Seattle Daily Journal of Commerce

2025 ACEC

ENGINEERING EXCELLENCE AWARDS

February 10, 2025

PLATINUM AWARD STRUCTURAL SYSTEMS

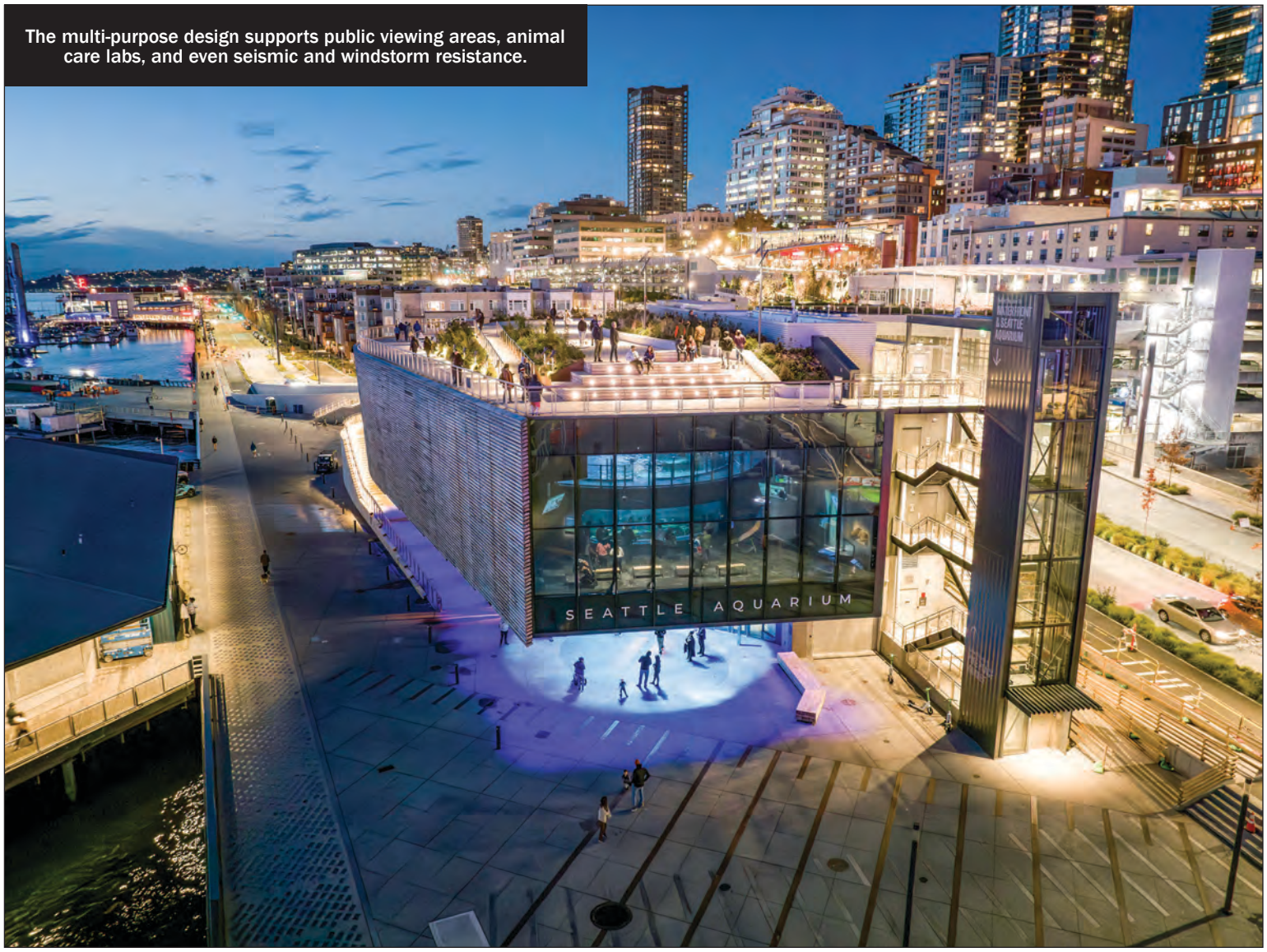
Magnusson Klemencic Associates
Seattle Aquarium's Ocean Pavilion
LMN Architects

The Seattle Aquarium's Ocean Pavilion has set a new benchmark in aquarium design with its innovative approach to architecture and engineering. At the heart of this groundbreaking project is the "Supertank," a free-form concrete marvel that holds over four million pounds (500,000 gallons) of water. Not only is it an aquatic habitat, but it also plays a crucial role in the pavilion's structural integrity, visitor experience and environmental resilience.

