ACE students create prototype bench for the new Sellwood Bridge

Four recent high school graduates presented a prototype bench for the new Sellwood Bridge to the Multnomah County Board of Commissioners. Back row (from left to right): Taylor Lehma, Jesse Martinez, Ethan Wells and Rebekah Fast. Front row (from left to right): Commissioners Jules Bailey, Judy Shiprack, Deborah Kafoury, Diane McKeel and Loretta Smith. (Sara DiNatale/The Oregonian)

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SELLWOOD BRIDGE

- ACE students create prototype bench for the new Sellwood Bridge
- Girder installation at Portland's new Sellwood Bridge finishes ahead of schedule
- Sellwood bridge construction: Steel arches built in Vancouver take shape (photos)
- Sellwood Bridge: After 3-day closure, Portland span reopens early
- First girders placed on east side of Portland's new Sellwood Bridge (Photos)
Four new high school graduates are eager to be part of Portland history. Their mark? Four benches that are set to outfit the new Sellwood Bridge.

Ethan Wells, Taylor Lehman, Rebekah Fast and Jesse Martinez all just completed ACE Academy, a charter school in Southeast Portland where they built a prototype of the benches. They presented it on Tuesday to the Board of Commissioners for Multnomah County, which owns the Sellwood span.

"We get to walk by the bridge and say we're a part of it," said Fast, who will be attending Mt. Hood Community College for studies in engineering in the fall.

After a year of labor, the students were happy to show off what they constructed. The bench's slick design resembles the steel deck arches of the new Sellwood Bridge, which crosses the Williamette River and will be completed in 2016. A new group of ACE students next school year will use their predecessors' design to build the benches, which will sit on the new bridge's overlooks.

After about 220 hours of research, 40 hours working on the wood and 25 hours working on the steel, the designers from ACE -- which stands for architecture, construction and engineering -- had a completed prototype to show off to the board.

"It's nice not see it in pieces on the floor," Wells said with a smile. "People can actually use it now."

He was the head of the construction team for the prototype.

Wells, clad in a nice suit and clearly proud of his work, explained to the board what went into getting the fives slabs of wood that make the components of a progressing arch fit together just right.

Wells and the team used a 10-foot jig to help set the slabs in place. They arched each piece at 34 degrees and cut the wood on angle with a band saw. The group reset the jig for each piece of wood to ensure the slabs would fit together seamlessly.

Wells, who has enlisted in the Navy, said getting all the pieces to line up properly was the hardest part of the project.

"I'm really in awe," said County Commissioner Judy Shiprack, admiring the structure's construction. Commissioner Loretta Smith asked if the kids were sure they weren't in college already.

The students were given a design for a bench, but they modified it to be more cost effective, easier to build and a better complement to the construction of the bridge.

For Fast, the biggest challenge was reaching out to vendors and talking to professionals to get quotes. The group also performed an analysis to figure out how much the bench materials and labor would cost in a real-world setting. The wood, for example, would cost about $5,000.

Fast said the school selects students who are the best fit for working on the project. Wells said next year's group will be allowed to slightly modify the current design if needed.

"I can't wait to see them out there in real time," said Commissioner Diane McKeel.

-- Sara DiNatale