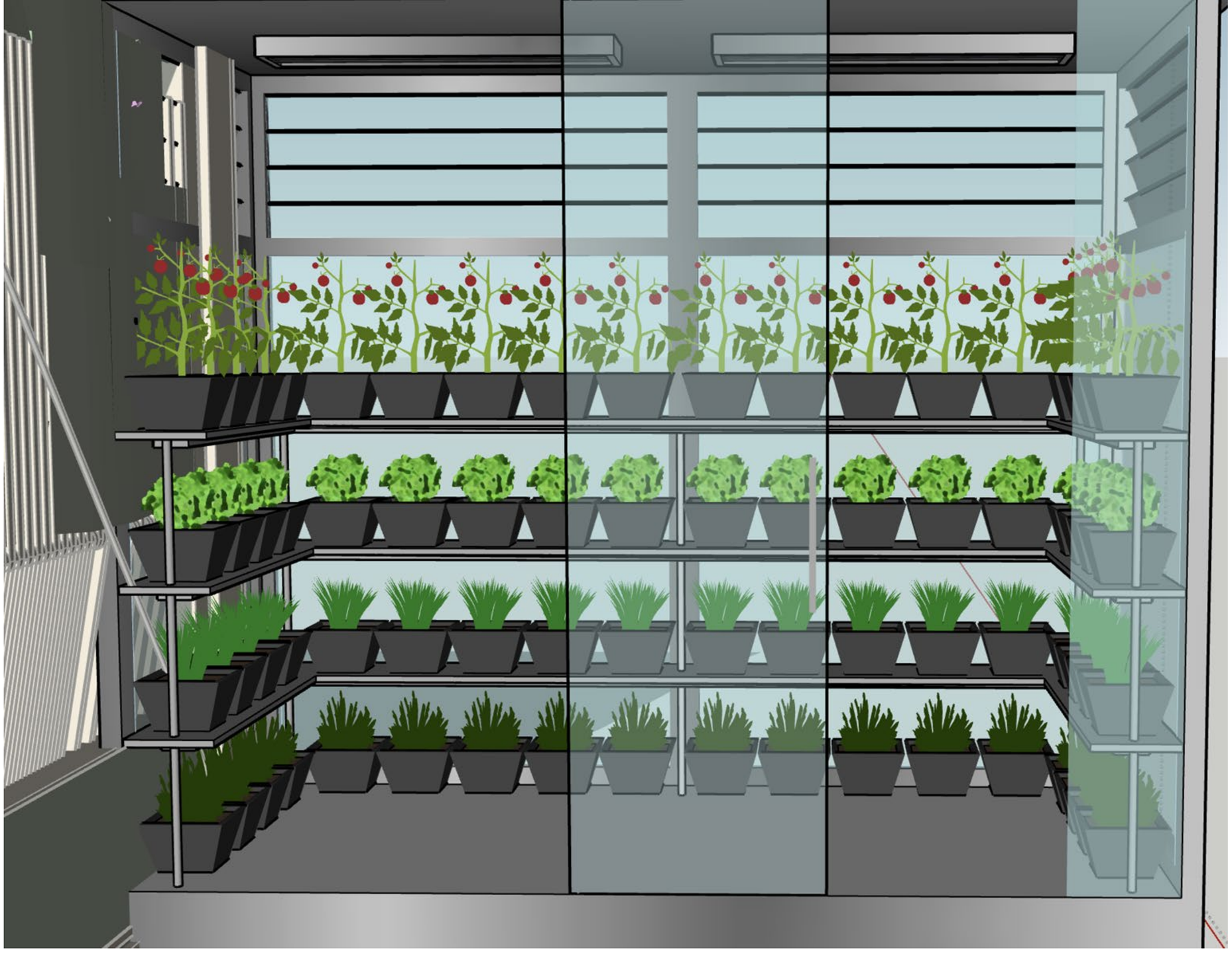
- Community is welcome in our Cafe
- Partnerships with local food trucks &restaurants
- Selling our produce &bee products at Durham Farmers Market

+

AGRICULTURE

URBAN FARMING

- Hydroponics
- Plants grow faster
- Equal Nutritional Value
- Provides the plants with its exact needs
- Saves water
- Can grow foods not typically grown in our region



FOOD CHAMBERS

VERTICAL FARMING

- Hydroponics
- Plants grow faster
- Grown vegetables will be just as nutritious if grown normally
- Provides the plants with its exact needs
- Saves water
- Can grow foods not typically grown in our region

BEE LAB

Students will study:

- Bee pests
- Different stages of brood (babies)
- Products of the hive
- Create Innovative ways to make and use bee products



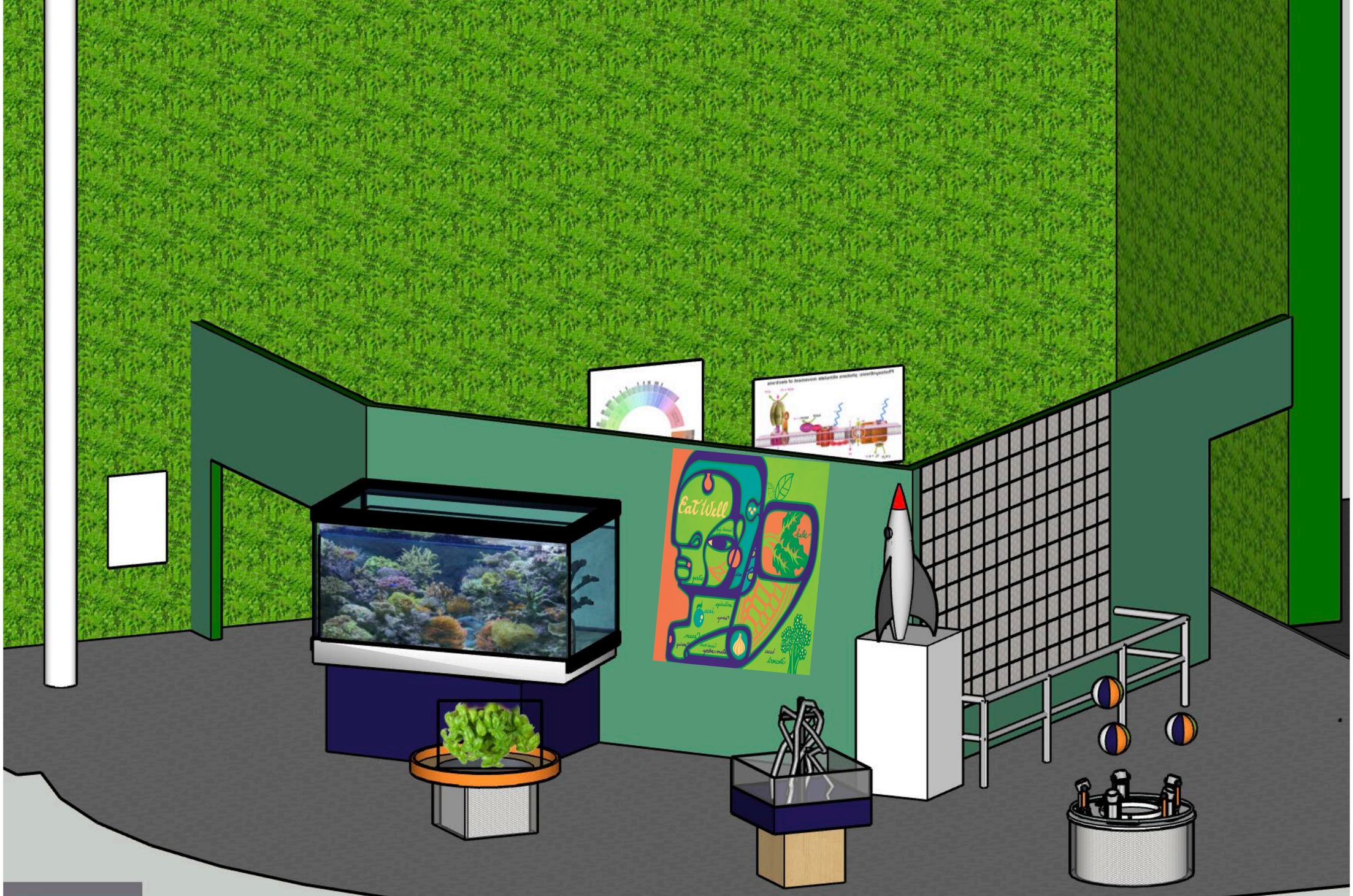
- We have 4 bee hives
- Produce honey
- Collect pollen
- Produce propolis (an ingredient produced by bees to solidify their hives, also has medicinal qualities)
- Produce wax