This multi-purpose design supports public viewing areas, animal care labs, and even seismic and windstorm resistance. The tank, which is integrated into the fabric of the building, addresses the site's challenging conditions, including soft, liquefiable soil, and creates an accessible link between Pike Place Market and the Seattle waterfront. The Ocean Pavilion is not just a tank housed within a structure — it is the structure itself.

A collaboration between Magnusson Klemencic Associates (MKA) and LMN Architects brought this vision to life, featuring a cantilevered design where the Supertank extends 50 feet, becoming a key structural element that supports over 2,000 tons of weight. The tank's south-facing side, spanning over 100 feet, uses its own weight to provide stability and balance, making it a feat of engineering. The complex geometry of the Supertank was meticulously crafted to suit the needs of various marine species, with hideaways and ample swimming space.

The construction of this free-form structure was an extraordinary challenge. The constantly changing curvature required more than three times the typical amount of rebar used in earthquake-resistant high-rise buildings in Seattle. To meet these demands, cutting-edge 3D modeling, data-driven formwork, a specialized concrete mix and a continuous 23-hour concrete pour were employed to ensure precision and durability.



The multi-purpose design supports public viewing areas, animal care labs, and even seismic and windstorm resistance.

PHOTO FROM ACEC WASHINGTON

ON THE COVER

Ocean Pavilion's "Supertank" plays a crucial role in the project's structural integrity, visitor experience and environmental resilience.
PHOTO FROM ACEC WASHINGTON

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NATIONAL FINALISTS

PLATINUM AWARD

STRUCTURAL SYSTEMS
Firm: Magnusson Klemencic Associates
Project: Seattle Aquarium's Ocean Pavillion
Client: LMN Architects

GOLD AWARDS

STRUCTURAL SYSTEMS
Firm: HDR
Project: Marion Street Pedestrian Bridge Replacement
Client: Seattle Department of Transportation

ENVIRONMENTAL
Firm: HDR
Project: Native Salmonid Conservation Facility
Client: Seattle City Light

WASTE AND STORM WATER
Firm: HDR
Project: Fry Creek Pump Station
Client: City of Aberdeen

WATER RESOURCES
Firm: KPFF Consulting Engineers
Project: Harbor Island Habitat Restoration
Client: Vigor Industrial

TRANSPORTATION
Firm: Shannon & Wilson | WSP
Project: Index-Galena Road Flood Repair Project
Client: Snohomish County

TRANSPORTATION
Firm: Jacobs
Project: Seattle Waterfront Overlook Walk
Client: City of Seattle - Office of the Waterfront and Civic Projects

SPECIAL PROJECTS
Firm: Shannon & Wilson
Project: Glennallen Response Base Hill Slope Stabilization
Client: Alyeska Pipeline Service Company

ENERGY
Firm: Brown and Caldwell
Project: West Point Power Quality Improvements
Client: King County

SILVER AWARDS

STRUCTURAL SYSTEMS
Firm: Cary Kopczynski & Company
Project: The Ayer
Client: Holland Partner Group

ENVIRONMENTAL
Firm: Shannon & Wilson
Project: 8801 East Marginal Way South - Remediation and Habitat Creation
Client: PACCAR Inc

WATER RESOURCES
Firm: HDR
Project: Nelson Dam Removal
Client: City of Yakima

TRANSPORTATION
Firm: HNTB
Project: The Lynnwood Link Extension
Client: Sound Transit

BEST IN STATE

GOLD AWARDS

Future Value to the Engineering Profession
Firm: WSP USA
Project: East Marginal Way Water Design
Client: Seattle Department of Transportation

Complexity
Firm: Stantec
Project: Raging River Bridge (I-90, SR 18I/C to Deep Creek)
Client: Aecon/ Washington State Department of Transportation

