

Sustaining O'hana

*An Affordable ARU
Design Submission*

With an experienced background in the field of thoughtful immersive environment design, Clinton is eager to utilize his abilities through the creation of meaningful architecture. He is currently serving as an Americorps member at the Kaua'i affiliate of Habitat for Humanity located in Hanapepe, Hawaii. This opportunity has allowed him to go beyond the computer screen, fostering an appreciation for the local people of Kaua'i as well as quality construction methods through affordable means.

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Site Analysis

Community Input + Climate Impact



Community Input

Life on Kaua'i

The current climate of Kaua'i is one that struggles to accommodate for the rising population of locals and new residents. Local culture comprises of multi-generational homes, grandchildren learning, playing, and receiving love from their uncles and aunties.

While the close proximity of family has plenty of benefits, the issue of overcrowding is common. With the lack of affordable housing on the island, residents have been forced to deal with the discomfort or come up with innovative solutions.

This project focuses on how to create a space of architecture that provides its users the ability to thrive.

- Thrive through comfort.
- Thrive through independence.
- Thrive through family.

Climate Impact

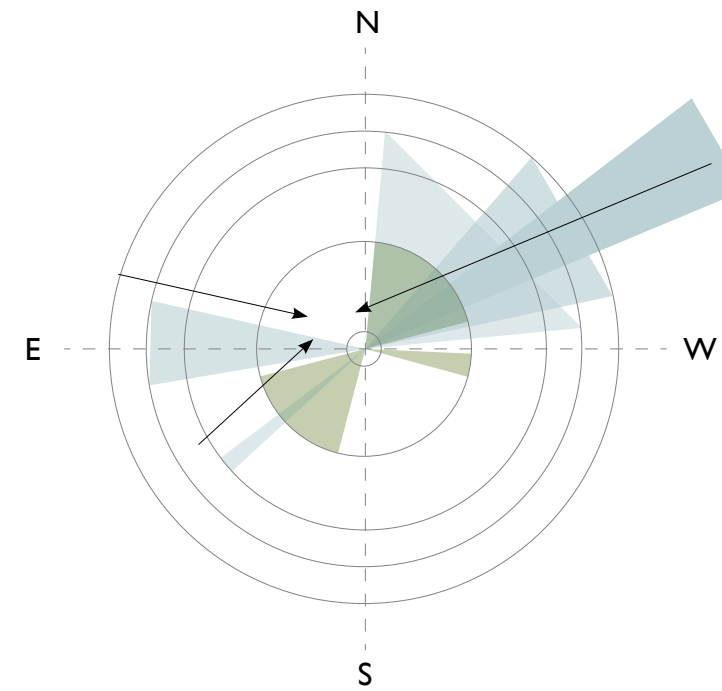
Designing with Environment

When creating any piece of architecture, the site and climate must be the top consideration. Despite the build able site, the design task is substantially easier but not complete. The strategies on the right detail five specific ways of achieving a comfortable interior climate for Lihue construction. With ventilation being the top consideration this design's window placements and variety are strategically chosen.

Top 5 Successful Design Strategies

- 1 // Natural Ventilation Cooling
- 2 // Fan-Forced Ventilation Cooling
- 3 // Sun Shading of Windows
- 4 // Dehumidification Only
- 5 // Active Cooling Through Air Conditioning

