

# Coast Salish Architecture: Shed Roof Plank Lelum



Figure 1: Artist's rendering of a typical Coast Salish shed roof plank house, Whu-mul-chit-tun (Capilano Village), opposite Stanley Park, circa 1780 (Aitken, 2009).

Coast Salish people have inhabited the Salish Sea region for thousands of years. They thrived in this area because of the abundance of food, and cedar trees for shelter. Shelters in this region were home to some of the largest structures in North America. For at least 3000 years before European contact (and into the late 1800's), the most common style of *lelum* or house was the shed-roof plank house with three distinct features:

- post and beam structural system
- long, rectangular floor plan
- low sloping shed roof



**Activity:** Look closely at Figure 1 and 3. What do you notice? What observations can you make?

| Observation                            | Inference  |
|--|--|
| houses look like they are made of wood | wood could be from a cedar tree in the nearby forest |

## Village Sites

There were several village sites along the coast of the Salish Sea, a region that extends from the north end of the Strait of Georgia to the south end of the Puget Sound.



Figure 2: Map of the Salish Sea, 2009 (Wallace).

The village sites were chosen because they were:

- close to fresh water
- even/flat terrain along the beach or at the mouth of a river
- near the edge of a forest for resources
- close to water for canoe launching
- close to food gathering locations: salmon, halibut, cod, berries, root vegetables (camas), seaweed, clams, mussels, and occasional deer or elk



Figure 3: Artist sketch of shed roof plank house, circa 1790 (Wallace).

Shed roof *lelum* were generally built close together and in one long row facing the water. Each house could have between 100-200 residents. If there was a large population and the terrain made it difficult for linear expansion, there would be a second row of plank houses. Sometimes, the shed roof houses were built end to end, creating one very long structure. This is where the term "long house" originated. These houses were permanent structures during winter months (November to early March) and were typically fully occupied. During the spring to summer months, cedar planks were removed and used for temporary structures located closer to food gathering sites.

## Western Red Cedar

All components of the shed plank *lelum* consisted of *x̣pey* (western red cedar), the tree of life. The Coast Salish people have great respect for the cedar tree as it plays a significant role in all parts of their culture. Before any part of the tree was used, permission was requested and gratitude for its gifts were given.



The western red cedar was ideal for plank houses because they have the following attributes:

- Uniform, straight grain, relatively free of knots
- Tall trunks with few branches
- Easy to split into planks
- Lightweight
- Resistant to rot and bugs
- Low density and coarse texture provided insulation
- Low rate of water absorption
- Long life span (up to 1000 years)
- Aromatic scent and attractive colour

### Inside a Shed Roof Lelum

A Shed Roof lelum was like a big apartment building, with many related families living together under one roof. Each family had it's own hearth and occupied their own section of the house, sometimes separated with mats or piles of storage boxes and baskets for privacy.

There was no chimney, planks directly above the hearth could be shifted to the side with a long pole in order to let smoke from the fire escape. For insulation, some sections of the wall planks were covered with mats. One main feature in the lelum was a wide platform that extended along the interior walls. The platform was used for sleeping at night and for tasks during the day. The structure of the interior was fully exposed and the rafters and poles were used to hang storage shelves.

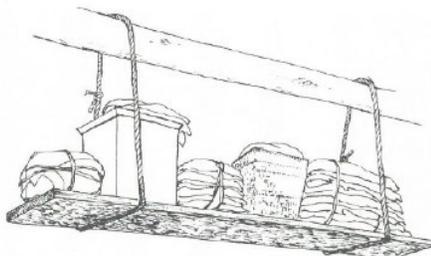


Figure 8: Plank shelf for storage (Stewart).

A shed roof lelum was very adaptable in size. It could be made larger or smaller depending on the the needs of the extended family living inside at the time. The large space inside could be transformed to accommodate public gatherings and ceremonies. In general, winter was a time that cultural traditions were passed down, important decisions were made, and celebrations with food, dancing and songs took place.

The lelum was more than a home, it was part of their lineage and identity, as well as the spiritual centre of family life.



Figure 9: Interior of Nootka House, John Weber, 1778 (Wallace)

The large interior provided a space large enough for daily tasks such as:

- processing food, primarily salmon that had to be dried and stored to last the winter
- mat and basket making
- bark shredding and weaving
- canoe and tool repair

### Shed Roof Style Lelum today

The shed roof lelum were the main architecture style used in the winter by the Coast Salish for more than 3000 years before European Contact. After the late 1800's, that abruptly changed when when new colonial laws prevented this way of living and forced Coast Salish people to adopt western ways of living in smaller single family homes.

Today many Coast Salish communities are revitalising the traditional architecture style. One example of merging modern building needs with the shed roof style can be seen in the new *Shq'apthut* (Gathering Place) building at Vancouver Island University.