Exceeding Client/Owner Expectations
Firm: Peterson Structural Engineers
Project: Fishtrap Creek Suspension Bridge
Client: Reichhardt & Ebe Engineering/City of Lynden

Original or Innovative Application of New and Existing Techniques
Firm: WSP
Project: Multimodal Terminal at Colman Dock
Client: Washington State Ferries

Social, Economic and Sustainable Design Considerations
Firm: DLR Group
Project: Green Hill School Wellness & Recreation Center
Client: Washington State Department of Children, Youth and Families

ENGINEER OF THE YEAR

Ralph Boirum, HWA Geosciences

MKA WINS TOP AWARD FOR SEATTLE AQUARIUM'S OCEAN PAVILION

Seattle-based Magnusson Klemencic Associates is the top winner in the American Council of Engineering Companies of Washington's annual Engineering Excellence Awards program. The firm took the 2025 Platinum Award for the Seattle Aquarium's Ocean Pavilion on the revamped Seattle waterfront.

Sponsored by ACEC's Washington state chapter, the awards program recognizes projects that represent a wide range of engineering achievements and demonstrate the highest degree of skill and ingenuity.

Twenty-six projects, local and national, were honored in this year's program, as well as the Engineer of the Year. Local awards were given at three levels: gold, silver and bronze. The top national awards will go on to compete on May 20 in the ACEC National Engineering Excellence Awards at the Grand Hyatt in Washington, D.C.

Project entries were evaluated by a six-judge panel: Robert Axley, president emeritus, Wood Harbinger; Steve Johnston, engineer emeritus, Landau Associates; Supriya Kelkar, deputy executive project director, Sound Transit; Lisa Lannigan, editor, Daily Journal of Commerce; Kathy Robertson, engineer emeritus, Pickets Engineering; Larry Swartz, engineer emeritus, P2S.

ACEC Washington is a professional trade association representing consulting engineering, land surveying and affiliated scientific and planning firms statewide.

SILVER AWARDS

Complexity
Firm: Osborn Consulting
Project: Anderson Creek Dam Removals
Client: City of Bremerton

Future Value to the Engineering Profession
Firm: Tetra Tech
Project: City of Bellevue Lakemont Boulevard Culvert at Coa
Client: City of Bellevue

Exceeding Client/Owner Expectations
Firm: Otak
Project: NE 40th Street Stormwater Trunk Extension and Water Quality Treatment Facility
Client: City of Redmond

Exceeding Client/Owner Expectations
Firm: AECOM
Project: Mellen Street Connector
Client: Port of Centralia

Social, Economic and Sustainable Design Considerations
Firm: P2S LP
Project: St. Francis Family Center
Client: Virginia Mason Franciscan Health - St. Francis Hospital

Social, Economic and Sustainable Design Considerations
Firm: Huitt-Zollars
Project: Foothills Trail - Enumclaw to Buckley Phase II
Client: King County Department of Natural Resources and Parks

Original or Innovative Application of New and Existing Techniques
Firm: Reid Middleton
Project: West Point Treatment Plant Primary Sedimentation Area Roof Structure Project
Client: King County Natural Resources & Parks Department

The new bridge was built on the original alignment, creating safe, accessible access to Colman Dock, the waterfront and downtown.

PHOTO FROM ACEC WASHINGTON

GOLD AWARD STRUCTURAL SYSTEMS

HDR
Marion Street Pedestrian Bridge Replacement
Seattle Department of Transportation

Colman Dock, located on Seattle's waterfront, is one of the world's busiest ferry terminals, with more than 10 million annual passengers.

Connecting Colman Dock to Seattle is the Marion Street Pedestrian Bridge. A hallmark of downtown Seattle for over a century, the original timber trestle was replaced in the 1950s with one threading through the Alaskan Way Viaduct. With the viaduct's removal in 2019, the city of Seattle sought to replace the aged, narrow and seismically vulnerable structure with a modern, elegant one.

This new design creates safe, accessible access to Colman Dock, the waterfront and downtown, becoming an icon on the revitalized waterfront. The Marion Street Pedestrian Bridge Replacement removed the existing span attached to the Commuter Building, demolished the temporary bridge that wrapped around Columbia Street and Western Avenue, and constructed a new bridge on the original alignment.