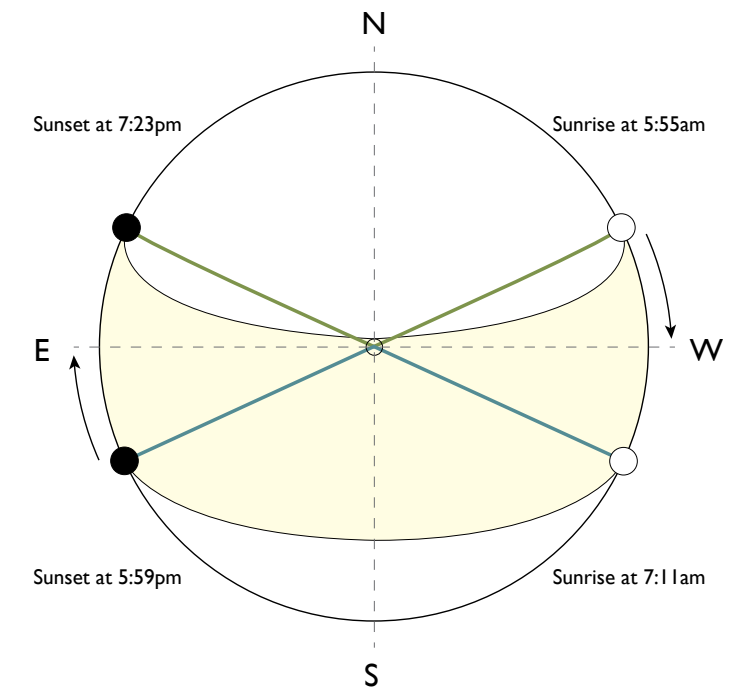
*Comfort Strategies From Climate Consultant 6.0 Software



Annual Prominent Wind Magnitude

This data informs the location and size of the windows utilized for the ARU. With this information, the design insures the user family of frequent cooling through the trade winds' natural circulation patterns.

- Prominent Winds
*Size of Polygons are Proportional to Frequency
- Avg Wind Speed: 15 mph
Max Wind Speed: 30 mph
*Directions are Island Highs



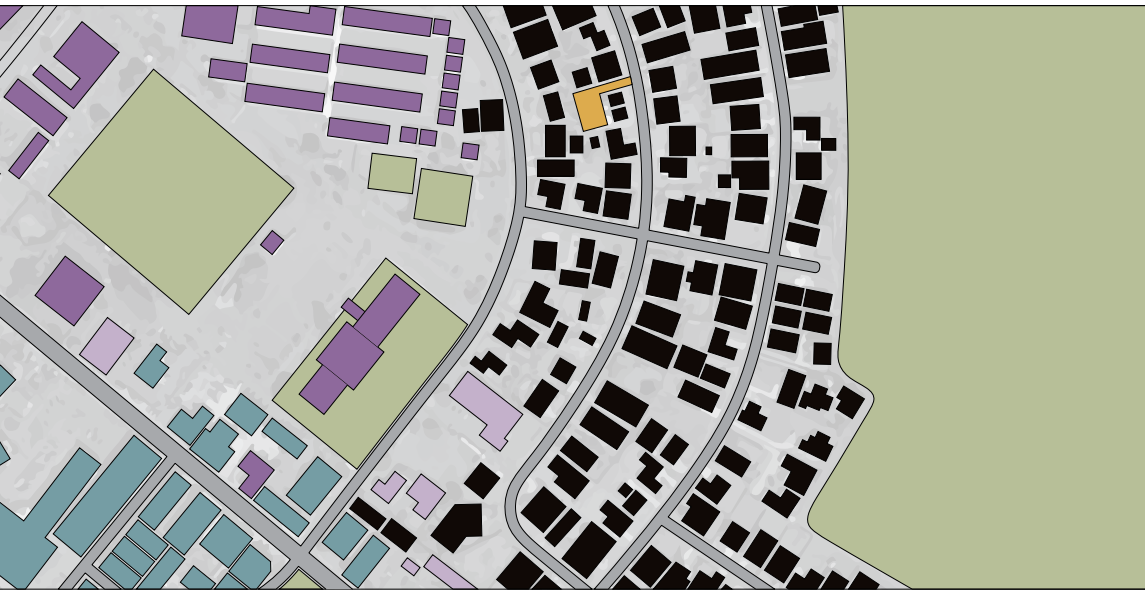
Sun Path

Through an understanding of the site's relationship with the sun, the project will successfully integrate the third-most relevant comfort strategy, sun shading. Furthermore, this can best assist in the location and design of frequented outdoor spaces.

