COMPLETED CAMPBELL HOUSE REROOF.

Photo courtesy of Burton Construction, Inc.

Campbell House

Historic Cedar Shingle Reroof in Spokane, Washington

by Lynne Christensen, director of operations, Cedar Shake & Shingle Bureau

At the end of a majestic tree-lined residential street in Spokane, Washington, stands Campbell House: a mining magnate's family home and a mansion that does justice to the beauty of Certigrade® cedar shingles. This historic home and accompanying carriage house are listed on the United States National Register of Historic Places, owned by the State of Washington, and operated by the Eastern Washington State Historical Society (EWSHS). Both buildings were reroofed in the summer of 2016 and the Cedar Shake and Shingle Bureau (CSSB) was part of the project right from the start.

Family patriarch Amasa Campbell made his fortune in the late 1890s by owning a string of successful mines in the Wallace, Idaho, area. Being a mine owner in the silver capital of the world had its perks. In 1898, Campbell's success allowed him to build his mansion in Spokane, about 80 miles from Wallace. In the late 1890s, Spokane was an up-and-coming city and a regional trade center for the burgeoning timber, mining, agricultural, and railroad industries. The stock exchange was located in Spokane, and it was a much more cultured, urban area than the rough-and-tumble towns where the mines were located. Campbell's wife, Grace, was a steady com-

COACHMAN JOSEPH GLADDING & CARRIAGE, C. 1898-1905.

Photo courtesy of Northwest Museum of Arts & Culture/EWSHS.

Photo courtesy of Tony Hyatt, Cedar Shake & Shingle Bureau.

REROOFING THE CARRIAGE HOUSE.

panion at his side in elegant society and their only child, Helen, was born in 1892.

The last time that the Tudor Revival-style Campbell House and its carriage house had been reroofed was in 1991. A 2015 roof assessment report, written by BOLA Architecture + Planning of Seattle, Washington, recommended replacement with 16" Fivex Certigrade cedar shingles to match the existing size and exposure. After examining the roof via scissor lift, it was noted that debris had built up in keyways and at the first course, reducing the lifespan of the roofs. Observations from the attic spaces revealed solid board sheathing on the main house, and skip sheathing on the carriage house, with insulation in the rafter spaces. Both structures needed better ventilation systems to improve air flow. Matt Hamel, AIA, LEED® AP BD+C, associate with BOLA Architecture + Planning, noted that the firm's recommendations "tried to keep as close to the historic details and configurations as possible." Hamel contacted Tony Bonura, CSSB district manager, Northeast, for technical assistance with this project.

After approval for funding from the state and a formal public bid process, Burton Construction, Inc., of Spokane was selected as the general contractor and All Surface Roofing & Waterproofing, Inc., also of Spokane, as the roofing contractor. The main house required 85 squares and the carriage house needed 60 squares of product. CSSB member-produced fire-retardant Class C treated Certigrade Shingles were specified and installed. The project also included continuous fire-retardant treated ridge boards as opposed to pre-fabricated ridge material. "Given the listing on the historic register, and diligent restoration efforts to date," Marsha Rooney, senior curator of history, Northwest Museum of Arts and Culture in Spokane, notes, "Only cedar would fully realize the gem we have."

The existing roofs had two distinct substrate systems: solid sheathing with roofing felt at the main house, and skip sheathing with no felt at the carriage house, which resulted in more deterioration and cupping on the unvented main house. The 2016 reroof project incorporated a non-permeable membrane protection at the eaves, valleys, rakes, and sidewalls. Cedar Breather® continuous ventilation product and Ridge Vent® materials were installed for ventilation purposes. Double-coated copper flashings were used throughout, making for an elegant finishing touch at the multitude of dormer valleys, ridges, and chimney flashings. Wider valleys were specified for the 1991 and 2016 reroofing jobs, as the 1898 valley widths were only 2" on either side, making for debris-clogging conditions. Other specially-made copper flashing components and fully-soldered joints were critical to the finished work.

An added bonus for the project, and the industry as a whole, is that much of cedar shake and shingle fiber supply comes from salvage wood that would otherwise be left

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Photo courtesy of Northwest Museum of Arts & Culture.

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on the forest floor. Environmentally renewable, wood roofs do not deplete earth's resources like other materials mined or pumped from the ground; the industry replants and trees regrow for future generations. The museum expects a good 30-year life from its new roofs. Historic trim is maintained in a sustainable fashion, embodying and recouping energy when replacement isn't necessary. The sustainability of the roofs is seen in their longevity and durability. As Hamel stated, "You don't put something back to fail."

The reroofing job began in June 2016. Darrell Kidwell, VP with All Surface Roofing & Waterproofing, Inc., noted, "As is typical with old buildings, there were some additional sealant and plaster deterioration issues." Vertical wood trim deterioration was also discovered and repaired with epoxy wood restoration products and new wood was used to match the existing wood where elements were beyond repair. Local craftsman Joe Mitchell of Inland Millworks, Spokane Valley, Washington, met the craftsmanship challenge, creating new trim to match the 1898 scalloped surface. One final challenge was getting the special board-length ridge caps fire-retardant treated to match the rest of the roof.

Public tours of the buildings continued throughout the reroof project, with safety being paramount for crew, staff, and visitors at all times. Scaffolding was used to catch debris and protect foundation garden plantings. Not only did the roofing crew work around public tours, the job site itself made for some tight maneuvering of equipment. The buildings sit atop a ravine cliff, so the only access road was at the front and sides. Not much space was available for large equipment, and it was definitely a creative challenge to get the jobsite trailer, equipment, and product in place.

It's fitting that after the Cedar Shake and Shingle Bureau celebrates its 100th birthday, a new case study tells the story of Campbell House, operated by a museum celebrating its own centennial in 2016. This project is very special in that so many of the visitors, and even roofing crew team members, remember touring Campbell House during elementary school. This has gained a lot of local pride in carrying on the property's legacy for future generations. Everyone is encouraged to see the precious preservation efforts at work. Today, Rooney knows the fourth-generation Campbells and the public are very supportive of the museum's efforts, which are slated to include exterior painting, sandstone, and leaded glass window restoration as the next big projects. One can only wonder what treasures Campbell House will hold within its walls in another 100 years.