



Clover Turtle Breakdown

Team: DYBB

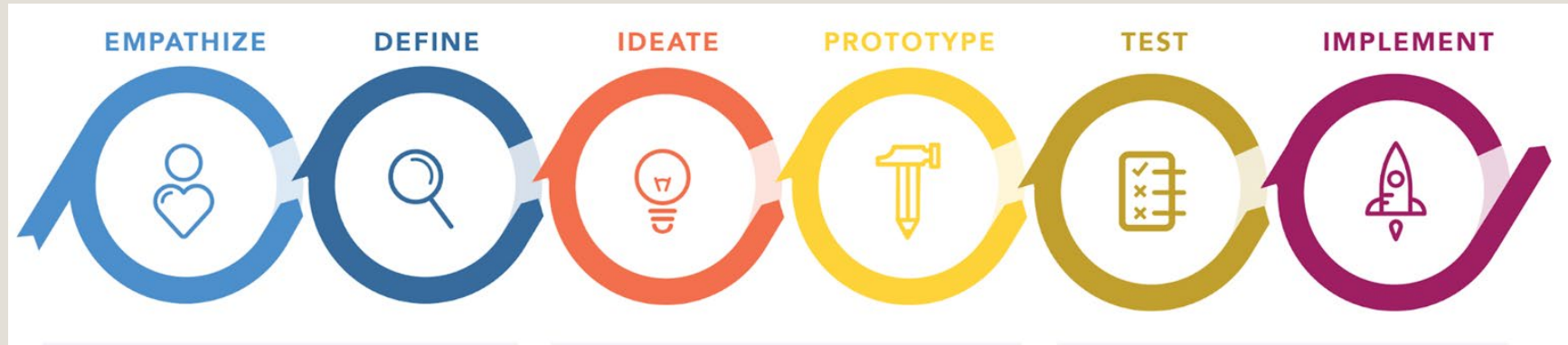
SCHOOLSNEXT



Brainstorm + Designing

Concept: Portable classroom with unique form

Brainstorm Process



Efficient Research : Research 3 different refugee camps that are in crisis/ conflict and also look at different style of portable building and classroom to understand the fundamental of it.

Visualizing + model + diagram drawing : We made 4 different models for our building with the combination of using Fusion 360 to break it down further.

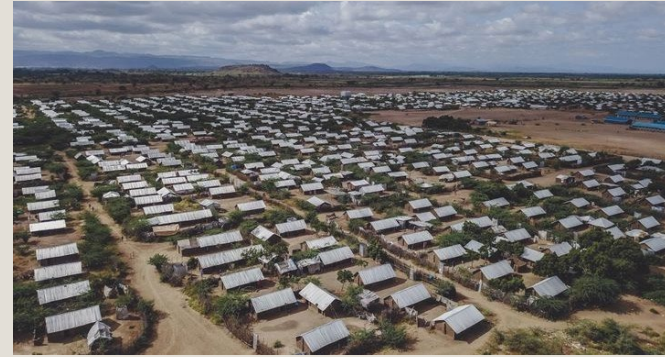
Presentation + feedback : Revision, Final Composition , User Feedback