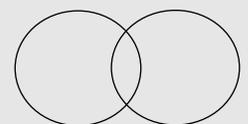


Figure 10: Interior of Sh'qapthut at VIU (indigenous.viu.ca)



**Activity:** How is the interior of the Shq'apthut building at VIU (above) similar or different than the traditional shed roof lelum (Figure 9 and 10)? Consider the features of the structure and how each structure is used.

Shq'apthut    Shed Roof Lelum



# Shed Roof Lelum Construction

The components of the shed roof lelum consisted of:

- posts, boulders & gravel
- beams & roof rafters
- poles, cedar withes (cords) & wall planks
- Roof planks

## 1 House Posts

The first step in construction was to place the large the posts at the corners of the building in large holes dug in the ground. These posts supported the loads from the roof cross beams. They were placed at intervals of approximately 14-16 ft. along the length of the structure. The posts at the front side of the structure were taller than the back side which created a slight slope. Once the posts were set, the hole was filled with boulders and gravel.

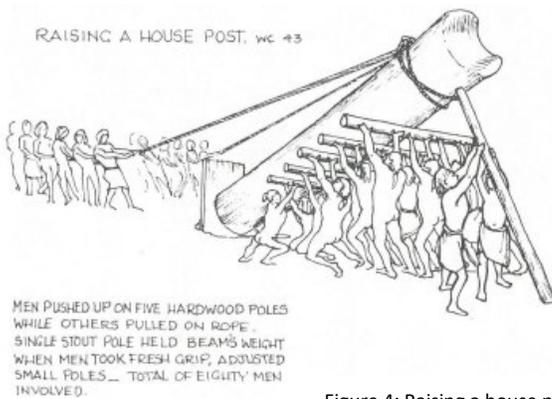


Figure 4: Raising a house post (Stewart).

## 2 Cross Beams and Roof Rafters

The next step was to install the large cross beams which were often 2 ft. in diameter and a span of 40-60 ft. The beams would sit in grooves carved into the posts running front to back, sloping downward slightly.

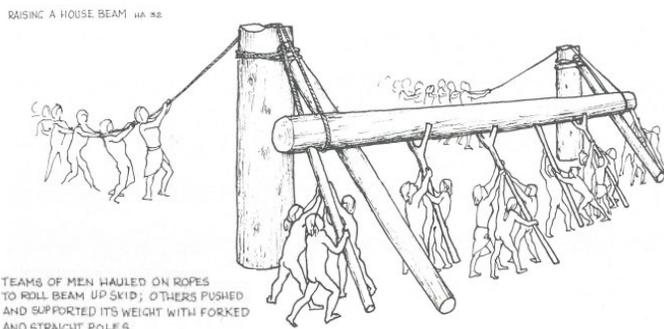


Figure 5: Raising a house beam (Stewart).

After the posts and beam were set, the roof rafters were installed. The roof rafters were set ontop of the large beams parrallel to the front of the building. These roof rafters helped transfer the weight of the roof laterally.

## 3 Walls

Next the walls were assembled. The walls were composed of the three parts:

- exterior poles
- interior poles
- large cedar planks

The cedar planks were rectangular in shape and were anywhere from 2.5 ft – 6 ft wide, and 20-40 ft long. The cedar planks were laid horizontally, starting at the bottom with a slight overlap to keep the rain out. They were fastened with a cedar withe looped around the exterior and interior poles, forming a cradle for the cedar plank to sit on. The interior pole was cut off at the ceiling, while the exterior pole would typically extend above the roof.

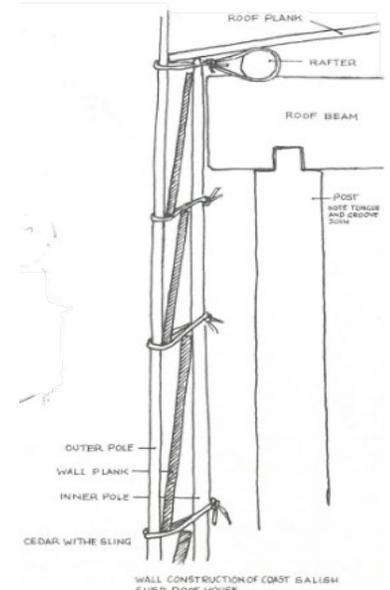
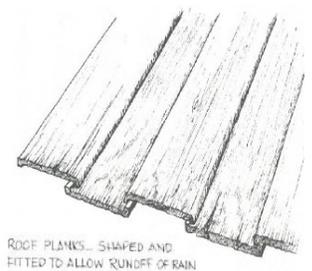


Figure 6: Wall construction (Stewart).

