

Sequoia

Sequoia is a full-blown 3-bed house providing all the flexibility and opportunities of a second house on the property. By fully maximizing the 1000sf limit, the design provides a wide array of uses over time, whether as a rental for roommates, a long-term home for a family with kids or a downsize for grandparents still looking to provide rooms for family.

Universal Design & Aging in Place

- Single floor living option with primary bedroom located on ground floor.
- All doors min. 32" clearance.
- Slab-on-grade construction for no stair entry.

Affordability & Cost

- Slab-on-grade design reduces material cost.
- 3 bedrooms maximize potential rental income or room for family & friends.
- High performance features = reduced operation costs

Sustainability & Resilience

- Building orientation - Elongating buildings in the East and West dimension helps to maximize south light exposure and to minimize over heating from the harsh East and West sun.
- Systems - Integrated appropriately sized heating, air ventilation, and hot water systems not only ensure high energy performance and low environmental impact, but they also guarantee a comfortable and healthy home.
- Moisture management - Building assemblies designed to prevent bulk water intrusion and avoid condensation. This is accomplished through vapor open airtight assemblies and proper insulation strategies including assemblies like rain screen systems, exterior insulation & air-tight but vapor open roof and wall membranes.
- Window Placement - Providing ample windows on the south side of a building with appropriate shading devices creates ideal lighting and heating in the Pacific Northwest Climate. Minimizing window size and placement on the ill-lit North elevation prevents heat loss where solar heat gain is minimal. Reducing windows on the East and West prevents overheating and glare where shading devices are less effective at lower sun angles. Limiting operable windows to only locations where they will commonly be used and provide cross ventilation reduces initial costs as well as durability/performance by reducing the number of operable parts.

Innovation & Creativity/Aesthetics

- Living “within” the roof on the upper floor reduces calculable square footage in the bedrooms where headroom is less important allowing the square footage to be pushed to the ground floor to provide more ample single floor living.
- Building Roof & Shape - Cost effective light framed, or truss gable roofs are an easily constructed shape. Running the ridge East-West optimizes the south side of the gable for PV solar energy collection. The attic space within the gable can also serve as a mechanical space for equipment and ducts or be vaulted to maximize volume in small spaces.
- Locating the building on the alley allows for maximum south light and communal yard space for gardens, gathering or play space between the two dwellings.
- Simple gable roof design not only provides a low cost, easy constructability but also provides the clean lines of modern design but with a vernacular feel that can fit into any existing neighborhood.
- Roof Deck – provides usable outdoor private space on shared lot utilizing the larger