The new structure replaces half the original bridge between the Colman Dock Ferry Terminal and First Avenue. The remaining original bridge will be replaced when additional funding is available. The project included repaving Marion Street between Alaskan Way and Western Avenue, bridge trench drains, and rail and aesthetic lighting.

Completed in stages to take advantage of adjacent projects, construction began with the mainspan shafts on September 5, 2019. The main contract started on July 18, 2022. The bridge was substantially completed and opened November 10, 2023, with work thereafter extending the railing onto the existing bridge.

GOLD AWARD ENVIRONMENTAL

HDR
Native Salmonid Conservation Facility
Seattle City Light

Since its completion in 1967, the Boundary Dam, standing 340 feet tall, has provided Seattle City Light (SCL) with 1,117 megawatts of electricity. As part of the dam's 2009 Federal Energy Regulatory Commission license renewal, SCL committed to evaluating the impact of its operations on threatened and endangered species.

Located in Usk, Washington, the $27 million Native Salmonid Conservation Facility represents SCL's latest initiative to protect and restore the threatened Westslope Cutthroat Trout (WCT) in the Pend Oreille River watershed.

This facility works to establish self-sustaining WCT populations by capturing genetically pure fish from local tributaries, spawning them, and releasing the progeny as eyed eggs, unfed fry, or fingerlings. The project also involves eradicating non-native species that compete with the WCT. Each population is carefully preserved by segregating fish based on their geographic origins.

In addition to breeding, the facility rescues trout from local streams, using advanced aquaculture techniques to increase their chances of survival before returning them to their native habitats. With Westslope Cutthroat Trout numbers having dropped by 90%, these fish serve as an indicator of watershed health and were nearly placed on the endangered species list. The hatchery will eventually raise other endangered species, such as the Bull Trout and Mountain Whitefish.

The project faced several challenges, including replacing a small dam, ensuring a sufficient domestic water supply, dealing with shallow groundwater and managing severe weather. The facility includes eight structures and three residences for staff.

The project was a collaborative effort, involving SCL, the Kalispel Tribe, Washington Department of Fish and Wildlife, U.S. Fish and Wildlife Service, and others. The ribbon-cutting ceremony on May 29, 2024, celebrated the opening of the facility, and highlighted the partnerships and vision for long-term sustainability.

The facility includes eight structures and three residences for staff.

PHOTO FROM ACEC WASHINGTON

The pump station includes tide gates and fish barrel intake screens to protect migratory coho salmon and resident cutthroat trout.

PHOTO FROM ACEC WASHINGTON

GOLD AWARD WASTE AND STORM WATER

HDR
Fry Creek Pump Station
City of Aberdeen

Located in the 2,500-square-mile Chehalis Basin, Grays Harbor has faced 14 federally declared flood disasters over the past 50 years, primarily affecting the cities of Aberdeen and Hoquiam. These floods have caused significant damage to homes, businesses and infrastructure, impacting 25,000 residents and assets valued at over $1 billion. Existing flood-control systems in these cities are outdated and inadequate for handling the increasing intensity of storms and high tides.

Fry Creek, Aberdeen's largest drainage basin, serves as the outfall for both Aberdeen and Hoquiam's stormwater systems, and is tidally influenced by Grays Harbor.

The original Fry Creek Pump Station, built in 1977, was designed to pump excess water from the creek during high tide events. However, over time, the channel became obstructed, and developed areas around the cities exacerbated flooding, overwhelming the pump station and causing significant damage to homes, businesses, and critical facilities like the Grays Harbor Public Utility District and Pacific Care and Rehabilitation Center.

In response to a severe storm in 2015, Aberdeen and Hoquiam secured over $130 million in state, federal and local funding to support three major flood-control projects: the North Shore Levee, North Shore Levee West Segment and Fry Creek Pump Station. The $22 million, state-of-the-art Fry Creek Pump Station has a capacity of 300 cubic feet per second, and uses four vertical propeller pumps to separate tidal influences from the basin.

The station includes tide gates and fish barrel intake screens to protect migratory coho salmon and resident cutthroat trout. It is designed to handle peak flows and future sea-level rise.