## 4 Roof Planks

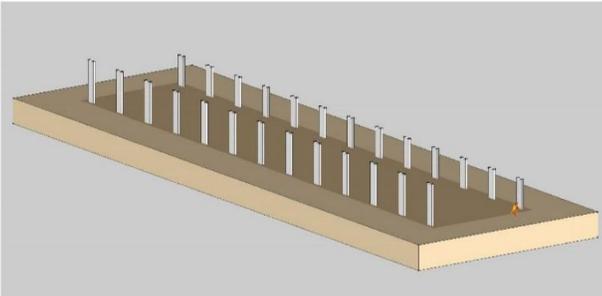
The installation of the roof planks completed the assembly of the plank house. They were similar to the wall planks, with the addition of grooved channels which guided the water from the roof to the ground. The planks were not fastened so they could be moved easily for sunlight and for smoke from house fires to escape. During storms, large boulders were placed on roof planks at intervals to secure them down.



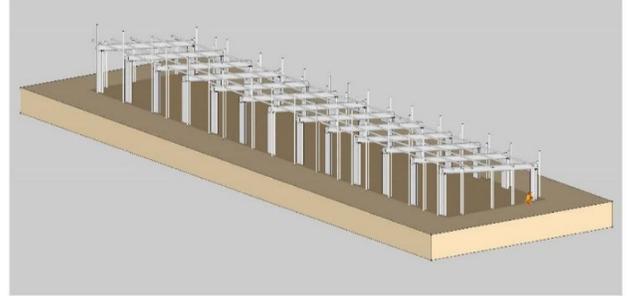
There were no windows in a plank house but light would come from moving roof planks or through the gaps of the wall planks. Doors were located on the long and short side of the house. They were rectangular in shape and made of cedar planks.

Figure 7: Roof planks (Stewart).

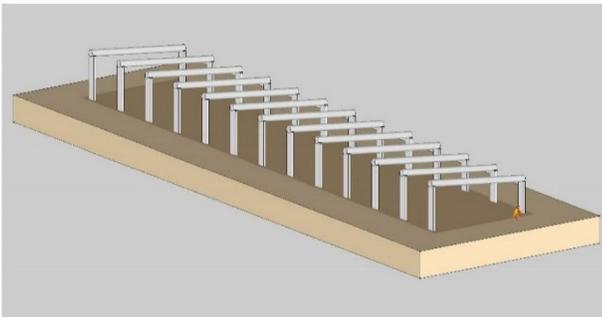
## Building a Shed Roof Lelum



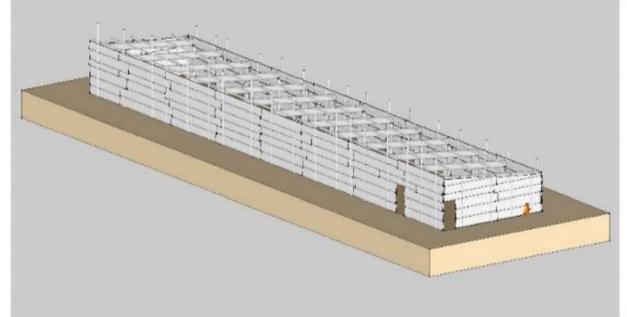
1. Placement of posts



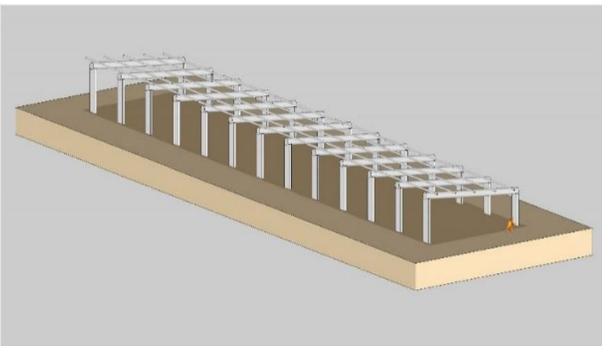
4. Installation of wall assembly



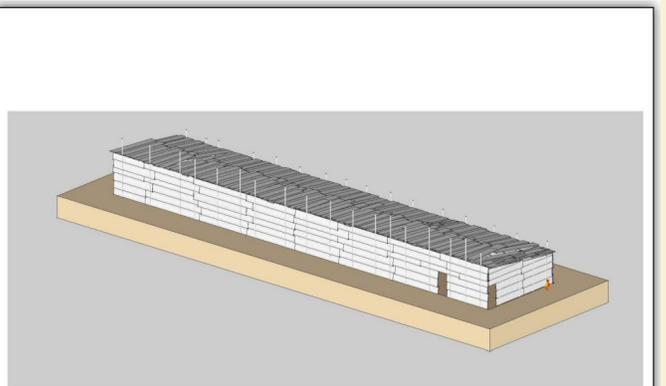
2. Installation of cross beams



5. Installation of Wall Planks



3. Installation of roof rafters



6. Installation of roof plank for completed structure

Figure 11: Building a Shed Roof House (Wallace)