

Hearth Cottages



Front Entrance Axonometric



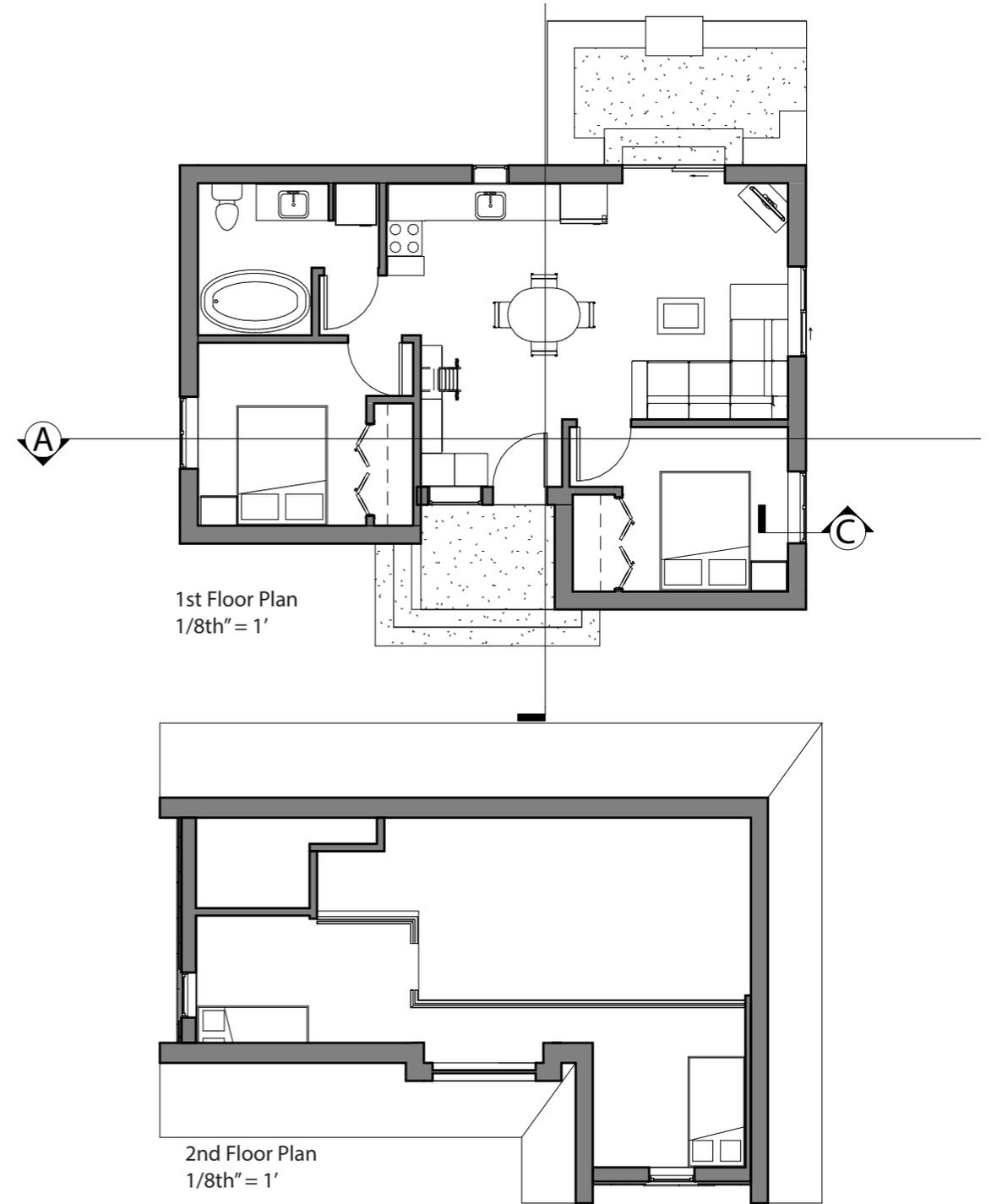
Exterior Hearth Axonometric

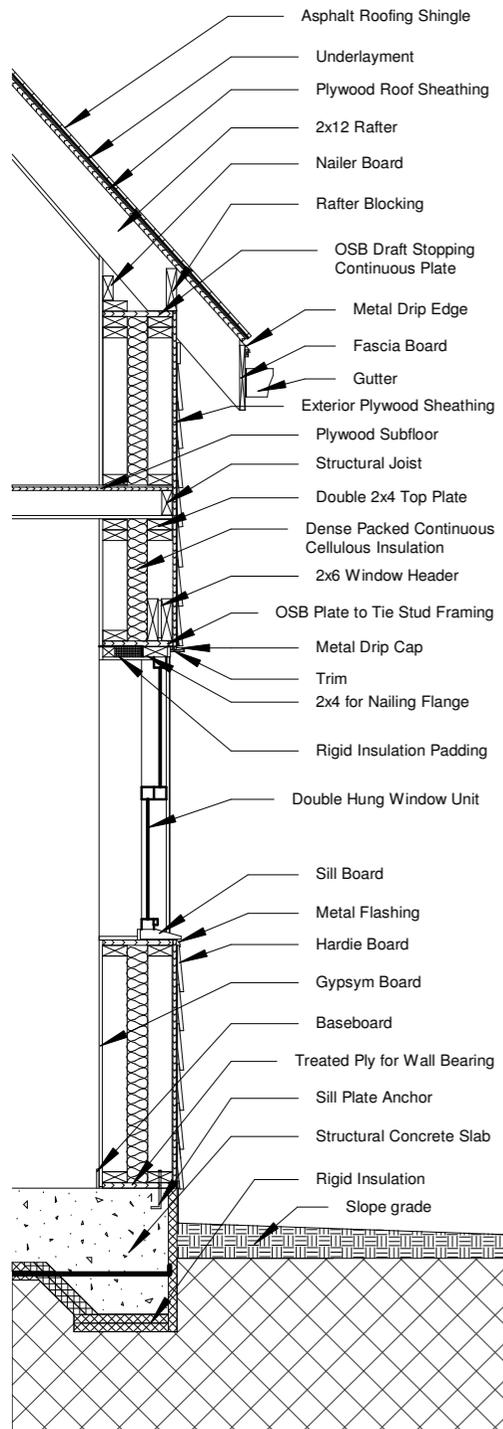
Introduction

The Hearth Cottages are intended to be an affordable option of housing typology for Habitat for Humanity's use in construction and design moving forward. At 636 square feet it is a close knit living experience with large vaulted ceilings to really expand the presence of the gathering room at the center. Hearth has always been a connecting factor throughout human history and the 21st century hearth is the kitchen. It is where people gather to eat and make community and it is at the very center of this design. Additionally there is an exterior patio with its own gathering pit for enjoying companionship centered around the warmth of a hearth.



Interior Great Room Perspective





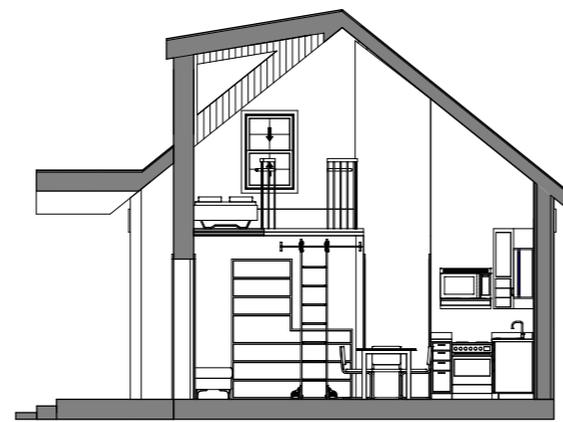
Annotated Wall Section C

To help increase the passive heating efficiency of the house, the exterior walls were all designed to be thick enough to accommodate double stud light timber framing. This is a relatively minimal additional cost in the construction process that can significantly increase the longevity and climate efficiency within the small house. The annotated wall section (left) details the different components within the wall.

Below are section cuts of the house depicting the sleeping quarters and loft/dormer space and the great room where the loft entrance inhabits.



Section Cut A



Section Cut B



East Elevation



West Elevation



North Elevation



South Elevation

Depicted above is each elevation view of the Hearth Cottage. The siding material is intended to be 'Hardy Board' clapboard siding (a favorite material for cladding by Habitat for Humanity). The presence of the dormer window is really felt in these views as it will function as a large light monitor for the interior of the house. Below is a perspective of the exterior hearth space, a gathering pit that will warm up as the hearth does.

ExteriorHearthPerspective





Interior Gathering Space Perspective



Hand Crafted Scale Model
3/8" = 1'

Detailed below are a couple building precedents that were analyzed early on in our research of small houses. The precedents were able to inform the design of the Hearth Cottages with their exceptional use of renewable materials and design efficiency.



Exterior raised pathway



Inspiring interior lighting



Dual level floorplans

2017 Jim Vlock First Year Building Project

Designers: Yale University School of Architecture

Year Built: 2017

Location: New Haven, Connecticut

Project Website: yalebuildingproject.org

Partnered with the homeless housing non-profit organization Columbus House, Yale architecture students worked together on designing a unique two unit dwelling. The goal was to develop a simple design to help with ease of construction and cost effectiveness.

