



HIVE

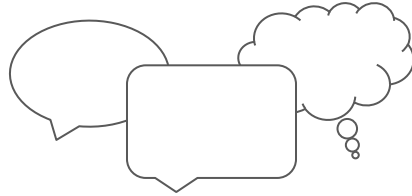
Habitable Immersive Vascular Envelope

angelina lee

dr. jayasinghe

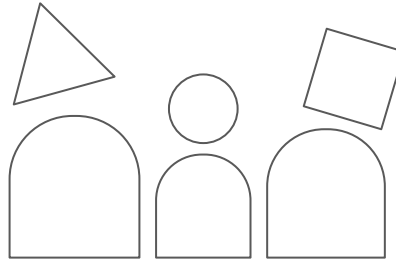
think 66 final project

8 March 2022



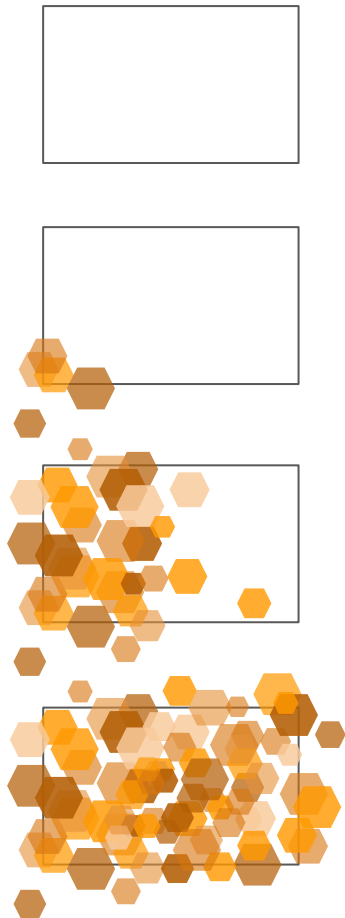
THE NEED

The Habitable Immersive Vascular Envelope (HIVE) arises from the pressing needs of 1) sustainable construction and demolition processes, 2) lower energy consumption and carbon footprints in our buildings, and 3) safe architectural spaces that promote healthy liveability across all demographics. The HIVE not only corrects short term problems, but also works to fix long term concerns. In shaping our built environment, the HIVE will also shape us.



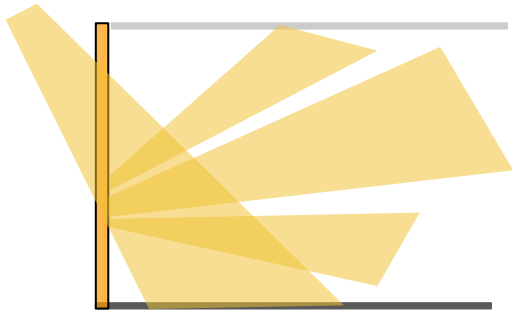
THE USER

The intended user would not only be the inhabitants (homeowners, shop owners, corporate firms, students, elderly, non-human companions like pets, etc.) of the building, but also visitors and passerbyers. The curb appeal aesthetics and the functional prowess of this complex living facade both directly benefit many stakeholders. This facade and its services are designed for human flourishing. More specifically, its aim is to evoke appreciation and stimulate communal interaction.



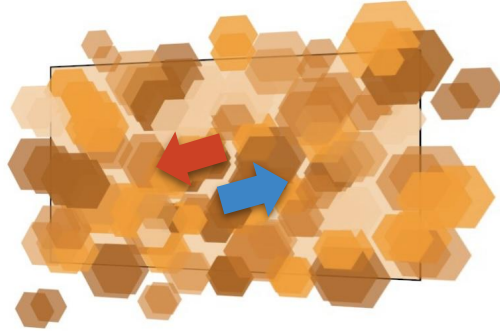
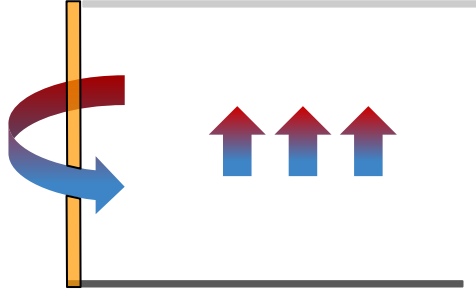
IMPLEMENTATION PROCEDURE

