

ARU DESIGN PROPOSAL

WAILUA HOMESTEADS, KAUAI

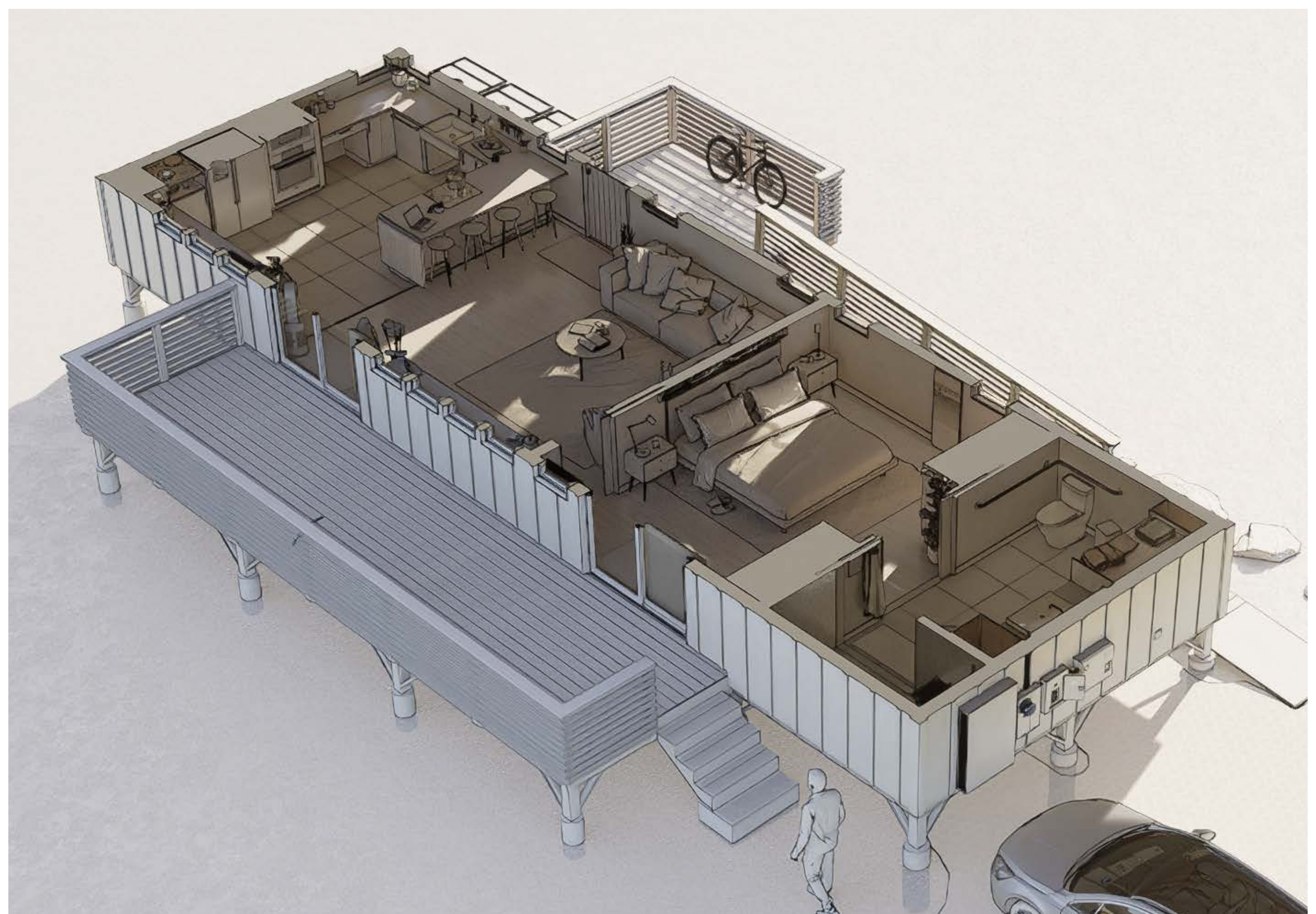
PREPARED FOR: BETTER BLOCK HAWAII