- Winter Solstice (Dec. 21)
44.51° altitude
176.27° azimuth
- Summer Solstice (June 21)
86.18° altitude
66.71° azimuth

Proposal

Project Narrative + Plan Analysis



Lihue, Kaua'i

Site Map Key

- 1 // Proposed Build Site Property Line
- 2 // Single Family Residences
- 3 // Public Buildings
- 4 // Green-Spaces (Parks and Open Space)
- 5 // Public-Serving Buildings
- 6 // Private Buildings

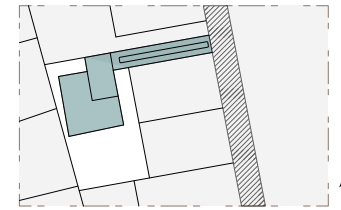
Project Narrative

A Family With Nowhere to go But Home

Located in an area of family homes, civic infrastructure, and hubs of activity, this site culturally delivers what a household needs. However, a story about a family's struggle to stay together in today's Kaua'i drove this project's creation.

This ARU was constructed out of necessity. Tanya and Bobby, newly-become grandparents and parents to four of their own, had raised all their children in this home but were running out of space. While Donald and Frankie wanted to stay near Donald's family home, it was evident that a new-born would push the scale too much. However, with the rising cost of living and lack of rent able places there was nowhere to go. Ultimately, a spark of realization brought the complete family to realize there was no need to travel far. What they needed was in front