- 1. Frame:** using current fabrication technologies, construct the skeletal structure for the building's facade.
- 2. Plant:** place the baby living organism (which has similar genetic, chemical, and structural properties as a beehive) on the man made frame such that it will take root.
- 3. Grow:** let the beehive-like plant expand and evolve naturally over a couple days as it fills in the internal frame area and becomes the exterior wall itself.



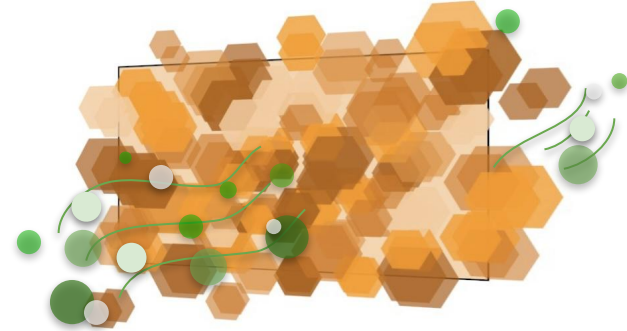
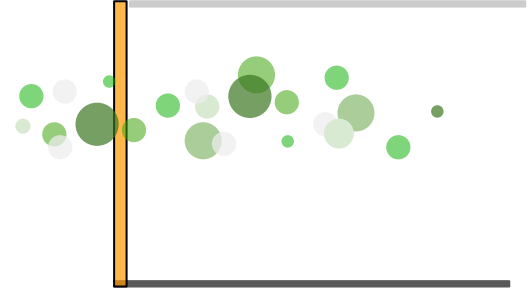
LIGHTING MANIPULATION

The bubbled curvatures of this hexagonal arrangement will distribute incoming sunlight such that it fills the interior space as evenly and as intensely as desired.



TEMPERATURE CONTROL

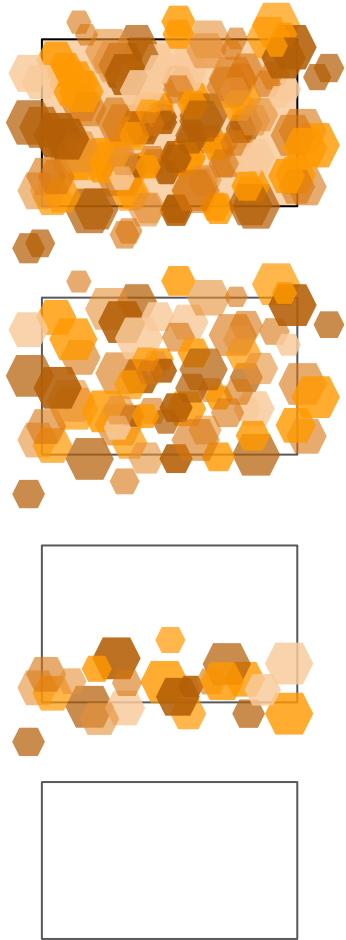
Inviting cool breezes in and redirecting unwanted heat up and out, this breathable envelope grants seamless air circulation between the interior and exterior.



AIR PURIFICATION

Since the wall is comprised of a living plant organism, it also has the ability to purify the air by filtering out toxins and absorbing carbon dioxide.

THREE MAIN FUNCTIONALITIES



DECOMPOSITION PROCEDURE

- 1. Signal:** incite a chemical reaction where the planted organism knows to start decomposing.
- 2. Wait:** after several days, the biological structure will be gone, leaving only the man made frame behind which can be taken apart as it was a modular system.
- 3. Repurpose:** Return the compost to the earth, reuse the frame in another build, and recover the real estate for another sustainable project.