



Your trusted partner for crafted timber work.

Cascade Cuts

WINTER 2017

Happy New Year! Read about a flowing roof in Eastern Washington and the marvels of kiln-dried timber.

[Visit our Site](#)

Undulating roof of the Elson Floyd Cultural Center

Standing at the main entry to the WSU Pullman Campus, the spectacular center will host scholars, lectures, meetings, and multicultural alumni events.

The center has four knowledge rooms, an open space for large events . . . and a commercial kitchen! Since food's a big part of culture, the kitchen will be integral to events.



CAD rendering of Floyd Cultural Center.
GGLO Design

Cascade Joinery worked with the engineers, architects, and General Contractor to enhance buildability in the design and specs for the timber roof system. Our crew cut every piece in the roof system on site, setting beams as we went. No two pieces are alike. The main arched glulams are either 6" x 30" or 8.75" x 36", made of naturally rot resistant Port Orford cedar. The largest pieces are 70' long and weigh over 6,000 pounds. The main beams are on 8' centers with 4" x 8" purlin beams spanning between them at approximately 4' on center.

The irregular fascia of Port Orford Cedar glulam is 3.125" x 18". Purlin pitch varied from piece to piece, and the purlin spacing varied in each bay. Fascia pieces were mapped to fit after the main beams were set. Our crew completed the roof structure on schedule and the project continues to move forward at a rapid pace. Look for the completed structure in mid-2017.

[See the timelapse video](#)

WHAT is kiln-dried timber?

The process of radio-frequency dehumidification kiln-drying is the only effective way to dry large dimension material. It works by creating a vacuum, then introducing energy in the form of radio frequency

waves. This causes the timber to warm and release moisture. Deliberate control of three variables-- atmospheric pressure, temperature, and relative humidity--create the conditions to achieve specific levels of dryness. The timber is stacked in chambers where the three variables are carefully controlled. We use wood that has been processed by radio frequency (RF) drying, which gives us moisture content of between 15% and 19%.



Loading timber into a kiln-drying chamber.

Maybe more important, **WHY kiln-dried timber?**

Two main reasons. First, in some cases design values from engineering require stable, predictable material with moisture content below 19%. Second, green timber shrinks approximately 10% as it dries in place, checking and moving unpredictably. All of the tightly fit joinery will open up unsightly gaps. The level of craftsmanship exercised in our shop requires a very predictable and dimensionally stable material to retain the high degree of fit and finish we receive; green wood cannot maintain this over time.

Finally, **WHEN kiln-dried timber?**

The kiln drying cycle itself is 5-7 days; some pieces go through the kiln twice if they don't shed enough moisture the first time. Our lead time--from when we place an order until we get it--is 8 weeks. That timeline consists of:

- at the mill, custom sawing oversize rough timber to tally
- shipping to the kiln
- sorting and packing the kiln charge
- kiln drying
- short rest period for stress relief
- resawing to finished size
- planing to final dimension
- shipping to our shop.

To allow for completion of shop drawings and fabrication, it's best to go to contract with us 12-16 weeks before you need the timber. There is no hurrying the process; we all want the most reliable, dimensionally true timber, and this is what it takes.

We require from buildings two kinds of goodness: first, the doing their practical duty well: then that they be graceful and pleasing in doing it.

--John Ruskin

www.cascadejoinery.com

Cascade Joinery | 360.527.0119

PO Box 5807 | Bellingham, WA 98227

John Miller

STAY CONNECTED:

