

# WOOD: LONG-LASTING PUBLIC WORKS BEAUTY AND PERFORMANCE



The taxpayers of Multnomah County, Oregon point with pride at their new 10,120 square foot fire station. They don't think twice about a fire house made of wood. The interesting part? Fire helped craft a structure of uncommon beauty and lasting resilience.

It's not often that firefighters eagerly bid to work in a fire station seared by flame. Yet that's exactly the case with a new fire station in rural Multnomah County, Oregon, just east of Portland.

Welcome to Fire Station 76.

The \$3.24 million facility is not only distinguished by exposed 27-foot tall glulam Tudor-style arches in the expansive apparatus bay, but also by a shou sugi ban-treated barn wood cladding as part of the living quarter's rain screen system.

#### **Code Compliant**

Complying with code, even Oregon's rigorous Structural Specialty Code for Essential Facilities proved routine, reports project architect Camilla Cok, AIA, of Hennebery Eddy Architects, an award-winning regional architectural firm based in Portland, Ore.

The design team made provision for increased load requirements expected of an essential facility to help ensure uninterrupted operation following a major seismic or weather event. The glulam Tudor arches in the bay and multiple plywood shearwalls in the living quarters serve as an efficient lateral-force resisting system. "The decision to go with wood," Cok says, "helped achieve a resilient structure designed for durability, redundancy, and recovery."

#### **Firefighter Friendly**

Western red cedar marks the fire station interior, from the living quarters for the crew of four full-time firefighters to the tongue-and-groove cedar decking vault over the apparatus bay. The glulam arches in the bay serve as part of the primary structural frame and were designed to resist vertical and lateral loads as the area's tough building code requires.



The salvaged timber was milled to board and batten siding, then charred and sealed using a traditional Japanese burning technique, shou sugi ban. The burn adds a layer of carbon which removes water from the wood. The carbon also protects against mold, rot, and insects, as well as fire.

The firefighters' reaction? They love the exposed wood ceilings and walls. The overall effect is clean and natural, complementing Oregon's woodland splendor. The apparatus bay receives especially high marks for the durability and "solidness" of the large structural members, the plywood walls, and the wood finishing and cabinetry. The contrast of the black charred wood exterior with the interior's warm wood tones is also singled-out.

"The owner understood they were making legacy decisions. The vernacular of this area is farming, working with nature. It makes sense on so many levels to honor that spirit with the natural warmth and beauty of wood," explains Michelle Vo, AIA and principal-in-charge for Hennebery Eddy.

#### Maintenance-Free

A public building made of wood is no surprise to Oregonians. It's a common sight throughout the Beaver State. But still some may wonder, "Why build a firehouse with charred wood?" Architect Cok has an answer.

"We looked at different cladding materials including metal siding and a polycarbonate to reflect the area's many greenhouses," Cok recalls.



The glulam arches serve as part of the primary structural frame and were designed to resist vertical and lateral loads, with additional structural factors of safety required for Essential Facilities under the Oregon Structural Specialty Code (Building Code).

"The question with exterior wood is always maintenance. We were aware of the shou sugi ban treatment. The more we investigated, the more we realized two things: one, the hardened carbonized layer solves the maintenance question, and two, it's beautiful. Charred wood is nearly maintenance-free," Cok says.

Vo adds, "We liked the idea of bringing something forward that has been used for centuries. This isn't bleeding edge innovation. It's tried and true. The innovation was using it so expressively in a prominent public building."

#### Coveted Assignment

Fire Station 76 delivered just over a year ago. Cok participated in the one-year walk-through with fire district officials recently. "The new fire district lieutenant was with us. He talked openly about how much they love working in the new facility," Cok says. As for the district's firefighters, they're busy pulling straws to see who is lucky enough to work in Fire Station 76.



The living quarters are constructed with open web trusses and I-joists at the roof, and conventional wood stud walls including plywood shearwalls as the lateral-force resisting system. Western red cedar-clad porches carve into the daylight-filled living quarters.

**Owner:** Multnomah County Rural Fire Protection District No. 10

**Architect:** Hennebery Eddy Architects

**General Contractor:** Bremik Construction

**Structural Engineer:** Nishkian Dean Structural Engineers

**Photographer:** Josh Partee, Josh Partee Photography

**Location:** 30300 SE Dodge Park Boulevard, Gresham, Oregon

**Year Completed:** 2015

#### Awards

Top Projects, Public Service Category, DJC Oregon, 2016

Wood Design Award, Institutional Design, US WoodWorks, 2015

Wood Design and Building Award, Canadian Wood Council, 2015

Design Award, Portland Chapter AIA, 2015 (Merit Award, Public Projects)

Design Award, Portland Chapter AIA, 2013 (Unbuilt Award)

Architizer A+ Awards Finalist, 2016

(Institutional—Government & Municipal Buildings)