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Ironworkers fortify Tacoma's century-old Washington Building — hot rivets not needed

- ***Superior Steel & Ironworkers is performing the iron work that is part of a $60 million renovation.***

By SAM BENNETT
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Photo courtesy of Superior Steel & Ironworkers [enlarge]

Crews installed fluid viscous dampers and structural cross braces inside the Washington Building.

One hundred years ago, “cowboys” rode the sky over downtown Tacoma.

As the 18-story Washington Building rose in Tacoma in the early 1920s, ironworkers who risked life and limb gained the nickname “cowboys of the sky.”

An ongoing renovation of the building unveils the perils and beauty of the craftsmanship that went into what was the tallest building in Tacoma until the 1970s, according to Pat Tremaine of Superior Steel & Ironworkers.

Her firm is performing the iron work that is part of a $60 million renovation, including seismic upgrades and the installation of new structural cross braces and fluid viscous dampers. Superior Steel & Ironworkers has completed the bulk of the seismic retrofit and is preparing to install a major stairway this month. The general contractor is Venture General Contracting.

“It's been there 100 years and it'll be there 100 more,” said Tremaine, marketing associate with Superior Steel & Ironworkers. “The iron-framed building was an example of the modern age, as we were moving into skyscrapers and big structures built by man. Steel enabled that and ironworkers made it happen.”

During its original construction, the Washington Building showcased innovative new techniques to move the massive beams, as well as the skill set and knowledge to erect structures higher than before, she said.

Superior Steel & Ironworkers' main areas of work encompass a seismic retrofit that included assembling and installing structural headers and crossbeams for exterior wall stability; installing 14 fluid viscous dampers, which manage the vibrational momentum on the structure from wind loads and seismic activity; and installation of a major stairway linking floors 1 to 18. Superior Steel & Ironworkers also fabricated and installed mounts to support the personnel lift on the exterior of the building used by all trades on the job.

“The history of steel at this location is one close to our ironworker's hearts,” said Tremaine. “Original steel delivery in 1920 was an event noted in the Tacoma Daily Ledger, as immense 20-ton steel girders were transported into town from Philadelphia. The beams were so large that it was necessary to cut them in half to be transported via 79 carloads. Once in town, it took a week to move the steel girders up the hill to the construction site.”

One of the challenges 100 years ago, she said, was movement of the materials. The 20-ton beams came from Philadelphia by train and it took a week to get them from the offloading area to the construction site.

Photo from Unico Properties [enlarge]

Unico Properties is restoring the building and converting it into apartments.

Tremaine said the dangerous work that crews did on the Washington Building during its construction has led to safer working conditions for ironworkers today.

Ironworkers used steel rivets heated to about 1,000 degrees during the building's construction in the '20s. She said the work required teams of four ironworkers to do the job.

The teams included a heater, who heated the steel rivets and then threw them to a catcher. The catcher passed the rivets to the bucker upper, Tremaine said. The bucker upper then placed the hot rivet using steel tongs into holes and held the head, so the riveter could mushroom the end on the hot rivet.

The work was demanding and the ironworkers would rotate roles, Tremaine said.

“Today, it takes one or two ironworkers to put a bolt in the hole and then torque it to the proper tension using a 110-volt torque control gun that automatically controls the tension and torque,” she said. “When today's ironworkers complain about how hot it is, the old-timers like to remind them that ‘at least you're not dealing with hot rivets.' Working on the Washington Building helps the younger generations of ironworkers to really appreciate how hard and dangerous their predecessors' lives must have been.”

Moving material around was also far more difficult 100 years ago, she added. “Originally, a guy derrick was used for erection of the steel,” she said. “It took many more people to operate that and a contrast to today's mechanized cranes. Communication and logistics were much more difficult. Today, the (Washington) Building is more finished and there is a roof in place, which means that there is no way a crane can be used to place the new steel. The steel needs to be brought in through windows or hoisted up through existing shafts such as the elevators. This requires much more hands-on type work and hand-rigging with come-a-longs and portable electric winches.”

Recognizing the challenges that construction crews overcame 100 years ago is critical for today's ironworkers.

“If we do not appreciate the achievements of those who came before us, we will soon find ourselves lost and without meaning or purpose,” Tremaine said. “By being ironworkers and by honoring those who came before and what they built, we have a connection that spans the past, the present and the future. It is the closest thing that any of us will have to achieving immortality. It is like honoring your great grandparents, parents and then leaving children of your own here on earth after you pass. It is proof that you existed and that you made a difference.”