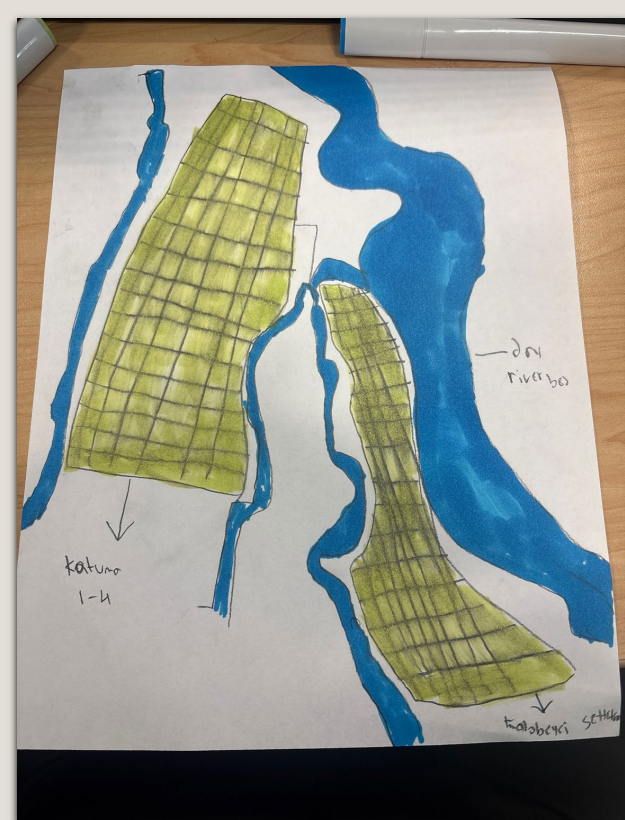
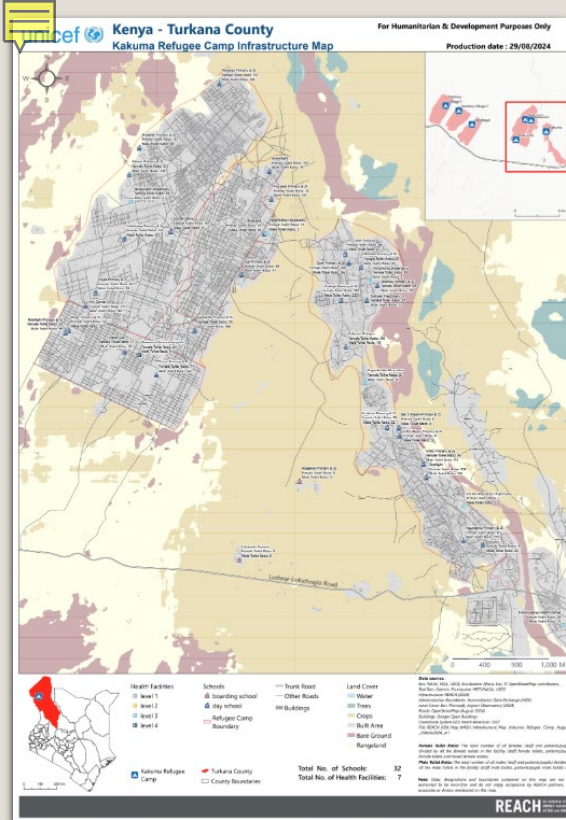
Site overview (Kakuma Camp)



Basic Info:

- *The climate is severely hot and there are dust storms.*
- *The nearest city is roughly a 8 hour drive, which makes the camp very remote from places in the country.*
- *Infrastructure consists of wood and iron sheets that trap heat. While some areas have improved, many residents still face problems with access to water, sanitation, and electricity.*
- *Incidents of armed robbery and theft have been reported within and around the camp.*





*Dark Blue refers to day schools and Light Blue refers to health facilities within the camp

SITE ANALYSIS



Why we chose this site



We choose this site to accommodate and fulfill the basic needs for the people here. From poor treatment to harsh conditions we aim to restore faith in this area. We thought of children in rough conditions and since our project is about schools we want to give each child access to basic education with modern amenities even in such hostile conditions.

Ukhia Schools -
URBANA



Constructed entirely out of bamboo. Small gaps between bamboo offer natural filtered lighting, allowing the building to function entirely without power

