

# Happy Valley Community Living

## Concept & Location

Along 32<sup>nd</sup> St in Happy Valley, single family homes are being torn down and high-density apartments are being built in their place. While there's a need for high-density housing for the university especially, Happy Valley could benefit from middle-density housing that maintains the neighborhood's community feeling, while still adding much needed units for non-students. That's why I designed Happy Valley Community Living.

This strip of Happy Valley has large 240'-300' x 80' lots that can accommodate medium-high density housing well and still have land leftover for shared outdoor space. When designing this community, I specifically wanted to show what could be done to a lot without tearing down the existing single-family home. I picked this particular lot at random along 32<sup>nd</sup> St, and designed around the existing home, choosing to only partially demolish the garage.

The overall goal of this community is to fit in with the architectural style and scale of Happy Valley and maximize green space to appeal to a wider audience as Middle Housing gains traction, encourage communal interaction, and enrich the occupants' living experience with third spaces outside their units.

## Affordability & Constructability

One of the main reasons for keeping the existing single-family residence on the lot is to help keep the project affordable. There's no need to demolish the entire home, but in an effort to utilize the lot more effectively, this would require the shell of the garage to be demolished, leaving the slab to be reused. In an ideal situation, this development would be made in collaboration with the existing owners, which would bring down the overall cost of each unit since land wouldn't need to be purchased.

By creating space-efficient units, stacking bathrooms/kitchens, increasing outdoor living space and communal areas, and reducing the undulations in the exterior walls, we can further reduce the cost per unit to construct which gets passed on to the buyer. For long-term affordability, the complex is highly energy and water efficient which reduces monthly utility bills. The high-performance and high-quality exterior envelope will hold up great over time, reducing long-term maintenance costs as well. When thinking about livability, each unit is designed with double-studded walls and rockwool insulation to reduce sound between units. Additional sound insulation would be installed between floors.

To confirm project feasibility, the design was shown to the COB permitting department and confirmed this hypothetical design should be permittable as a duplex and fourplex.

## **Sustainability & Resilience**

Sustainability is at the forefront of the design of this project. The exterior shell uses SIP walls & roof, ICF foundation walls, and triple-pane windows for a tight envelope and paired with energy efficient mini-splits and on-demand hot water heaters for each unit. Each unit is also south-facing to maximize passive lighting and space for rooftop solar. All appliances would be Energy Star rated and plumbing fixtures would be WaterSense certified. Interior finishes such as flooring, paints and cabinet finishes would be low-/no-VOC. Rockwool would be used for interior insulation to not only provide additional sound dampening, but extra fire and mold resistance. The complex maximizes garden space, utilizing clover or wildflower lawns, drought-tolerant and native plants throughout and utilizes plants for natural barriers to define spaces. To continue the garden feeling and reduce hard roof surfaces, green roofs are installed above Unit 1's front entry and along the perimeter of Unit 4 & 5's decks. The green roofs, white siding, and medium brown colored roof are all chosen to reduce the heat-island effect that comes with adding man-made hard surfaces. Permeable pavers are also used for all pathways to allow water to infiltrate naturally into the soil.

## **Innovation & Creativity**

In order to maximize the lot in a way that felt natural and encourages community, a mix of middle housing types were used, including a four-plex and creating a duplex with the existing SFR. Inspired by co-housing, a multi-purpose shared space was added to encourage community and provide extra space for less-frequent activities, allowing each unit to be space efficient. In the front of the lot, a community garden was added to be shared by residents and non-residents alike to further build community and share food wealth. Each unit was designed with accessibility in mind and for a variety of different types of households and ages. The complex also pushes the boundaries of what's on the market for medium- and high-density residences by going beyond code-minimum and creating a sustainable and high-performance complex. It utilizes innovative technologies and finishes such as SIPs, ICFs, aerobarrier air sealant, energy efficient mini split heatpumps and tankless hot water heaters.