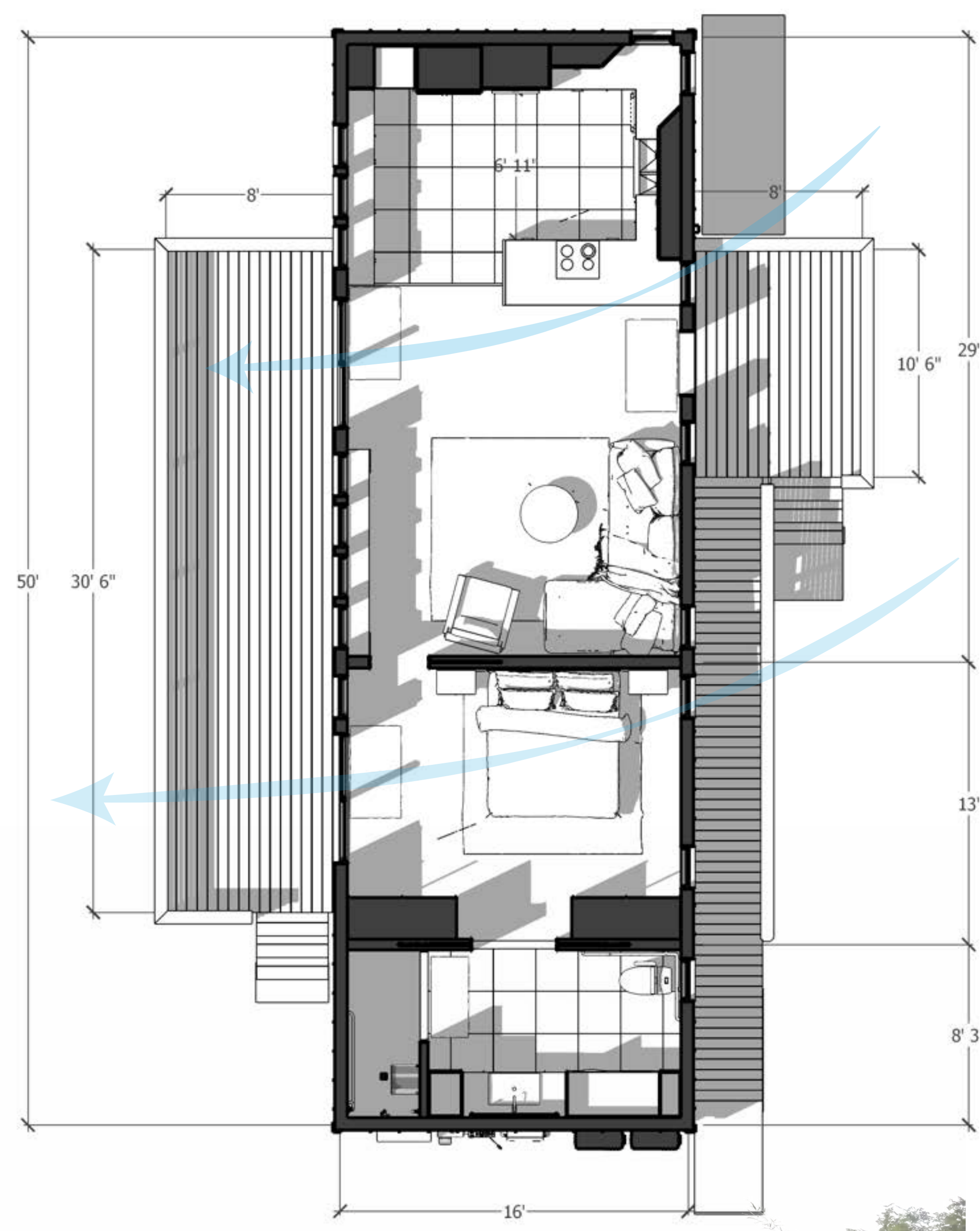
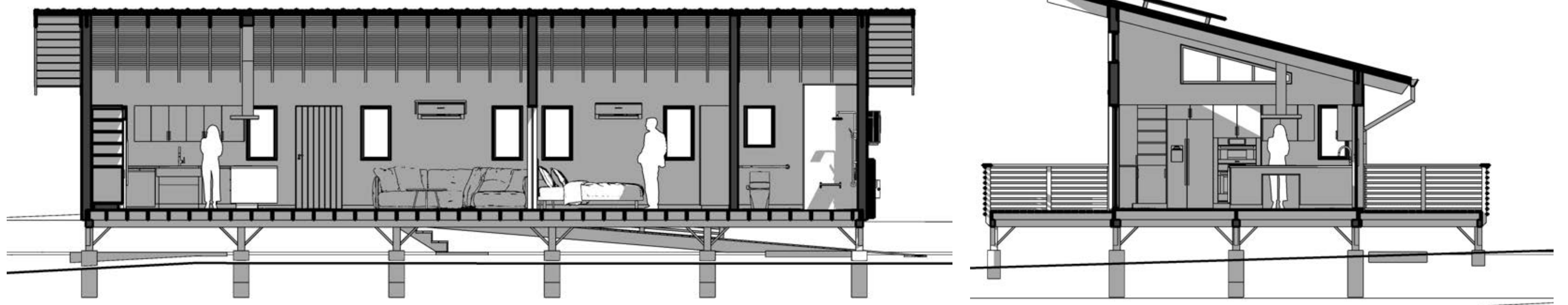
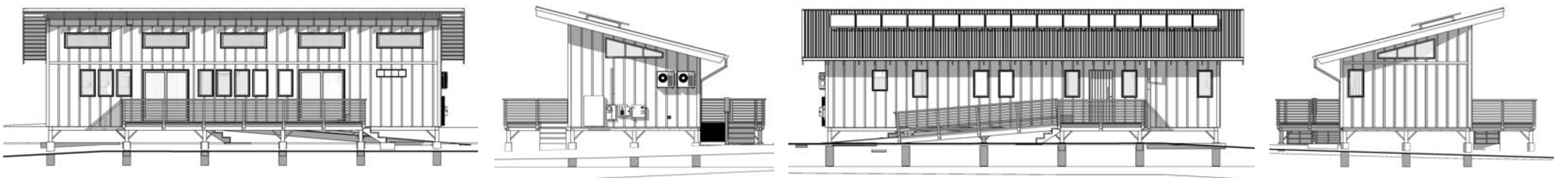
PREPARED BY: MICHAEL G. GRIFFIN