EAA Foundation Tents - Zaha Hadid Architects



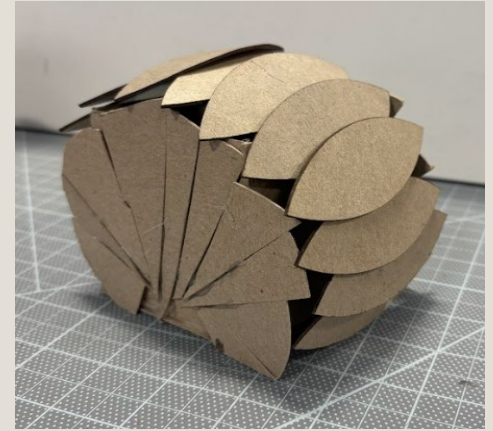
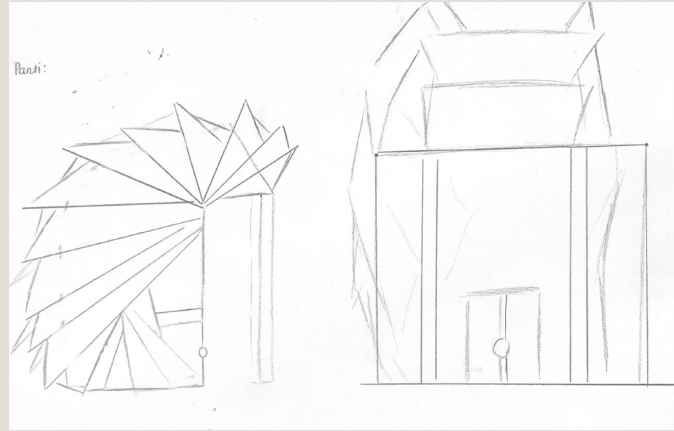
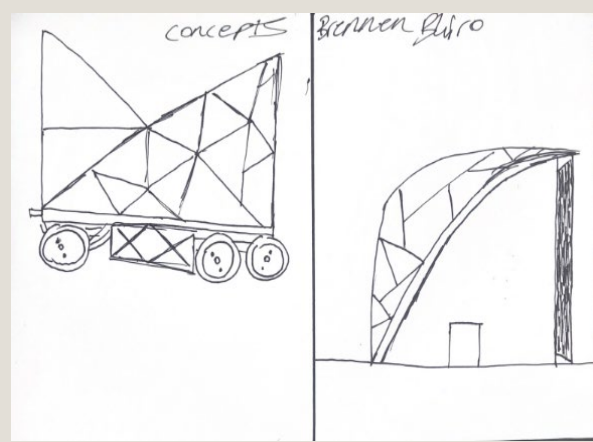
Made up of modular tent structures that can be easily moved and reassembled. Beams made of aluminum which is strong, light, and cheap. Fabric membrane made of PVC material which has multi-foil insulation that retains heat in the winter and reflects heat in summer