Plan Analysis

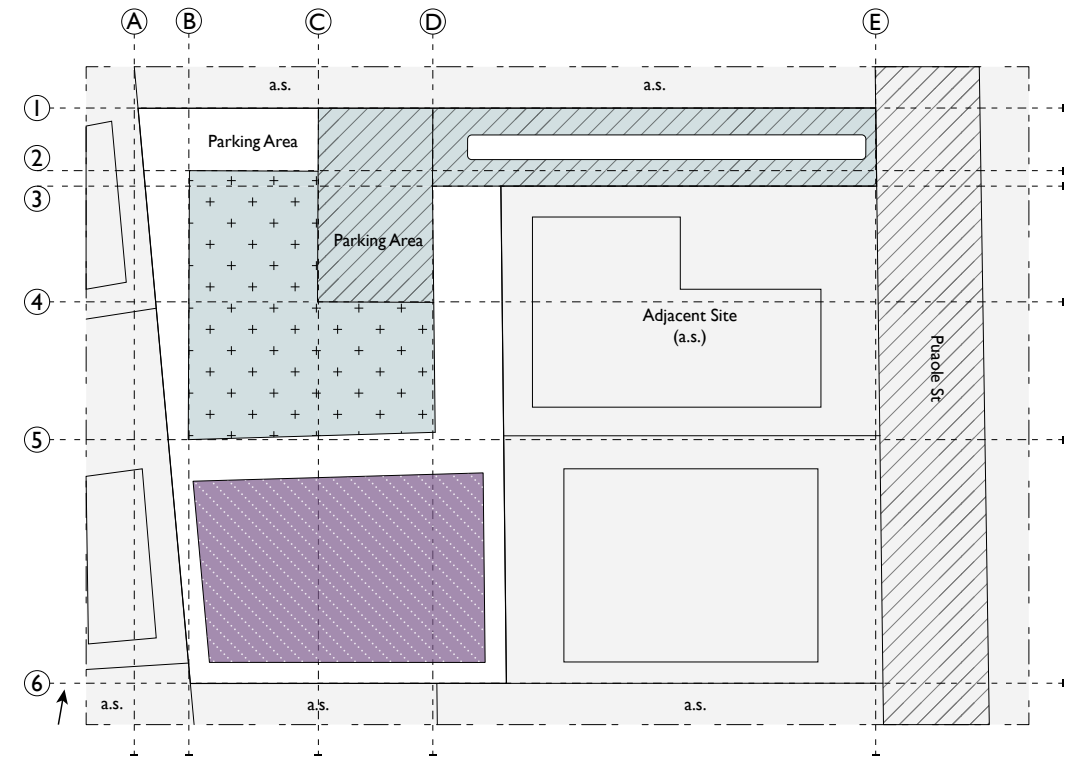


Key Site Plan

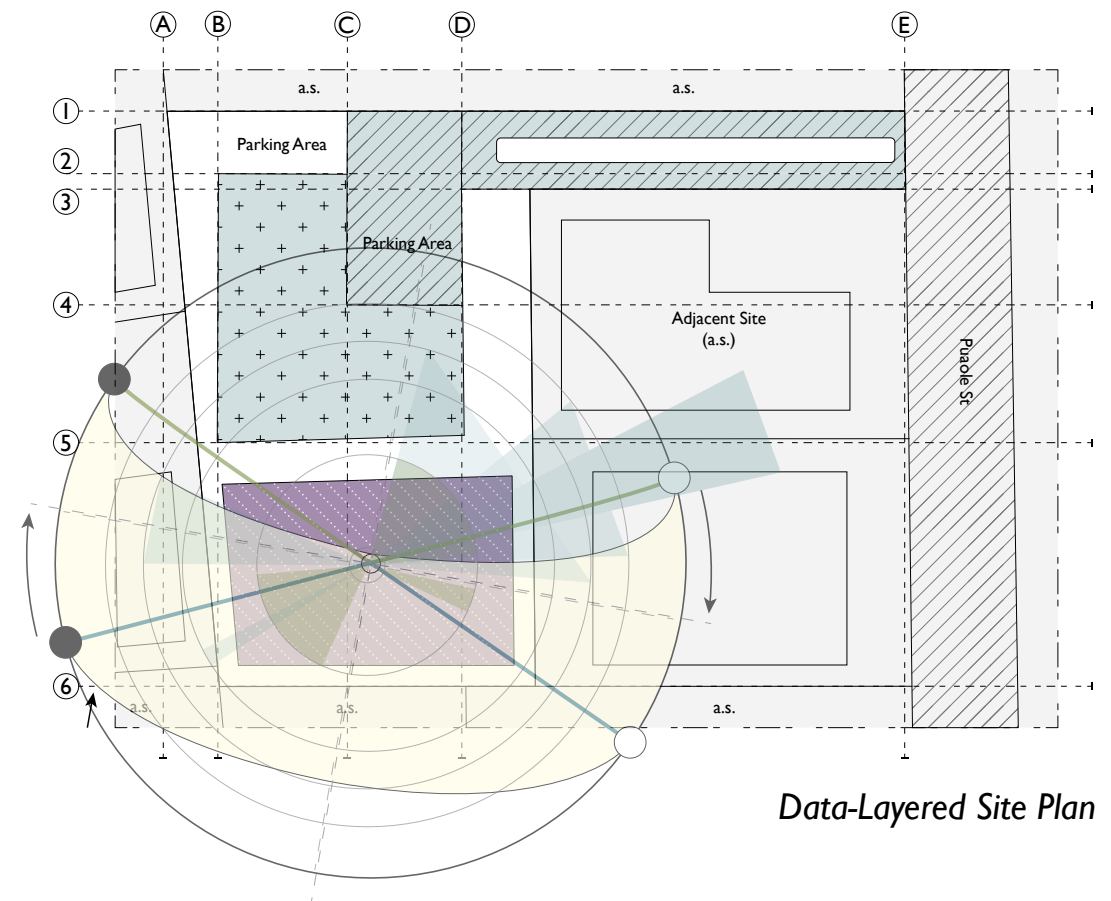
An overlay of climate data on the existing site plan illustrates significant design constraints for ventilation, daylighting, and circulation. The dominant wind patterns give multiple axes for windows and hallways, while the sun path dictates which walls require shaded or non-shaded windows.

Emphasized through this project were the layouts and placements of programmatic elements to increase comfort for those visiting and living here. Circulation and how people live here are prioritized over a continuation of architectural style from the existing house.

This was done not only to give this new family their own space, but stress relationships over style.