Early on in the research phase the students met with a few individuals who were homeless and asked them questions about the sort of spaces they would like to live in, how they organize belongings, and other personal topics. Students then worked in groups to develop different schemes, then after presenting to a panel of professional architects one design was chosen for construction. Working at a facility on the Yale campus the panels of the house were fabricated in 8 foot segments so they could be transported and assembled easily at the site.

The 1000 square feet of the two dwellings are composed of a two bedroom and two bath home nestled over the other solo suite. Together with their large punched bay openings through the large protective roof they reflect a turning point in the conversation and action on the housing crisis that's affecting people and families in cities across the country. By bringing the community in through the windows it shows the inside of the simple yet luxurious home, it ignites conversations of passerbyers and community members, inspiring the work to feed and inspire itself.



Exterior shot



Interior paneling



Albizia louvers for air circulation



Loft ladder and open sliding door

The Albizia Project

Designers: Joey Valenti

Year Built: 2019

Location: Honolulu, Hawaii

Project Website: <https://thealbiziaproject.com/>

Beginning with the exploration of an invasive tree species the albizia tree, Joey Valenti saw it as an opportunity to test a new building material. Due to the albizia wood not being particularly dense and limbs being prone to suddenly fall off the people of Hawaii previously hadn't thought to use it as a building material despite its proliferation across the islands.

Using soft and low density lumber for construction is not something typically done so with this obstacle they worked on using innovative laminating techniques paired with the accuracy and replicability of CNC cutting they were able to make the albizia wood function as structural timber. The curving form of the structure is meant to be a callback to traditional cultural buildings, this came to fruition with Valenti doing research on various low-tech, traditional Pacific Island architecture.

The vaulted dome-like shape is not just cost effective, it also serves the purpose of circulating air which also reduces the need for air conditioning in the humid climate of Hawaii. The air circulation is supported by the many wooden louvers angled to promote the cross circulation.

The structure has a built in loft and a large sliding panel to act as a door. The top of the arched shell is covered in a locally fabricated weatherproof tarp to keep rain out. The sustainability built into the core design of these structures is what makes this such an outstanding precedent.



Exterior view of the front entrance