“The Dome” - Emergency Architecture & Human Rights

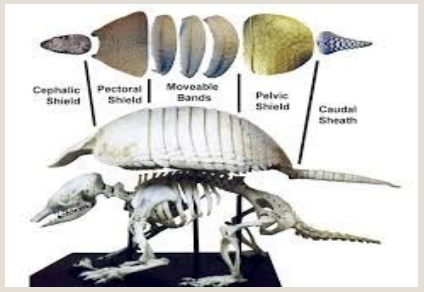
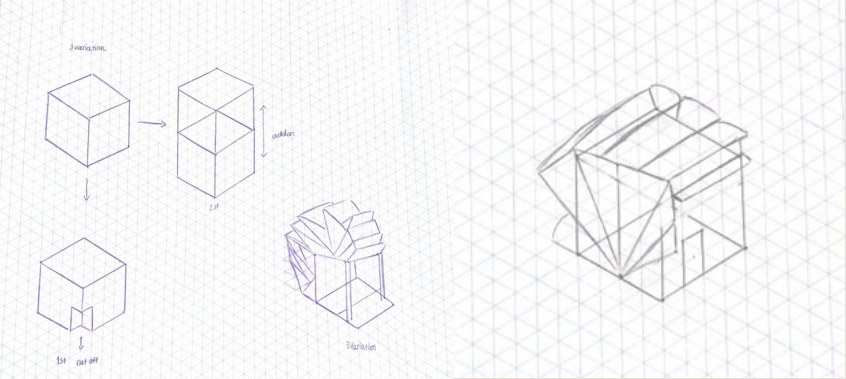
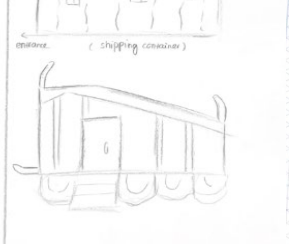
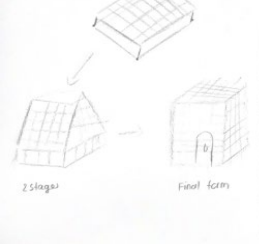
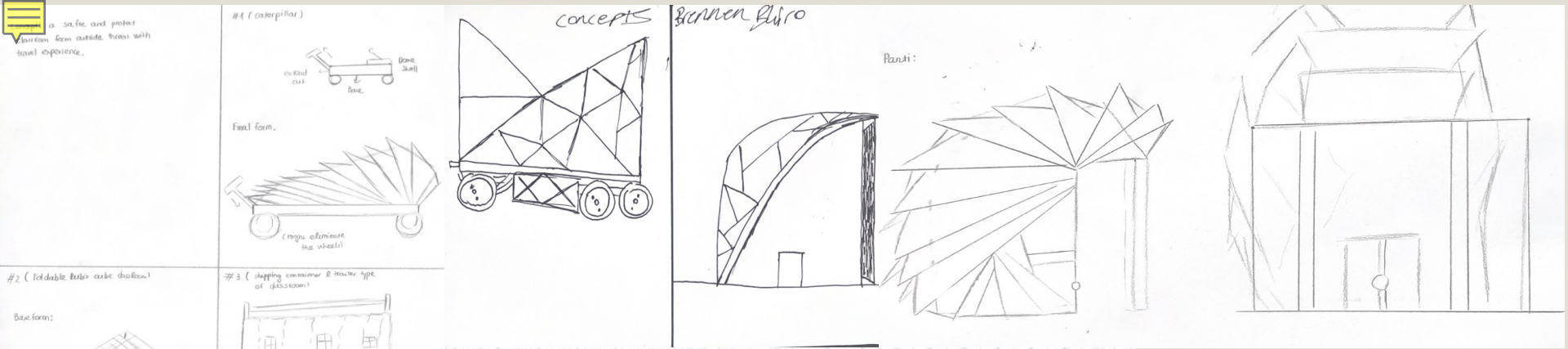


Uses cheap, local and sustainable materials to create a traditional Syrian beehive style building that stays cool during hot weather and warm during cold winters

PRECEDENT STUDIES



Evolution of our design
process



*Inspiration

Concept:
 "An emergency
 classroom for children
 living in refugee camps"

OLD CONCEPT & PARTI

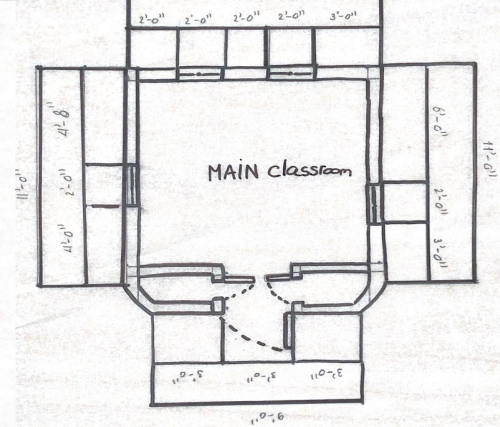
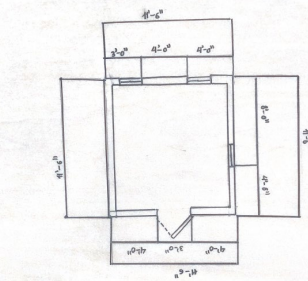
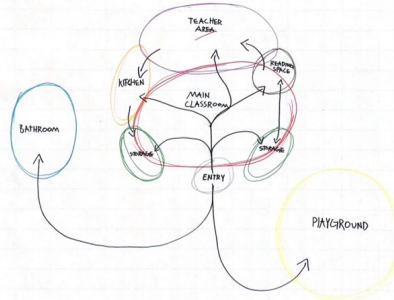
Block Diagrams

Team: DYBB

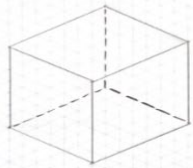


TEAM DYBB

BUBBLE DIAGRAM

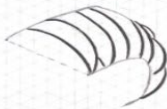


Fullbreakdown.