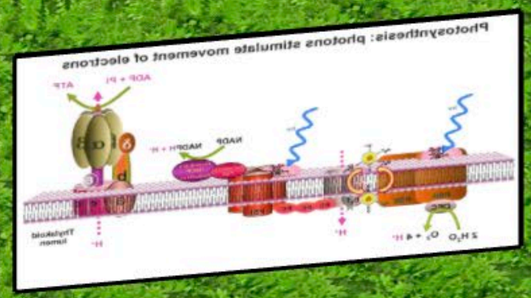
AGRICULTURE ENGINEERING LAB

Students will Study:

- Innovative ways to grow organic food
- Botany
- Ecosystems
- Farming techniques
- Ways to help the community

A Space to create innovative technology
A place to explore & work collaboratively


Eat Well


Photosynthesis: photons stimulate movement of electrons

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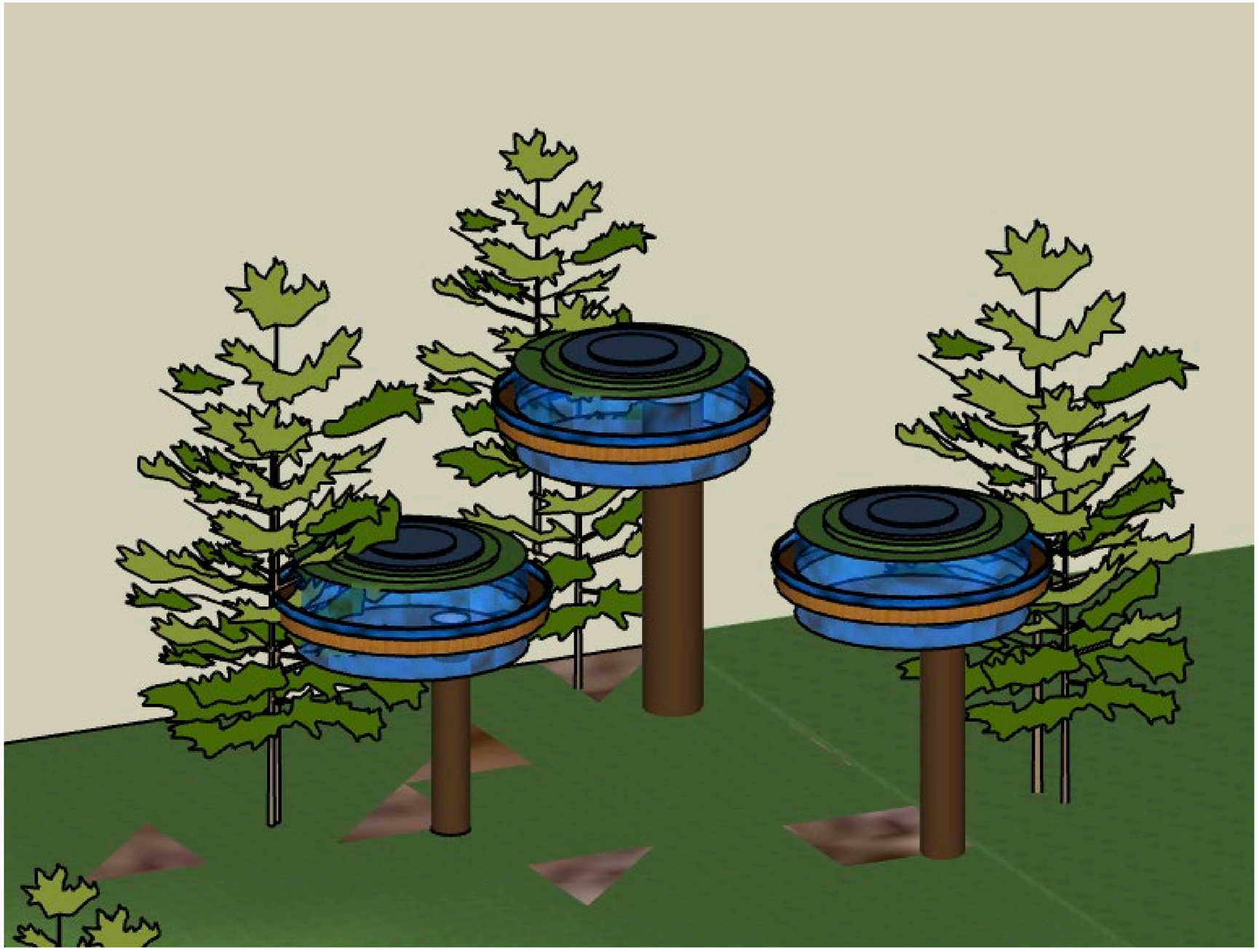
TREE PODS



- Solar Panels
- Green Roof
- 360 Degree View
- Balcony
- Elevators
- African Architecture
- University Partnerships

UNIVERSITY PARTNERSHIPS

- Students are able to use University resources
- Cultural Centers
- Library
- Funding
- Mentors