With advanced features like variable-frequency drives for energy efficiency, the Fry Creek Pump Station is one of the largest in western Washington. Completed on schedule and on budget, it provides significant flood protection for the region. The project will work in conjunction with the North Shore Levee to remove over 5,000 properties from the FEMA-mapped flood zone within the next five years.

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The restoration created off-channel marshes, intertidal zones and riparian habitats, and modernized the shipyard's infrastructure.

PHOTO FROM ACEC WASHINGTON

GOLD AWARD WATER RESOURCES

KPFF Consulting Engineers
Harbor Island Habitat Restoration
Vigor Industrial

The Southwest Yard Restoration Project at Vigor Shipyards on Harbor Island revitalized a 2.7-acre section of the shipyard into a crucial habitat refuge, covering 10% of Vigor's 27-acre industrial site. Completed for $49 million, the project is located near the Lower Duwamish River and restores vital habitat for Chinook salmon, migratory birds and other wildlife impacted by decades of industrial pollution. Historically, Harbor Island was home to tidal mudflats essential for salmon migration, but urban development and industrial activities replaced these habitats with steep waterfront walls.

When Vigor acquired the shipyard, it took responsibility for environmental damage under the Superfund program's Natural Resources Damages Assessment (NRDA). Rather than paying into an environmental fund, Vigor chose to remove outdated infrastructure and convert the space into an aquatic habitat. The restoration created off-channel marshes, intertidal zones and riparian habitats to support the recovery of the injured ecosystem. This innovative solution met NRDA requirements while also modernizing the shipyard's infrastructure.

The project included reconfigured piers and a revitalized drydock slip with offshore mooring dolphins, designed to handle more than 18 feet of tidal change, allowing the shipyard to maintain its industrial operations without compromising the habitat. Additionally, a state-of-the-art stormwater treatment system was installed, meeting current Department of Ecology and King County standards, to manage runoff across the entire 27-acre site.

The Harbor Island restoration has been recognized for its environmental impact, especially its role in supporting the Duwamish River ecosystem and providing essential habitat for juvenile salmon. It serves as a precedent for other urban industrial sites, demonstrating how habitat restoration and industrial infrastructure can coexist. The project has been featured in ASCE Civil Engineering magazine, presented at the 2022 Ports Conference and received recognition from the Associated General Contractors of Washington.

The design raised the road above the floodplain, mitigated debris flow and landslide hazards, and restored a salmon-bearing creek.

PHOTO FROM ACEC WASHINGTON

GOLD AWARD TRANSPORTATION

Shannon & Wilson| WSP
Index-Galena Road Flood Repair Project
Snohomish County

The Index-Galena Road Flood Damage Repair Project, initiated after record flooding in November 2006 destroyed a key section of road, was a critical effort to restore access to the upper North Fork Skykomish River valley in the Cascade Mountains. This route is vital for local and recreational traffic, but the flooding had caused significant damage, leaving an unsustainable detour of up to 40 miles over rugged, gravel roads. Restoring the road became a priority for Snohomish County.

The project, led by the Shannon & Wilson | WSP team, not only restored the road but also addressed future flood risks, enhanced river conditions for wildlife, and minimized environmental impacts. The design raised the road above the floodplain, mitigated debris flow and landslide hazards, and restored sensitive habitat areas. The project's challenges included steep terrain, complex soil and rock conditions, active debris flows, and harsh winter weather, which required innovative design solutions.

Key elements of the project included a box culvert vented ford and diversion berms to mitigate debris flow hazards, and a 180-foot-long bridge to restore a salmon-bearing creek. The bridge was designed to blend with its surroundings and could be retrofitted in the future to accommodate river migration. Despite the challenging environment, the project was completed on time and under budget, meeting Snohomish County design standards with a remarkably small footprint.

The Index-Galena Project is an exemplary model for restoring access in environmentally sensitive mountainous areas, especially in light of future climate-related risks. The project demonstrated engineering excellence by adapting existing technologies to create a sustainable, low-impact solution that ensures long-term access to an important recreational area while preserving the natural environment.

This pedestrian path between two beloved landmarks exemplifies how practical infrastructure can also become a vibrant public space.

