Even “simple” projects are more complex than they seem, especially when you’re replacing a 110-year-old historic truss in Eastern Oregon. This project proves that it is possible to replace an out-of-date structure with a new one that pays homage to the character and charm of the original while bringing it in line with modern standards, all while enhancing livibility for everyone around it.
This project is a modern feat of successful engineering. It combines 200 years of history, six brand-new bridges, two accelerated construction seasons, and a handful of public agencies, into one complex project that will keep Astoria’s historic waterfront, and its signature trolley car, running smoothly for decades to come.
Barbara Walker Crossing stands as Portland’s first ever crowdfunded bridge and provides a scenic and safe passage for over 2,000 daily hikers in Portland’s Forest Park.
Gideon Overcrossing provides a much-needed grade-separated pedestrian and bicycle crossing over light and heavy rail to facilitate safe travel and connect southeast Portland neighborhoods. This new Portland icon promotes cost-efficient sustainability and incorporates a world-class wheel gutter to assist cyclists with transporting their bikes to and from the bridge deck.
Runway 13R-31L is the main runway at HIO at 6,600 feet in length and serves a number of key regional stakeholders and tenants. The rehabilitation of the runway pavement was essential to maintaining a safe landing and take-off surface for all users for many years to come.
The design of this new scenic bike/ped trail retains the historic character of the original Columbia River Highway, while incorporating modern technologies and blending with the natural environment, opening access to this historic area for active transportation.
The number one factor contributing to the success of this project is the highly-coordinated communication among the team that created the ability to collaborate, problem-solve, and create solutions to deliver this highly-complex bridge repair project located on a critical vehicle and marine travel route.
For growing communities with growing essential water needs the WTP expansion provides uninterrupted water service for nearly 400,000 people, now, after a seismic event, and for generations to come!
This project showed innovation and adaptivity to overcome a variety of above ground and subsurface challenges both during design and construction to realize an attractive, alternative mode transportation corridor for the City of Milwaukie.
The coastal location of the structure generated many challenges for the design team, including severe susceptibility to earthquake- and tsunami-related damage. To overcome these challenges, this unique structure was designed and built using innovative architectural and engineering practice to serve as one of the first vertical tsunami evacuation sites in the United States and first of its kind in Oregon. The research facility is certified as a vertical evacuation structure designed to withstand a magnitude 9.0 earthquake and XXL tsunami (the largest tsunami scenario as defined by Oregon Department of Geology and Mineral Industries). Due to limitations in the design code at the time, the project team went above and beyond to design a structure that could withstand a tsunami or earthquake event, serve as an evacuation location for more than 900 people, and be operational for the community post-event.

The team designed the building to be supported by shallow foundations with uplift anchors bearing on a grid of overlapping Deep Soil Mixing columns.

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"The collaboration, including participation in a peer review process with national and internationally respected professionals, and creativity the design team brought to the project is a model for the industry."

- Len Fuhm | OSU Director Project Delivery -

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The project stands as an example of what successful partnerships—such as the one between AKS, the Port of Kalama, local jurisdictions, consultants, and the community—can achieve. It kicks off a substantial boost to Kalama’s economy and is an exemplary example of environmentally-responsible engineering design that showcases a community’s natural characteristics.
Sunrise Water Authority, RH2, and Shannon & Wilson, collaborated to develop cost-effective solutions to a challenging and constrained site, ultimately resulting in a critical piece of infrastructure in Reservoir 11 that increases the reliability of the Sunrise Water Authority system and provides a park-like setting for the community to enjoy.
GRI conducted a pavement evaluation at Port of Vancouver’s Terminal 2 to develop rehabilitation and reconstruction recommendations for a 6.5-acre site. GRI recommended using full-depth reclamation (FDR) construction technique in the areas requiring reconstruction. This approach allowed the Port to build a sustainable and green project by recycling all the old asphalt, repurpose the existing aggregate base and subgrade materials by stabilizing them in-place with cement, and eliminating the need to haul contaminated materials to the landfill.
The success of the Vancouver Waterfront Development is the result of a great relationship between a creative and resourceful design team, enthusiastic developer and resourceful contractor who collectively overcame challenging site conditions and multiple obstacles to create a world class development on reclaimed industrial site overlooking the mighty Columbia River.
HHPR improved multi-modal safety at the complex eight-leg intersection of West Burnside Street and 18th and 19th Avenues with the first partially protected intersection in Portland, and the first partially protected island in the Pacific Northwest.
The one thing you should know about this project is thermal forces are unyielding and powerful and should never be overlooked in design.

The Willamette Falls Fishway provides upstream migration of anadromous fish in the Willamette River Basin. Originally carved from rock nearly 140 years ago, the modern successor was completed in 1971 and is operated by the Oregon Department of Fish and Wildlife (ODFW). Ongoing stability issues had left Fishway No. 1 in critical need of repairs and in danger of failure. Such a failure would keep any fish from using the ladder and would be catastrophic to all anadromous fishes in the Willamette Valley basin – particularly threatened species.

ODFW selected Peterson Structural Engineers (PSE) to provide structural engineering services for the evaluation, design and repair of Fishway No. 1. Between 2009 and 2012 the Fishway was instrumented and data recorders tracked the movements of the structure through changing river and climatic conditions. Once the causal actions for the damage were determined, PSE proposed a repair plan combining a series of foundation support elements plus thermal force return tension rods to stabilize the structure and arrest the thermal actions causing damage to the structure. PSE then provided the engineering designs for the proposed mitigation and continued to provide services through the completion of the Fishway No. 1 repairs.

Challenging conditions included the necessary shutdown of all the fish ladders in the system during repairs. With the in-water work period for this section of the Willamette River is July 1 – October 21, ODFW targeted a shorter work window to have minimal impact on sensitive fish populations. The Fishway was closed on August 27, ensuring the successful upstream migration of hatchery summer steelhead. The newly repaired Fishway reopened in early October; as thousands of coho and Chinook start their fall migration.
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