Makerspace

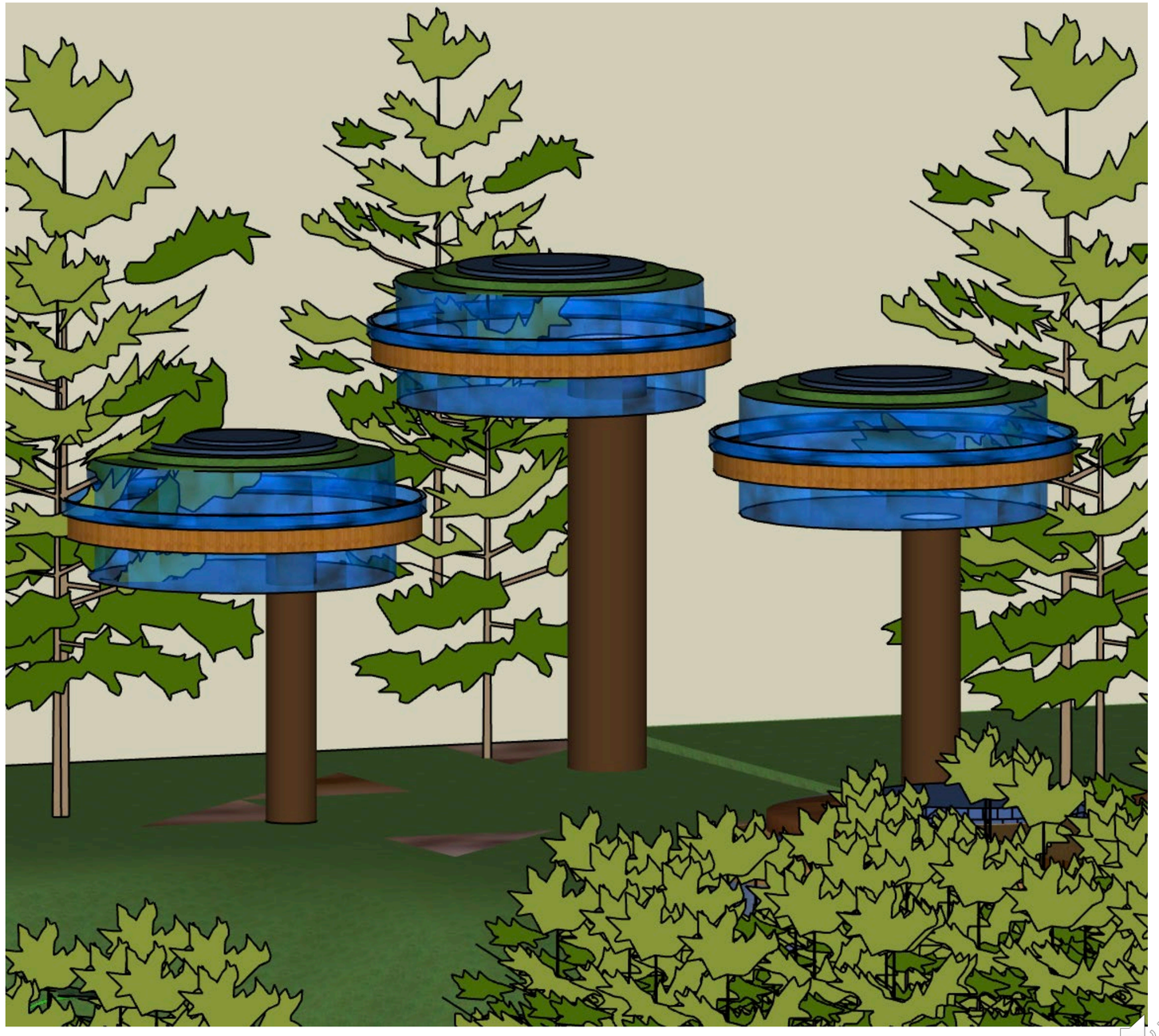
Place for creative design and innovations

Independent Learning Center

A multipurpose workspace for students taking classes beyond the normal curriculum