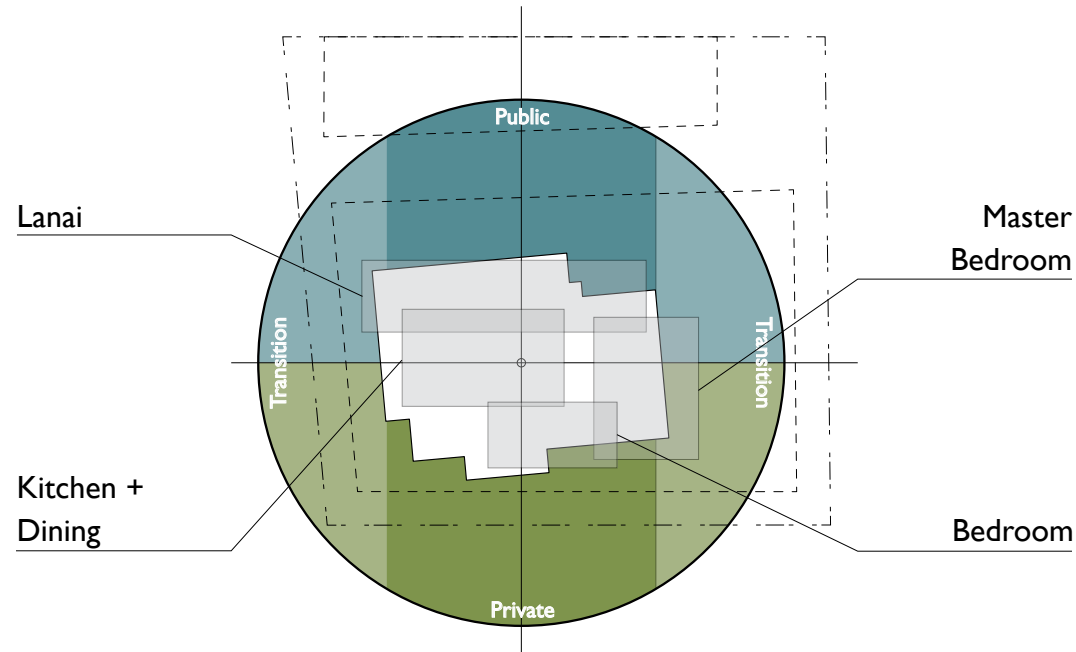
Site Plan



Data-Layered Site Plan

Drawings

Program Organization + Floor Plan



Program Organization

A Multi-Generational Homestead

The organizational goal of this ARU is to emphasize the ability to host people, while reserving areas for residents to have their own space when desired. The diagram above outlines this, with the public side being towards the existing home.

Floor Area Calculation

- 1 - Master Bedroom [170 sq.ft.]
- 2 - Master Bathroom [60 sq. ft.]
- 3 - Bedroom [135 sq.ft.]
- 4 - Bathroom [55 sq.ft.]
- 5 - Open Pantry [50 sq.ft.]
- 6 - Kitchen [165 sq.ft.]
- 7 - Dining Room [130 sq.ft.]

Total Floor Area: 765 sq. ft.

While the footprint of the ARU is considerably larger than what one would expect with a maximum floor area of 800 sq. ft, by utilizing Kauai's beautiful climate, the design stays within necessary guidelines. Furthermore, the use of open-air corridors allows for better air circulation and separation between active and bedroom areas.



Floor Plan Key

- | | |
|---------------------|------------------------------|
| 6 - Kitchen | 7 - Dining Room |
| 1 - Master Bedroom | 8 - Lanai |
| 2 - Master Bathroom | 9 - Front Lawn |
| 3 - Bedroom | 10 - Stairs to Rooftop Patio |
| 4 - Bathroom | 11 - Exterior Shower |
| 5 - Open Pantry | |