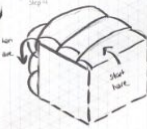
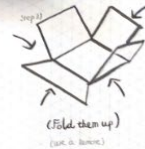
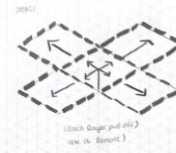
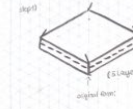
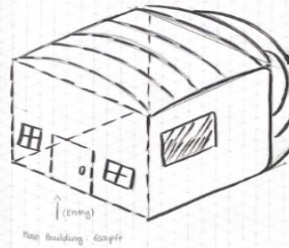


(Box) Storage
An idea for a room that where students can store things.

Combine →



(Roof shell)
Kids can imagine from the corrugated shell. Make the corner and protect them. Also use to combine it to the building where they could feel safe.



A RETURN TO ARCHITECTURE

Overall SQFT:
22x25 (550 sqft)

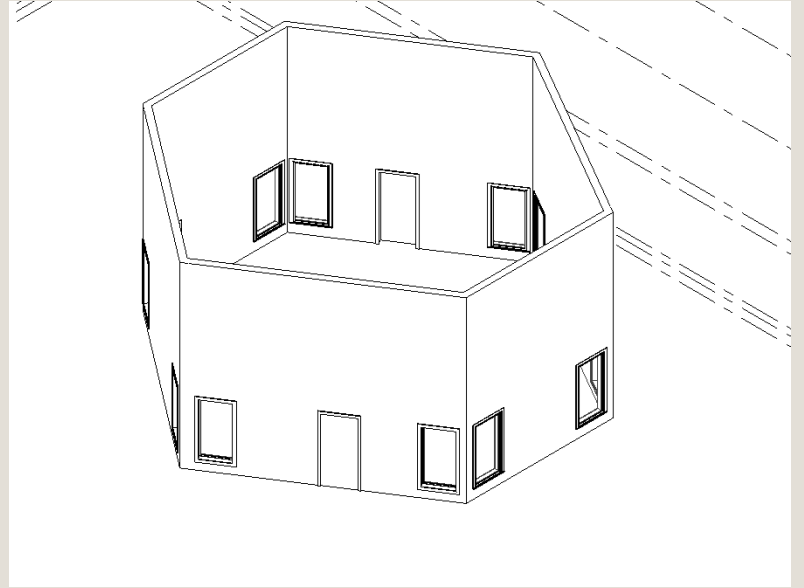
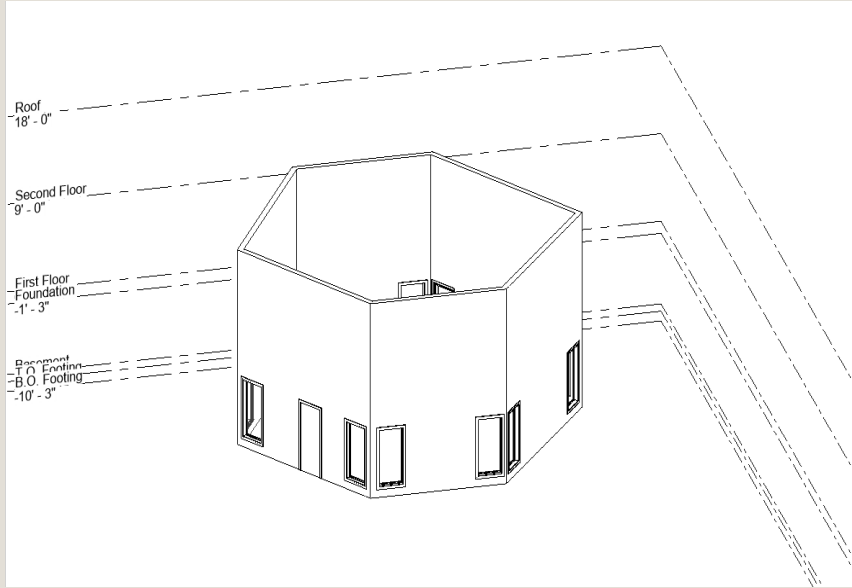
Old Block/Bubble, Floor Plans, Assembly Diagram