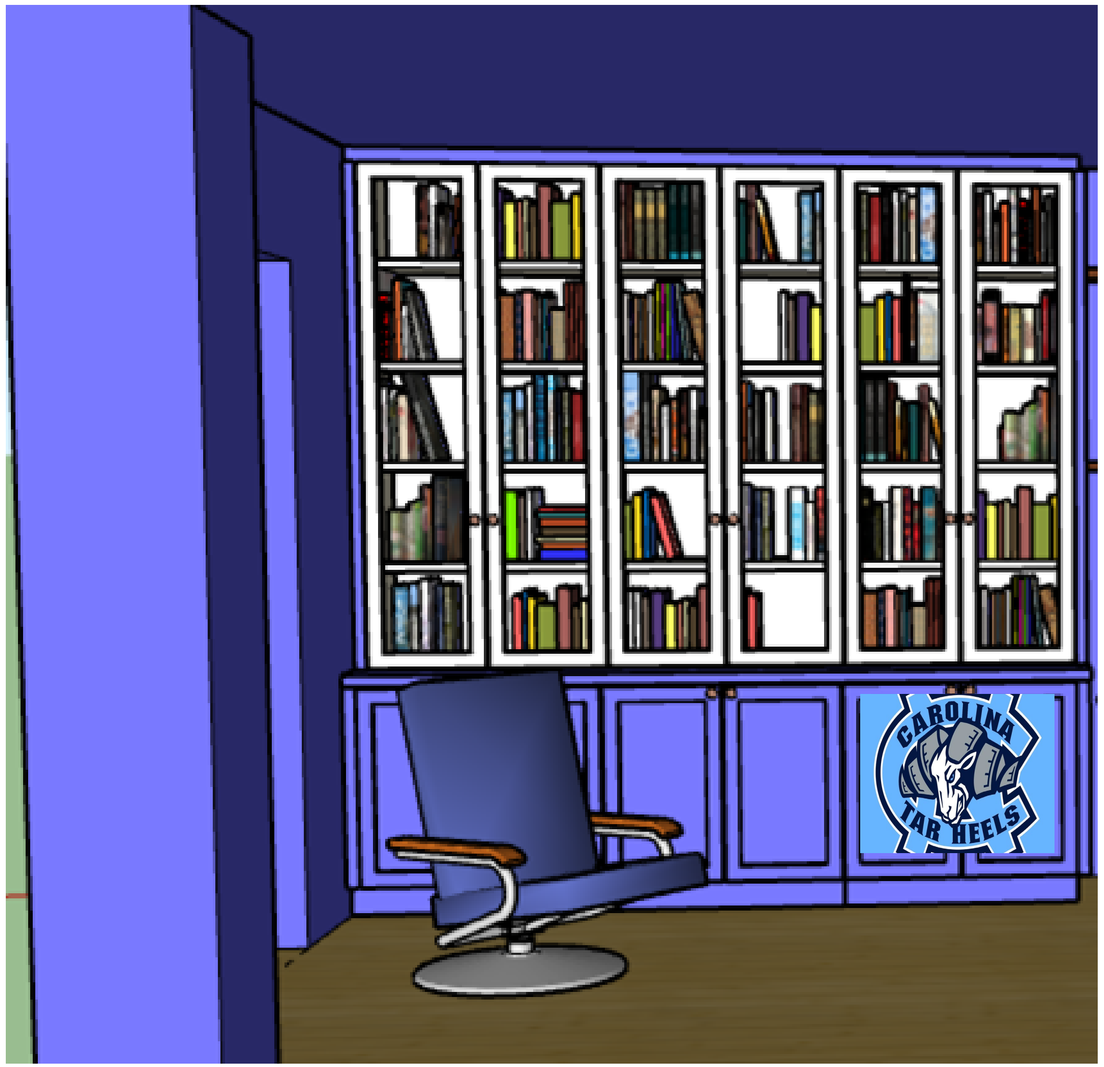
Meditation Lounge

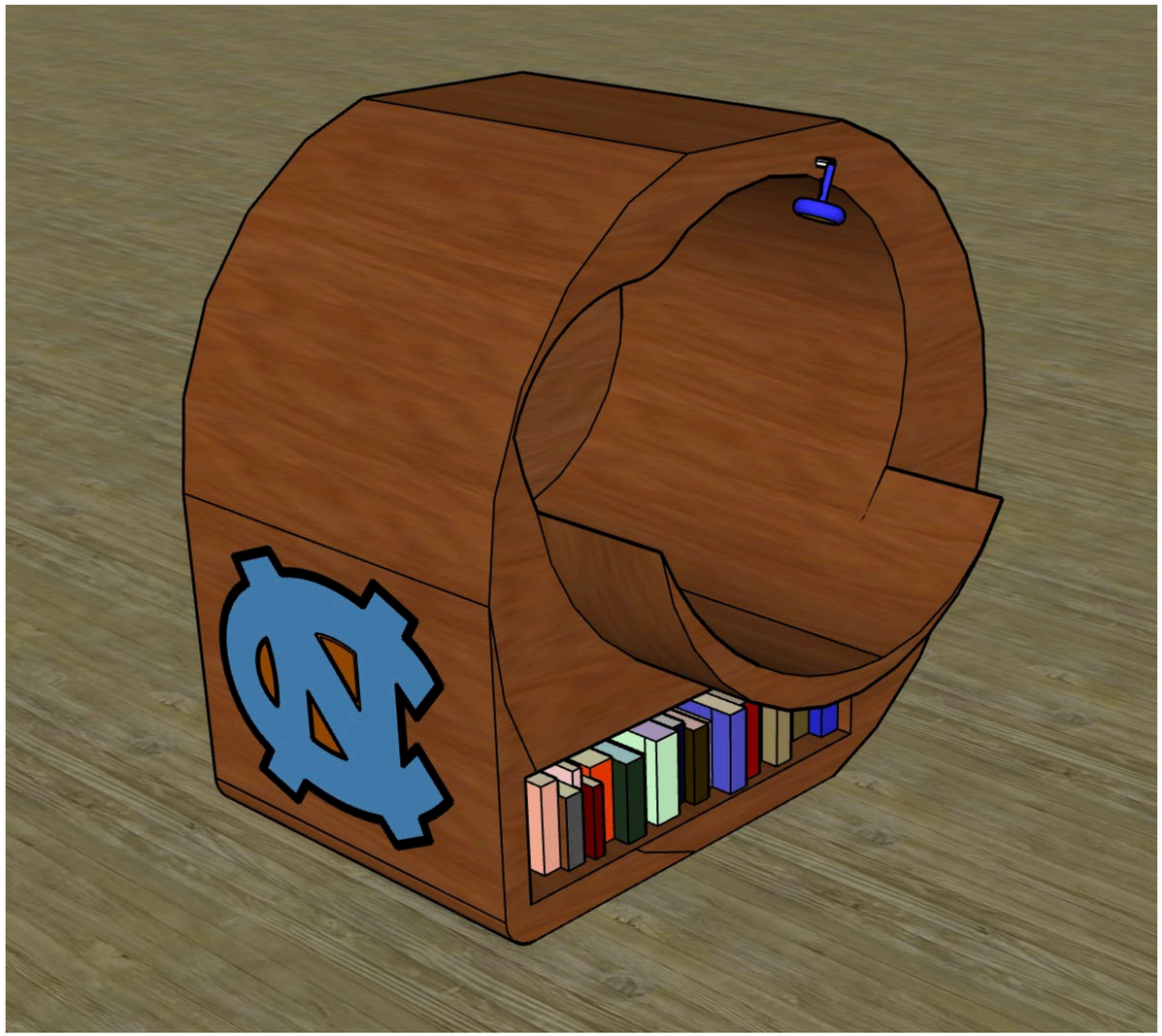
Comfortable, quiet area for meditation, yoga, self reflection, and relaxation



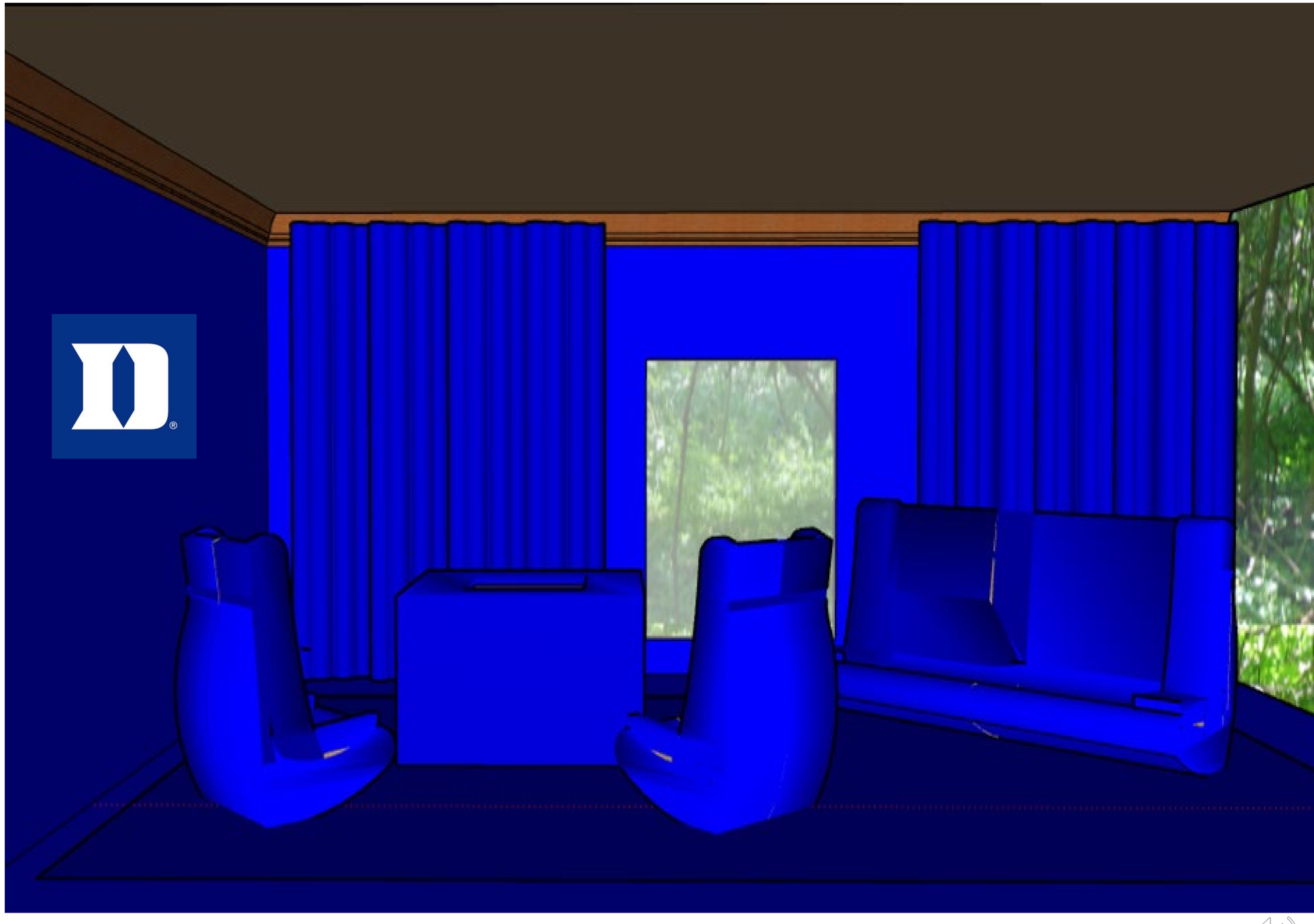
NC State Makerspace Treehouse

UNC Independent Learning Center





Duke Meditation Lounge



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SUSTAINABILITY

SOLAR PANE

- Has the least negative impact on the environment
- Does not produce greenhouse gasses
- Does not pollute the water
- Reduce energy bill
- As long as there is sunshine you will have electricity
- Circular Solar Panel Designs

