

Honeycomb House

By Two By Fluor

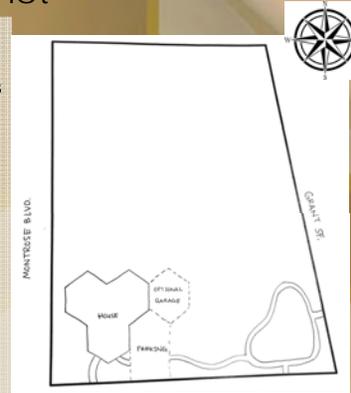
Architecture

4 Building Sections: Plot

Our site in Montrose, Houston has no construction barriers. Our modular house is to be built towards the one of the two main streets, allowing easier access to both the main road and a smaller road.

With the total area of 43,733.99 ft², there will be plenty of excess space for more modules to be added in the future

The unique hexagonal house will stand out shape wise, but blend in design wise due to the use of similar materials to the surrounding houses



6 Model

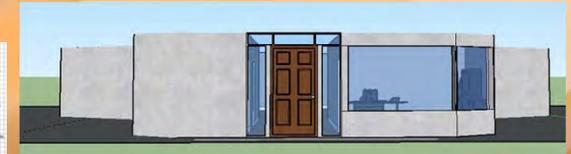
This is the first base of our modular house. The first base consists of three modular hexagons put together.

A platform will be built for further expansion, and will serve as a veranda. A space for a future staircase is reserved and used temporarily as storage space should the owner wish to expand upwards. The roof is flat and is minimally domed to prevent precipitation from collecting on top but still allowing additional modules to be "stacked" on top.



Elevation and Section Views

- High of wall: 10 ft. high
- Length of each side: 16 ft./side
- Area for one hexagonal module: 665 ft²
- Total are of base (3 hexagonal modules): 1,995 ft² for total base

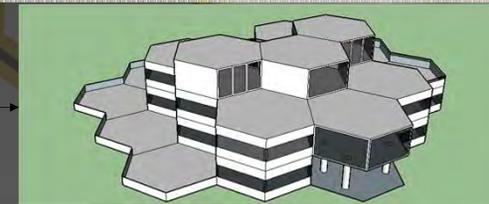


7 Expansion Modules

Additional modules are to be added on top of the already built veranda. This makes the construction process easier in fact that the foundation is already there.

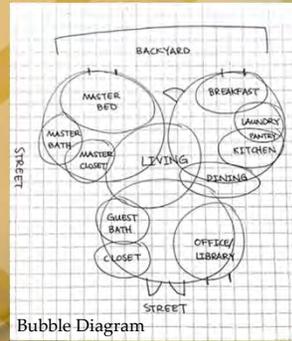
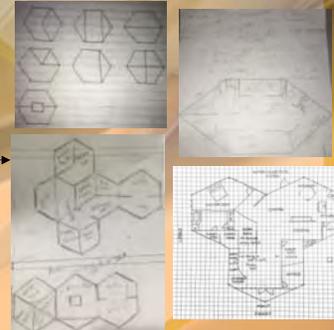
Each hexagon is one module and residents will have infinite patterns as to how they want their new modules to be built. Additional platforms (verandas) could also be built.

Two of the six sides of the new module, the sides that will be adjacent to the already built module, will be empty walls with the backdoors (or additional doors made) will serve as the connection to the new module.



5 Building Sections: House

Floor Plan Ideas

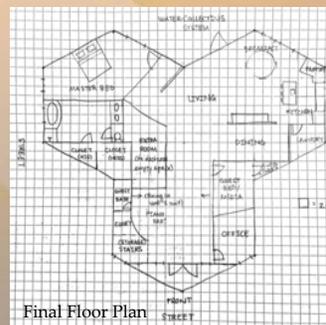
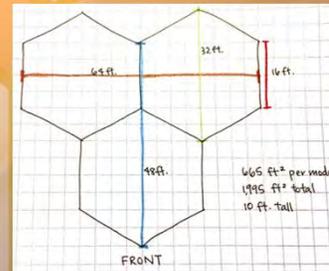


Bubble Diagram

First, we first came up with a bubble diagram to represent our basic thoughts to focus on the key features that should be included in the house.

Then, we drew a few floor plans as different options and agreed on one.

Finally, we calculated the appropriate sizing of the house and figured out the dimensions.



Final Floor Plan

Pre-development

1

Modularization:
When discussing about our project, we focused on some key words when visualizing our house to share a common idea and ensure consistency throughout the design process.
This helped us embody ideas that were not tangible before.

Lego
Modular
Jenga
Repetition
Puzzle
Geometric
Tetris
Connection

2 Inspiration of Design

As we were discussing about the shape of our module, we started to look into the shapes occurring in nature. Natural shapes such as the Fibonacci spiral found in seashells and the hexagon displayed in honeycombs (from which we drew our inspiration) are in balance with patterns, and more importantly, are structurally sound. The requirements of our modular house called for such structural efficiency and flexibility in a shape.

- Our Solution: Regular Hexagon
 - Nature's perfect shape
 - Efficient use of space
 - Ability to expand in six directions
 - Strongest shape



3 Our Site

MONTROSE



- Project Manager - Hanna Iizuka
- Engineer - Alexis Garcia
- Architect - Abner Bonilla
- Architectural Design - Eve Wang
- Procurement - Raina Abraham
- Safety - Ethan Jackson
- Research - Simon Huynh

Location Montrose, Houston serves as a residential area for thousands of people.	House Price Average: \$600,000 to \$1,500,000. The medial list: \$244/sqft.
History Established in 1911.	Residents Demographically diverse area.
Names "Heart of Houston" "The Strangest Neighbor-hood" "Greatest Neighborhood"	Neighborhood Many unique mansions, bungalows, and cottages located along tree-lined boulevards.

Teammates