PHOTO FROM ACEC WASHINGTON

GOLD AWARD TRANSPORTATION

Jacobs
Seattle Waterfront Overlook Walk
City of Seattle - Office of the Waterfront and Civic Projects

Seattle's Overlook Walk offers a scenic and welcoming pathway to bridge the nearly 100-foot elevation gap between Pike Place Market and the Seattle Waterfront. Designed by Jacobs in collaboration with urban designers, this elevated park features accessible ramps, stairs, elevators, a café, a glass canopy, a children's play area, benches, landscaped planters and lighting, creating a dynamic new link between two of the city's most beloved landmarks.

The Overlook Walk fulfills a long-held vision. The Alaskan Way Viaduct, built in 1953, had divided the city from its waterfront. After the viaduct was damaged in the 2001 Nisqually earthquake, plans to remove it and reconnect the city to the waterfront began. The construction of a tunnel to reroute the highway beneath the city allowed for the viaduct's demolition in 2019, paving the way for the Overlook Walk project.

This pedestrian path exemplifies how practical infrastructure can also become a vibrant public space. Unlike typical transportation projects that prioritize speed and efficiency, Overlook Walk offers a unique opportunity for visitors to linger, relax and enjoy the surroundings. It provides not only a convenient connection but also a welcoming space for gatherings, offering stunning, 360-degree views of Seattle and the Puget Sound.

Overlook Walk's design breaks the journey into stages, offering places to rest and explore, transforming what once was a challenging ascent into a memorable destination. Since its completion in the fall of 2024, Overlook Walk has become a new Seattle landmark, attracting a mix of tourists and residents alike, drawn to its beauty and accessibility.

GOLD AWARD SPECIAL PROJECTS

Shannon & Wilson
Glennallen Response Base Hill Slope Stabilization
Alyeska Pipeline Service Company

The Glenallen Response Base (GRB) Hill Stabilization project addressed critical landslide risks threatening both the Trans Alaska Pipeline System (TAPS) and the Glennallen Response Base. In collaboration with the Alyeska Pipeline Service Company (APSC), Shannon & Wilson designed and implemented a slope stabilization system using tieback anchors and environmentally friendly woodchip insulation to ensure the long-term safety of TAPS infrastructure.

Shannon & Wilson employed advanced geotechnical design methods, conducting long-term tieback anchor load tests in glaciolacustrine clay, a material prone to creep. These tests revealed much higher bond strength values than expected, which led to the development of a 3D geologic model using LeapFrog Geo. This model optimized the placement of anchors and reduced project complexity. By targeting specific soil layers with high bond strength, the team was able to cut the number of required tieback anchors by over 50%, improving design efficiency.

The project's smart use of data resulted in significant cost savings. By reducing the number of anchors, construction time was cut from two summers to just one. This, along with material, labor, and mobilization savings, reduced costs by more than $3 million. Additionally, environmentally sustainable practices were incorporated by using woodchip insulation derived from wood waste instead of synthetic materials. The woodchip insulation also enhanced erosion control, protecting nearby streams from sedimentation.

The GRB Hill Stabilization project successfully reduced landslide risks to the lowest level for APSC, and the stabilized slope will require less maintenance and monitoring in the future. The project also produced valuable data on glaciolacustrine clay bond strength and creep behavior, contributing to future geotechnical research and slope stabilization projects. The project's success exemplifies how advanced engineering and sustainable practices can work together to ensure long-term infrastructure safety and cost efficiency.

By targeting specific soil layers with high bond strength, the team cut the number of required tieback anchors by over 50%.

PHOTO FROM ACEC WASHINGTON

GOLD AWARD SPECIAL PROJECTS

Brown and Caldwell
West Point Power Quality Improvements
King County

The King County Wastewater Treatment Division serves nearly 2 million people across 424 square miles near Puget Sound, ensuring effective wastewater treatment while protecting water quality. Operating three regional wastewater treatment plants, including the West Point Treatment Plant (WPTP) in Seattle, the division plays a critical role in maintaining public health.

The plant, the largest in the region, processes an average of 95 million gallons of wastewater per day and uses high-purity oxygen secondary treatment before discharging into the Puget Sound.