HYDRO POW

- The river is used to power our school
- It is fueled by water so it is totally clean
- Energy generated through Hydro Power is dependent on the water cycle and not fossil fuel which is affordable and more reliable
- Renewable
- This will not produce any greenhouse gasses

RAIN WATER HARVESTING

- Affordable
- Renewable
- Efficient
- Useful for watering plants & Flushing toilets
- Great for the plants
- Reduced water Bill

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TECHNOLOGY

OF THE FUTURE

INNOVATIVE TECHNOLOGY

- Holograms
- Augmented Reality
- Virtual Reality
- Facial Recognition
- Spin Class - Energy Source
- School Wide Virtual Assistance

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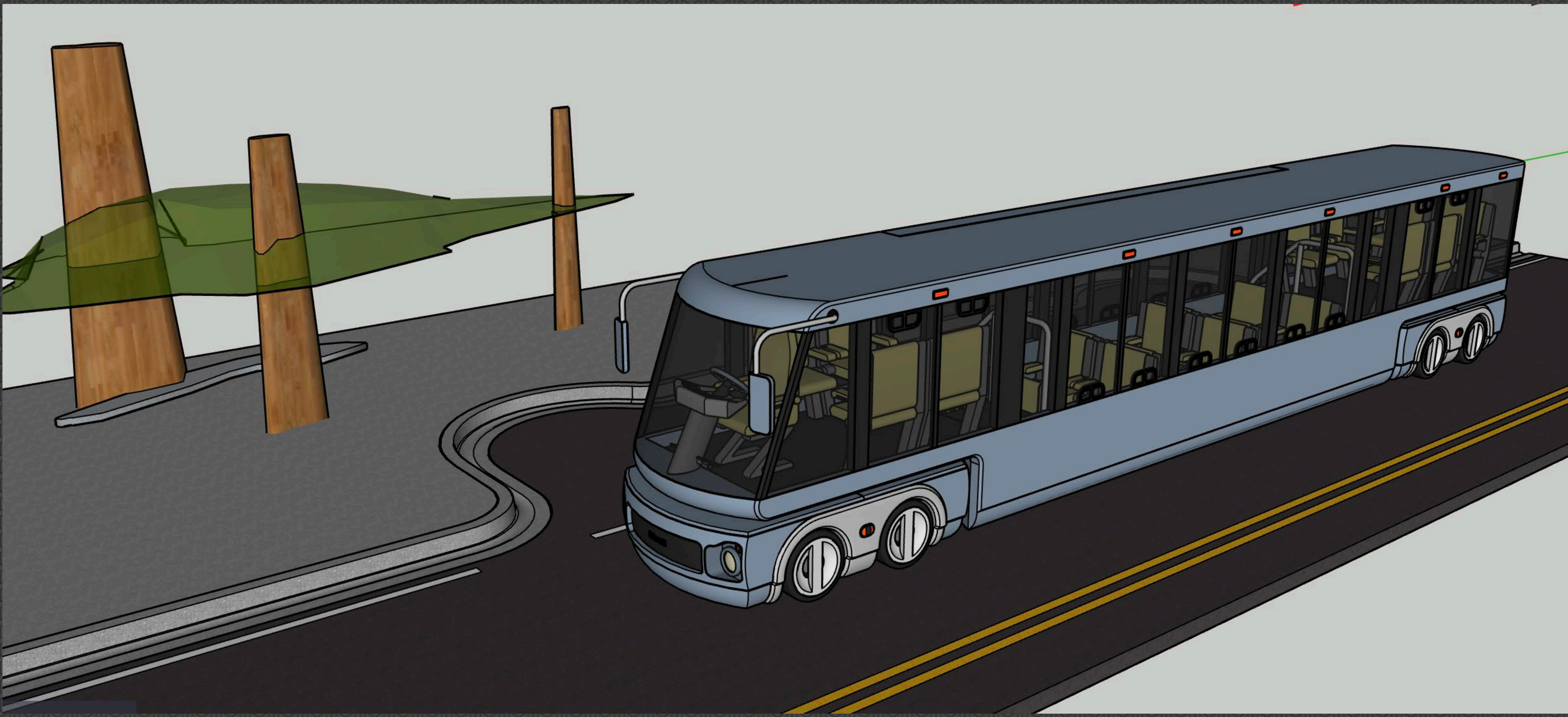
TRANSPERTATI



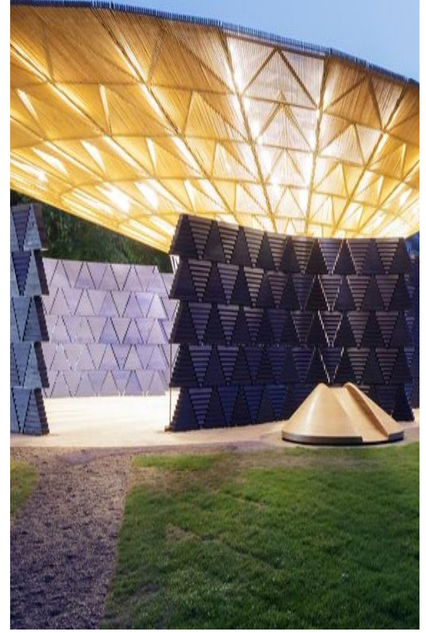
INSPIRATION

CULTURAL INSPIRATIO

- Top View of MALA
- Inspired by African Prints
- Geometric Shapes
- Concentric Circles & Curves