Drawings

Section + Perspectives

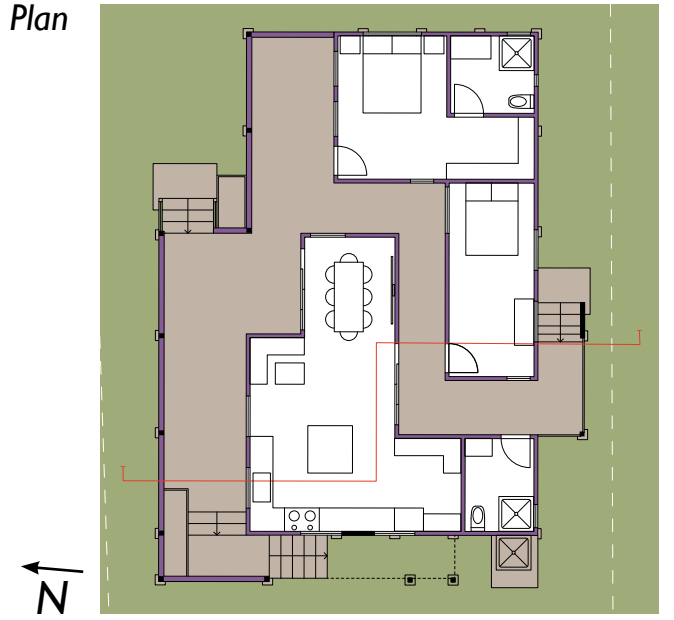
Project Visualization

A Multi-Layered Experience

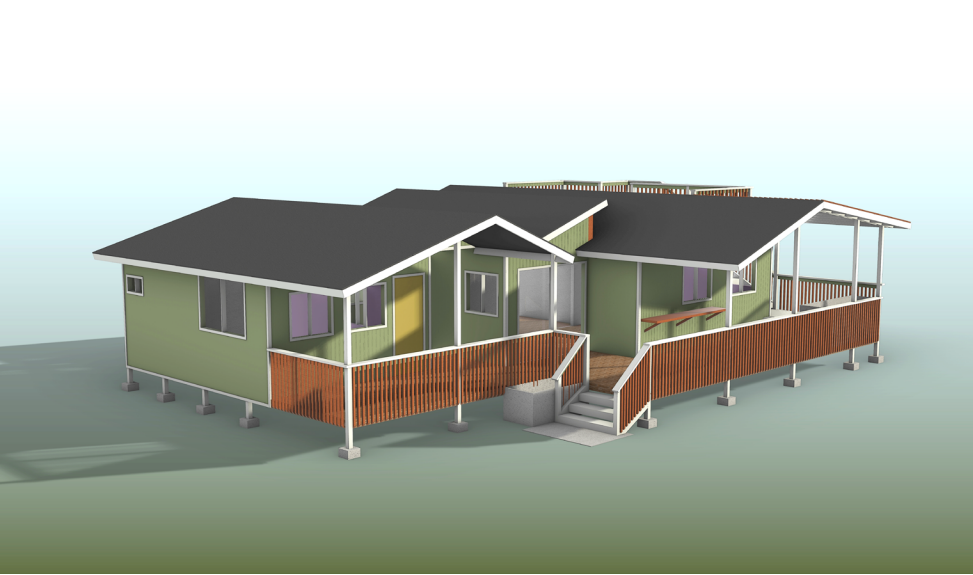
The design of this ARU focuses on the relationships between people as frequent/in-frequent guests and the family unit. By envisioning spaces to be used more fluidly than normal, everyone can be satisfied by the experiences fostered here; hopefully, allowing for a comprehensive multi-generational household.

Note: Drawings are to scale, but are attempting to evoke illustration more than detail. Further drawings will be completed if necessary.