BIO

Mike Griffin is a 2nd year student in the Architecture, Engineering, and CAD program at Honolulu Community College. He graduates May, 2024 with his Associate's Degree. After which he aspires to continue his education at UH Manoa School of Architecture to pursue his passion and achieve a Bachelor's Degree in Environmental Design.







SITE ANALYSIS

Wailua Homesteads on the island of Kauai is a tropical area characterized by a warm and rainy climate, rolling hills, lush vegetation, and cultural significance. The area offers a rural feel to residents and visitors, which is complemented by the beautiful mountain vistas to the west and south. Economically, the community is primarily considered to be middle class with a median household income of around \$110,000. The median age in the community is 46. Further more, 35% of residents are over the age of 60 while 45% of residents are between the ages of 20 and 59.

AESTHETICS

These factors were all considered in the schematic design. To maintain the versatility of the placement, location, and use of the unit it made sense that, aesthetically speaking, it shouldn't stick out like a sore thumb. Rather, the unit should complement the old Hawaii plantation styles already present in the community, only tweaking the traditional roof style from hip to shed, allowing the unit to take better advantage of natural sunlight and trade breezes.

FLOOR PLAN

Age demographics of the community played a large part in the development of the unit's interior layout. Taking into consideration that roughly one-third of residents in the area are over the age of 59, interior spaces were laid out to be as ADA-compliant as possible, which would open the unit's availability to the Kupuna in community. Hallways and interior doors parallel to the flow of traffic were avoided to facilitate easy conveyance from room to room via wheelchair or walker. This has the added effect of allowing for an uninhibited cross breeze from room to room as windows occupy both east and west exterior walls.

STRUCTURE

The structure of the unit needs not only to cope with the warm and wet tropical environment of the area but also to do so in such a way that comfortable living conditions for occupants can be maintained without the routine need for mechanical cooling systems and ventilation. Consideration was also taken to design the unit in such a way that the landscape and surrounding environment were minimally impacted, and the unit could maintain some measure of self-sustainability.

The structure is built on a post and pier foundation, allowing for added protection against pest and flood water damage, and easy access and maintenance of plumbing and electric utilities located under the floor. Both roof and west-facing wall assemblies contain a layer of 1-inch foil-faced rigid foam insulation and a 3/4-in rain screen to inhibit water infiltration and heat gain through exterior facades with the most sun and rain exposure.

PV panels, solar water heaters, tankless water heaters, water catchments, and home battery backup systems are all implemented in this simple design, allowing for maximum sustainability, increased future savings on utilities, and minimal environmental impact.