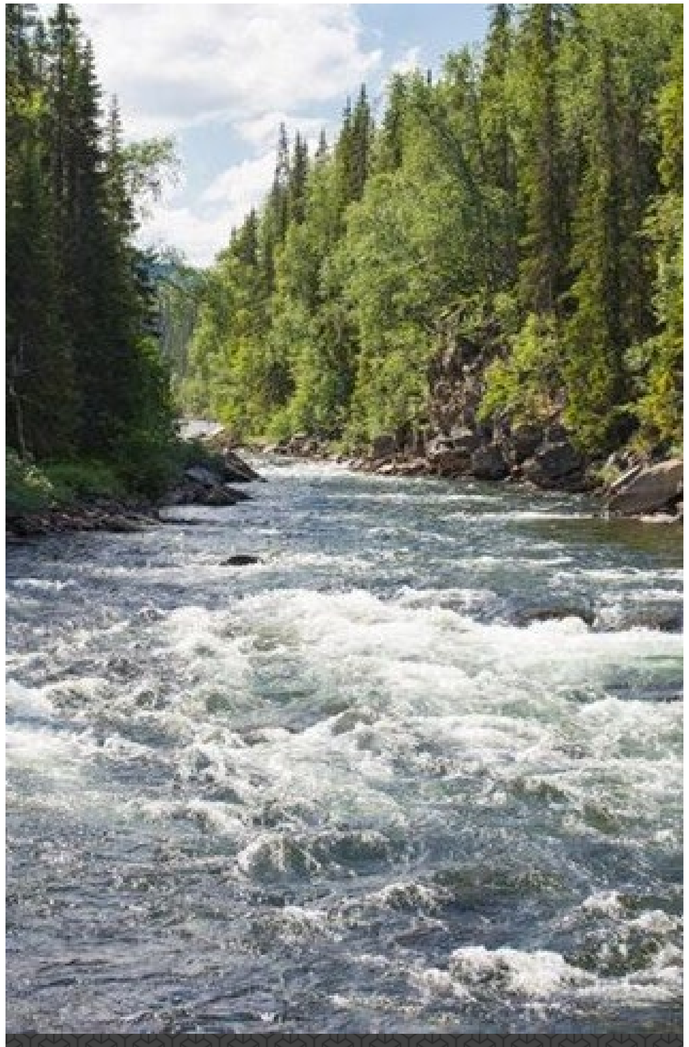
CULTURAL INSPIRATION

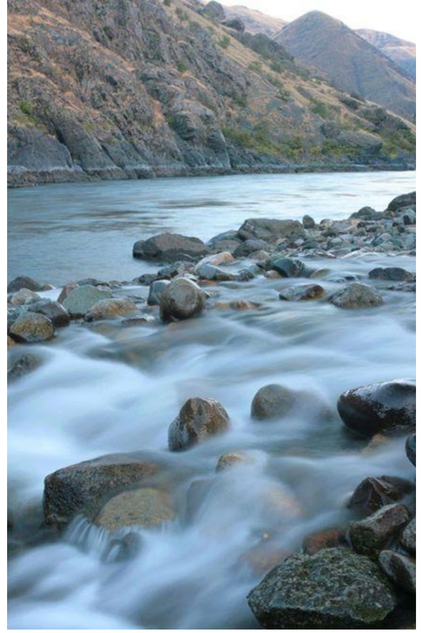
- African & Latin American Architecture
- Natural Materials
- Bold Colors
- Tall Buildings
- Circles & Curves

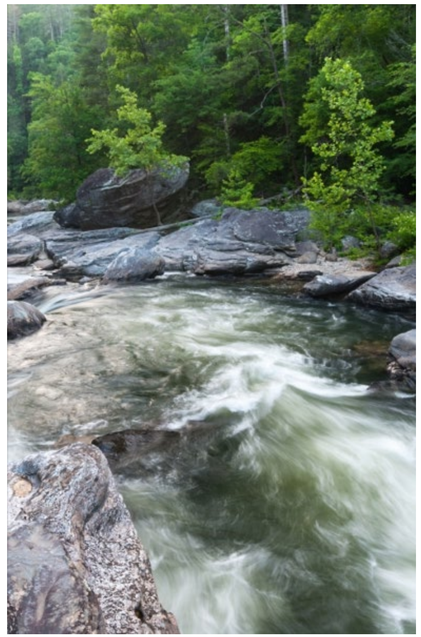


THE RIVER

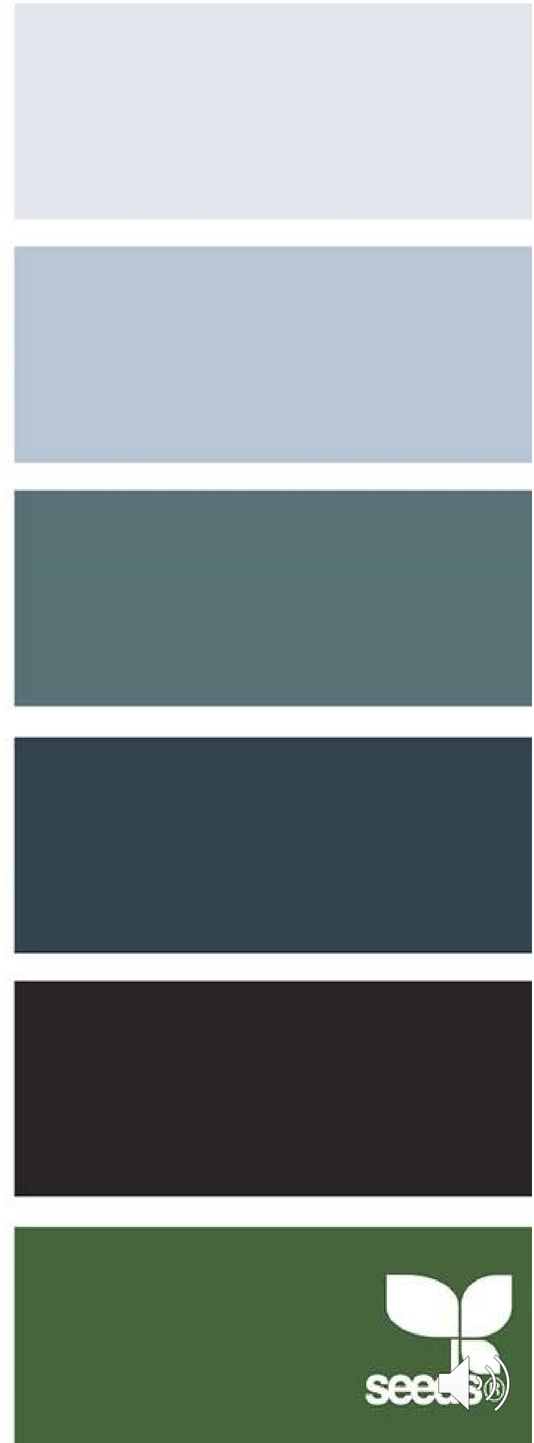
- Restorative, Calming and Balancing
- The presence of water is vital to our bodies, our lives, and our entire well-being
- Humans love to see, hear, smell, and feel water
- Creates a relaxing environment where people enjoy being
- Natural source of power for our school







COLOR THEORY



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HOW WILL WE BUILD O

SCHOOL?

3D PRINTING

- 3D Printing is the future of Architecture & Design
- Strength & Durability
- Speed – 3-6 Months v. 1 Day
- Costs Less
- Minimal consumption of materials & labor
- Endless Possibilities – Experimenting with different shapes
- Uses more sustainable materials than construction

3D PRINTING

- We would use wood & glass to 3D Print our school
- Sustainable
- Will seamlessly integrate into the natural reserve by the river
- Reclaimed Wood, Plant Based Materials & Polymers
- Can be stained and sanded

OUR PROCESS

5 Stages

Step 01

Interviews
Brainstorming
Research
Fieldtrips
Sketching

1ST STAGE

Step 02

3D Modeling

2ND STAGE

Step 03

Revising Ideas with the other school.

