



## 2023 Whatcom Housing Alliance - ADU Design Competition - Madrona Cabin

### Universal Design and Aging In Place

As home designers and architects, we are usually tasked with creating custom designs that serve the current needs of our clients, ignoring the needs of future owners. This Cabin has been designed with adaptivity in mind. The fully insulated flex space allows the plan to evolve with changing needs and could be used as a second bedroom, home office, garage or artist studio. A young adult might use the flex space as a garage or workshop while a family might use the additional space for another bedroom or play space. The single story, open floor plan prioritizes accessibility with wide doorways and a bathroom that maximizes space for movement. The designs meant to evolve as needed as families grow.

### Affordability and Cost Effectiveness

Post frame construction (or pole building) is one of the most affordable methods of construction and is often used for garages, barns and agricultural buildings. By using the post-frame method for residential construction, money can be saved with fewer load bearing walls and lower material and labor costs. Exterior insulation allows post frame construction to meet current and future energy requirements. The simple shed roof is cost effective and creates the ideal sub-surface for solar (PV) panels. Large covered, outdoor spaces allow the living area to expand at a fraction of the cost of finished, interior space. This quality and style of building strikes a good balance between material resilience and overall budget considerations.

### Sustainability and Resilience

Madrona Cabin utilizes passive solar design with large transom windows to capture morning and evening sunlight while wide roof eaves protect the interior from over-heating in the mid-day sun. The shed roof accommodates the grid-tied solar system, large enough to provide for current and future energy needs. Installation of a rainwater catchment system affords the homeowner the option of connection or independence from a well or other water system. Efficient windows and doors, maximized insulation values, and heat pump technology also help to minimize energy loss and create a comfortable home that's powered by passive and sustainable energy. An ERV (energy recovery ventilation system) brings in constant fresh air and efficiently improves the indoor air quality. Fire resistant building materials such as the metal roofing and compositional siding help to improve resilience against climate hazards.

### Innovation and Creativity / Aesthetics

Simple lines and exposed natural materials create a serene space that meets the needs of a changing family. The L-shaped design is oriented for indoor and outdoor privacy and the wide entry porch welcomes friends and family. The low-pitched shed roof helps the building blend into existing neighborhoods without visually dominating the primary residence.