OLD MODELS

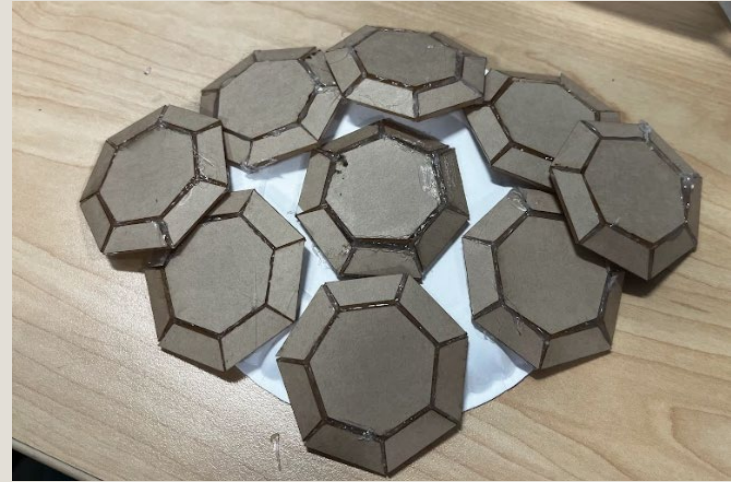
Reason for the switch:

We ultimately thought that the armadillo design was too labor intensive and decreased our creativity options. We moved to the next best thing which is a Turtle shell design as it kept the same core ideas as our initial design. Easy and more flexible with our ideas. We thought it would fit our goals pretty well.



Perspectives

An idea of how the roof tiles will look to resemble a turtle shell:

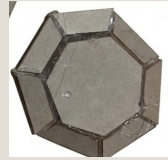


ROOF TILE MODEL

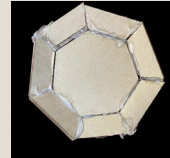
ROOF TILE MODEL

The tiles are semi transparent and are meant to filter light into the classroom .

When they are upside down. They function as roof/building tiles.



When they are right side up, they function as a pan for our green roof.



The individual trapezoid side tiles can also be swapped out for ventilation screens or solar panels

materials

❖ Opaque/White multi-wall polycarbonate

Opaque/White multi-wall polycarbonate is a durable, lightweight, and insulating sheet material featuring a cellular structure (twin-wall or multi-wall) that provides high impact resistance. It offers significant thermal insulation and UV protection, making it ideal for diffusing light while reducing heat



Stainless Steel Studs: Offers superior corrosion resistance, ideal for harsh, high-moisture environments.



Recycled Cellulose Profiles:

Emerging sustainable, eco-friendly option developed by companies like SORIWA (Germany) for interior partitions, which stores carbon and requires less energy to produce.



SPC (Stone Plastic Composite) : flooring is a highly durable, 100% waterproof, and rigid-core luxury vinyl flooring made from a blend of limestone powder, PVC, and stabilizers. It is designed for high-traffic residential and commercial spaces, offering superior dent resistance compared to standard vinyl or wood.





Benefits of our Classroom

- Easy to assemble and disassemble
- Flexible to move around anywhere you want
- Ensures comfort of staff and students
- Financially affordable