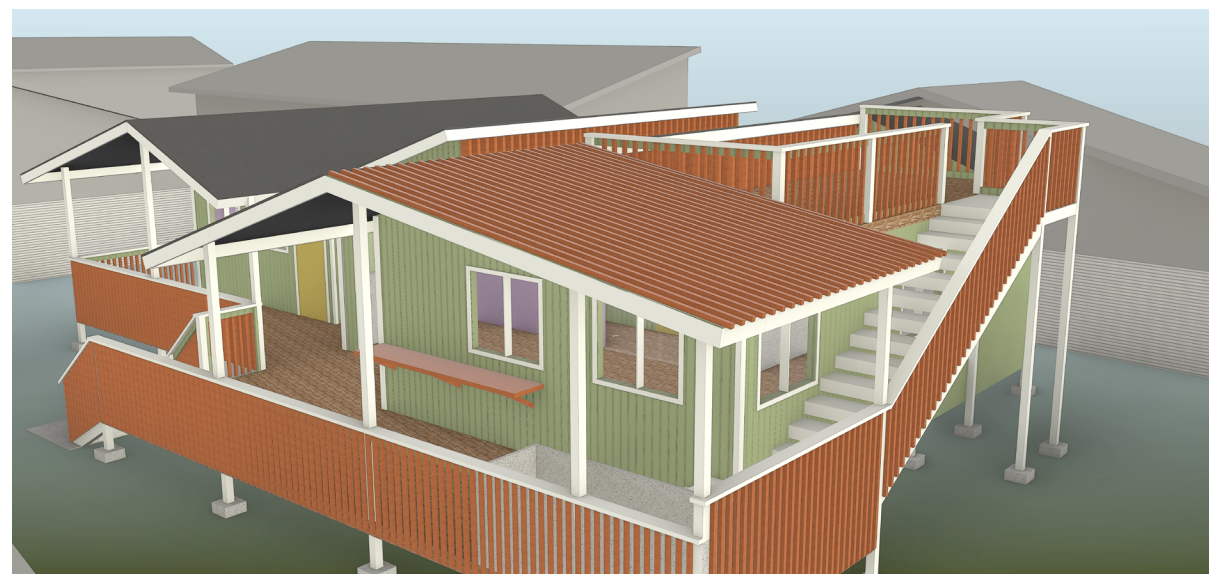
Key Floor Plan



East-Facing Section



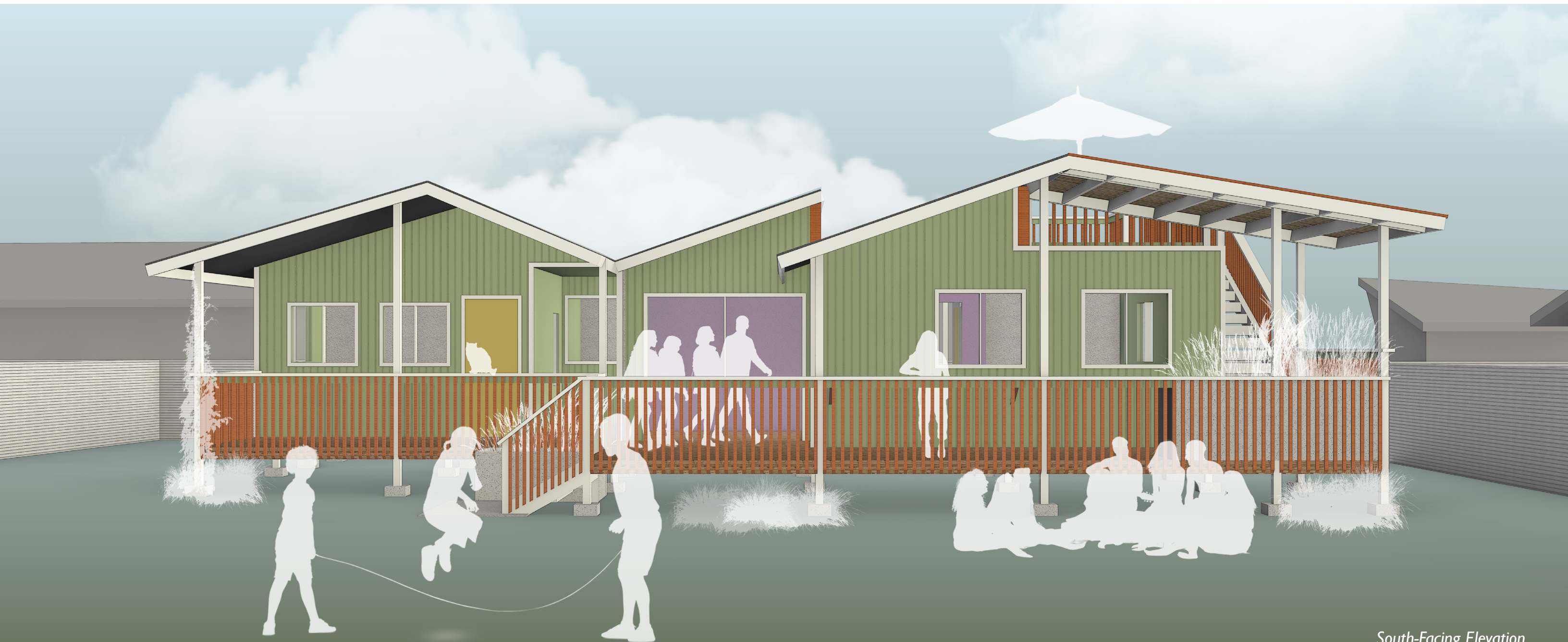
Perspective View



Rooftop Patio + Lanai View



Lanai + Front Yard View



South-Facing Elevation