3RD STAGE

Step 04

Building the Model

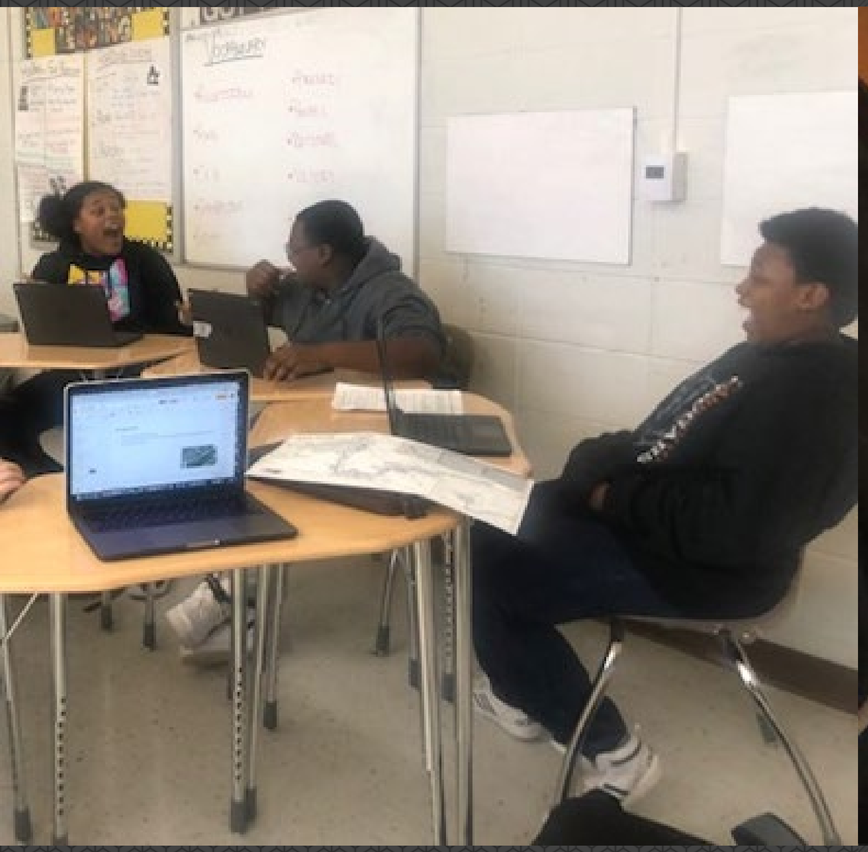
4TH STAGE

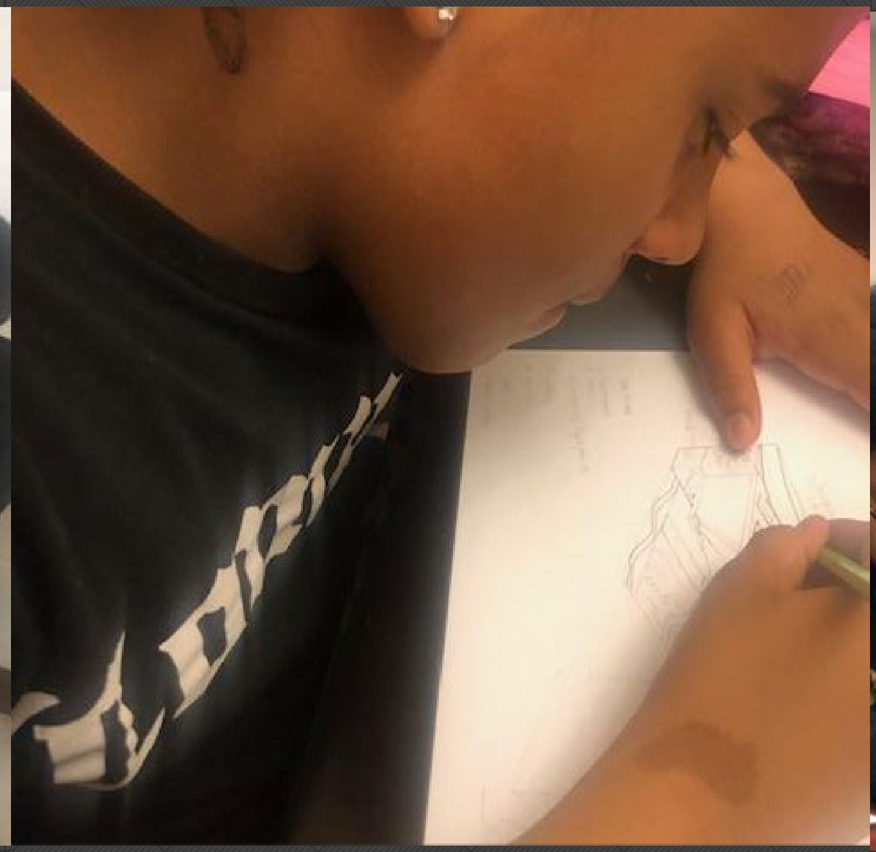
Step 05

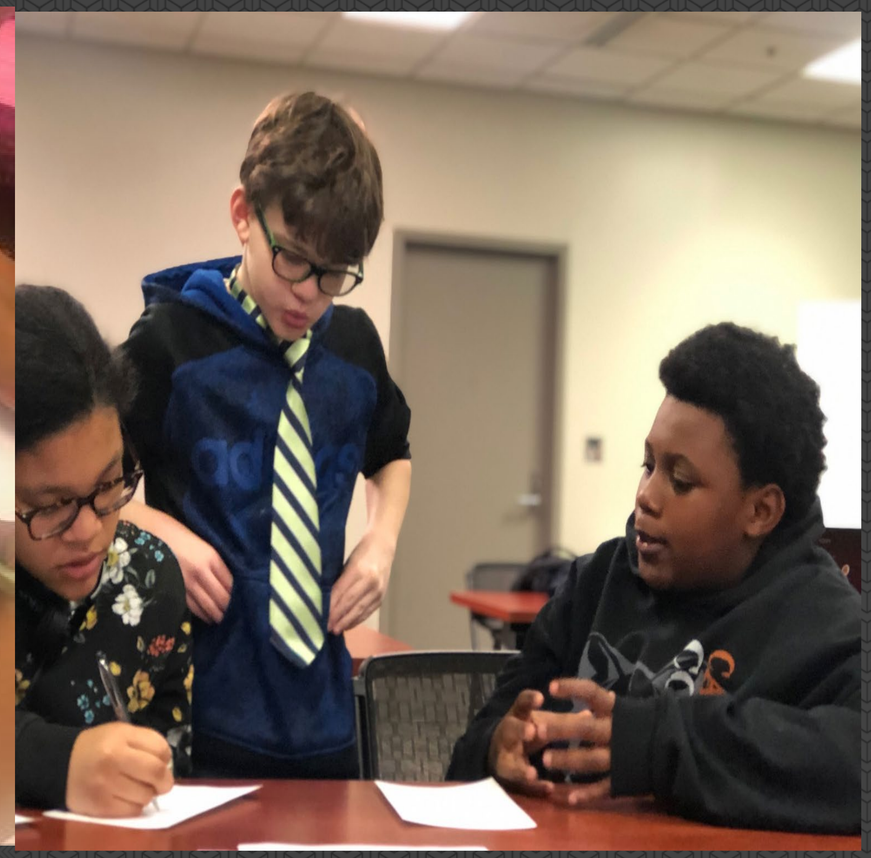
Presentation

FINAL STAGE

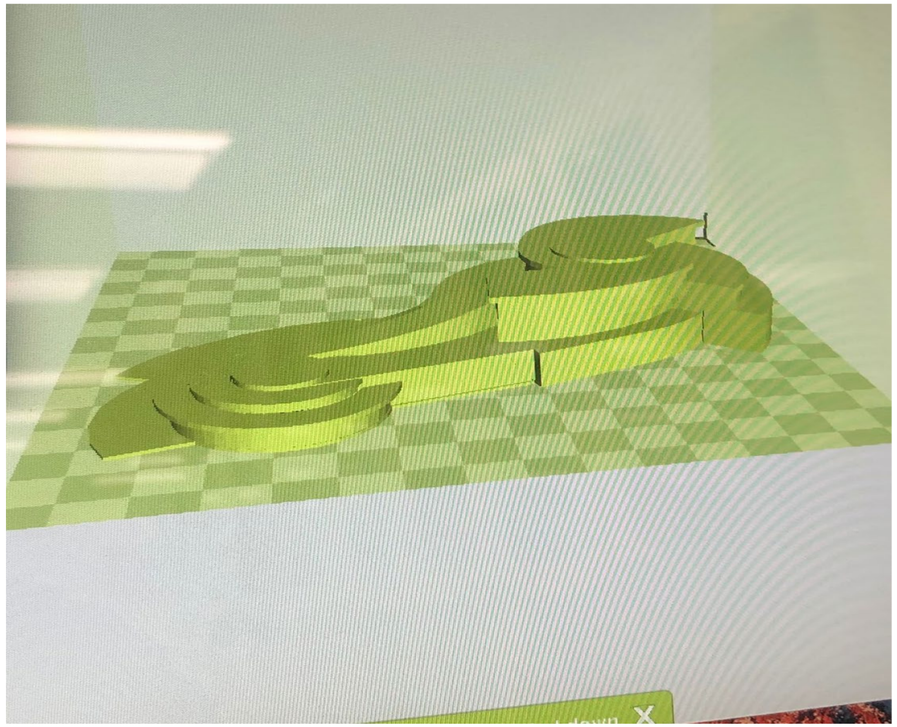
RESEARCH & PLANNING



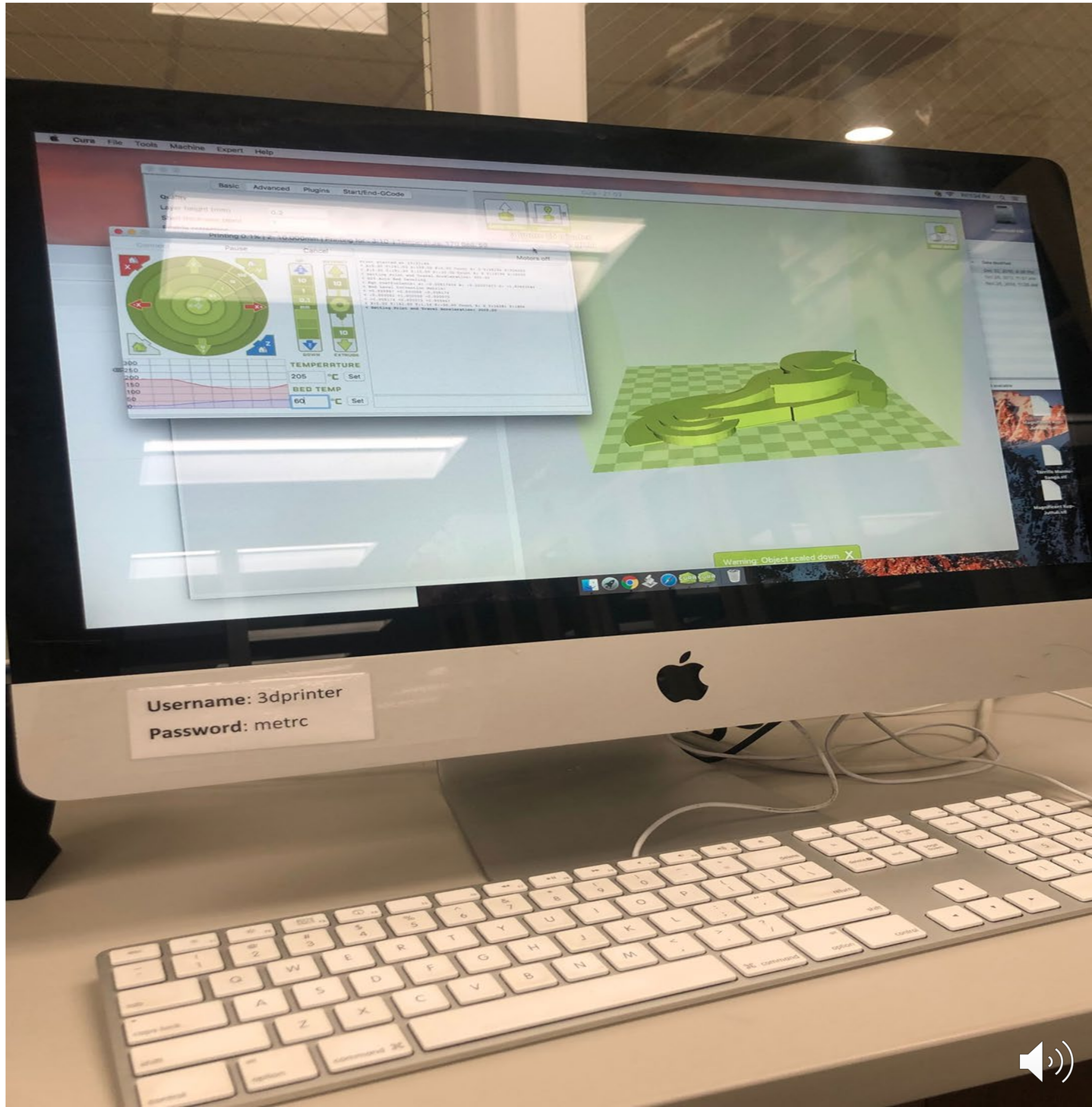









LULZBOT
MINI


Cura File Tools Machine Expert Help
Basic Advanced Plugins Start/End-GCode
Pause
Cancel
Motors off
TEMPERATURE
205 °C Set
BED TEMP
60 °C Set
Warning: Object scaled down
Username: 3dprinter
Password: metrc


ARCTIC OCEAN
GREENLAND SEA
BARENTS SEA
RUSSIAN FEDERATION
EAST SIBERIAN SEA
BERING SEA
INDIAN
OCEAN
AUSTRALI
FORTNITE


WAKANDA
FOREVER
STRONGER
TOGETHER


ARCTIC OCEAN
Greenland
(Den.)
GREENLAND SEA
Baffin Bay
Hudson Bay
CANADA
RUSSIAN FEDERATION
BARENTS SEA
SAN FRANCISCO
LOS ANGELES
CHICAGO
TORONTO
DETROIT
NEW YORK
PHILADELPHIA
WASHINGTON
Gulf of Mexico
MEXICO CITY
CARIBBE
SPAIN
MEDITE
ATHENS
MAURITANIA
PACIFIC
FORTNITE
CARRINGTON COUGARS