

Bridge project brightens welders' future

STORY AND PHOTO BY JEANETTE WRIGHT
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As the restoration and re-development of Clackamas Community College's Environmental Learning Center (ELC) nears an end, CCC students are given the opportunity to not only participate, but also construct some of the new fixtures.

Seven new bridges will be installed over the new lagoon at the ELC as part of the planned restoration, and Matt Franke and Curtis Reinholdt, two students from CCC's welding classes, are helping build them.

Franke and Reinholdt are both nearly done completing degrees in Welding Technology.

Bruce Mulligan, a CCC welding instructor, was approached by Bob Cochran, CCC's Dean of Campus Services, with the project, to provide an opportunity for students to fulfill a graduation requirement.

88 hours of Cooperative Work Experience (CWE) is required for graduation, and that can be a huge hindrance to students looking to complete their degree, Mulligan said.

Mulligan was a project manager, steel fabricator and steel inspector for many years, which gives him the perfect perspective on overseeing projects like this.

"Bruce probably has more welding knowledge than I think I will ever be able to put in my head, he's like an encyclopedia," Reinholdt said.

To work on this project, the students needed to already have state-approved welding certificates, so that narrowed the pool of possible participants, but

Mulligan didn't have a problem choosing.

"I just chose two people and approached them and offered them a special deal for their Fabrication Level 3 class," Mulligan said.

Normally, students in the level 3 class would have to design a project themselves, get it approved, and provide the materials themselves. On this project, all they have to do is the actual work.

"All they have to do is come in here and weld [the bridges], so it was a great deal for them. Plus, they're getting massive amounts of experience on a real industrial job," Mulligan said.

Mulligan contacted a steel fabrication company, Fought & Company Inc., to provide the steel.

"This is kind of unusual for them, they usually do the whole job, and they even do the installations," Mulligan said. "But they were willing to work with us, because it was going to help students out."

Franke and Reinholdt are not only getting practice working on a real project, but also practical work-environment learning.

A professional inspector from Mayes Testing came to the class and talked for an hour about what inspecting is like. The bridge parts are receiving inspections along the development process, as well.

The current progress of the project was inspected last Wednesday, and even though they didn't pass, Reinholdt is not discouraged.

"[The inspector is] definitely being a little bit more nitpicky on certain things," Reinholdt said, "but this being the first real-world project we've handled, we were kinda expecting some mishaps and some defects, so we'd have to go back and correct."

Welding sheets of metal together is just one part of the project. The students also have to create some of the tools needed to fit the pieces of metal together before welding.

15-20 hours have already been spent on the bridges by Franke and Reinholdt, Mulligan said.

Reinholdt and Franke are both very excited to see the project unfold.

"You kinda see it come together form just a big hunk of steel, to once it has all the clips on it...and then once it gets all bolted together it'll actually be a bridge, not just welding pieces of metal together and throwing them in the scrap bin," Franke said.

The project itself provides good practical experience, working from blueprints and making sure all the measurements are correct.

"It's a real-world simulation," Reinholdt said. "It's what you're gonna get when you go out in the field, you get to a shop somewhere, and y'know, your boss hands you the blueprints and goes 'all right, go ahead and build this, and build it to what the blueprint says'. It's a really great hands-on experience for me."

The bridges are made of Cor-ten steel, a special weathering steel made to last for a long time. The steel rusts to a certain point, and then the erosion stops. This cuts down on upkeep issues.

"Instead of painting them, and having to do, like, every-five-year maintenance on paint, we decided to go with the more expensive steel and just put 'em up and they should be there 50-100 years without coming down due to rust," Mulligan said.

Hopefully the bridges will last a while and get lots of public use.

"When Bruce first brought it up to me, the first thought that ran through my head was 'wow, that's gonna be a bridge that's up there 'til they literally tear that school down,'" Reinholdt said. "I thought that it was pretty frikkin' cool to think about, that all my friends, and all my family and stuff are gonna be able to see and walk across something that I helped construct from just a bunch of random metal parts."

Presenting an opportunity for students to thrive while helping other students and the college are main benefits of the project.

"It's lot more fun to do [the project] than just kinda the same repetitive stuff you do to learn the skill, 'til finally you get to break out and use it in a real-world setting, other than just sitting in a little booth, welding over and over and over and over, you get to move around and adapt to the situation," Franke said. "Experience beats knowledge any day."

The reconstruction of the Environmental Learning Center is slated to finish this spring.



Matt Franke, a welding instructor, works on a project on February 28.