In 2021, King County Executive Dow Constantine signed an emergency declaration to enhance the plant's resilience to power disruptions caused by severe weather. Voltage sags, or temporary power losses, cause large pump motors to shut down. The time required to safely restart the pumps can lead to wastewater discharges into the Puget Sound during periods of heavy flow. With the increasing frequency of such disruptions due to climate change, improving the resiliency of West Point's electrical power supply has become essential to prevent wastewater releases and protect water quality.

To address the wastewater releases, King County partnered with Brown and Caldwell, Hoffman Construction Company and other partners to design and install a 16.8-megawatt battery system, integrating 48,000 battery cells into the facility's electrical system. This system ensures continuous pump operation during power outages. The project, the largest application of uninterruptible power supply at a wastewater treatment plant in the U.S., was completed in just 3.5 years, a significant achievement compared to the typical seven-to-10-year timeline for such large-scale public agency projects.

In November 2024, the WPTP successfully passed its first major test, maintaining steady power through seven voltage sags during a severe weather event. The on-site battery system will continue to safeguard water quality by preventing wastewater discharge into Puget Sound for years to come.

The 16.8-megawatt battery system ensures continuous pump operation during power outages.

PHOTO FROM ACEC WASHINGTON

BEST IN STATE - GOLD AWARD FUTURE VALUE TO THE ENGINEERING PROFESSION

WSP USA
East Marginal Way Water Design
Client: Seattle Department of Transportation

The East Marginal Way Corridor Design Improvements, a multidisciplinary project led by the Seattle Department of Transportation and Seattle Public Utilities, focused on enhancing infrastructure resilience. The project aimed to protect aging water utilities from seismic events while improving multimodal transit safety. Key components included replacing over a mile of 12-inch water main, laterals and hydrants with hazard-resistant ductile iron pipe (HRDIP), marking a regional first for replacing conventional cast iron with HRDIP as part of Seattle Public Utilities' seismic resiliency efforts.

The new water main boosts system resiliency, ensuring uninterrupted water and fire flow to critical port terminals, including the Coast Guard, following a seismic event. A major challenge was designing the system to withstand seismic loads due to complex site geology. The existing water main sat above 30 feet of artificial fill, which would experience up to 32 inches of total settlement and 16 inches of differential settlement during a Cascadia earthquake. Additionally, the project site had mildly corrosive soil, hazardous materials and contaminated groundwater, complicating utility installation.

To address these challenges, the team designed HRDIP with joints capable of extending more than 16 inches, ensuring the water main remained functional after liquefaction. The team also used biaxial geogrids and geotextile linings to improve soil suitability for pipe installation. Engineering solutions balanced the need for strength to handle water pressures with flexibility to move with the surrounding ground during earthquakes. Custom fittings, such as bell-to-flange adapters, telescoping joints, and specially calculated thrust blocks, were used to accommodate ground movements.

The project, federally funded and compliant with Build America, Buy America requirements, was completed four months ahead of schedule. It set a precedent for future seismic upgrades, ensuring critical facilities will have reliable water during major earthquakes.

The project marked a regional first for replacing conventional cast iron with hazard-resistant ductile iron pipe for seismic resiliency.

PHOTO FROM ACEC WASHINGTON

BEST IN STATE - GOLD AWARD COMPLEXITY

Stantec
Raging River Bridge (I-90, SR 18I/C to Deep Creek)
Aecon/Washington State Department of Transportation

The Raging River Bridge is a key component of the larger Design/Build I-90, state Route 18 Interchange to Deep Creek Widening Project, aimed at improving traffic flow, safety and reducing congestion at the interchange of I-90 and SR 18. The project included constructing a four-lane Diverging Diamond Interchange (DDI) and widening SR 18, which currently only has one lane in each direction, contributing to high crash rates and fatalities due to the lack of a median barrier.

The $15 million Raging River Bridge, a complex design and construction task, features a 334-foot, 3-span bridge located just 10 feet west of the existing structure. It provides 54 feet of clearance above the fast-moving Raging River, and rests on two-column bent shafts that are socketed 75 feet into glacial till.

The bridge is also situated 44 feet below high-voltage overhead electrical lines carrying up to 500kV, crucial for powering several Washington population centers. The construction process involved a two-crane operation for girder erection and a temporary steel pass-over crossing over the river to facilitate the work.

The Raging River Bridge serves a critical transportation route, with heavy truck traffic transporting goods to and from the Port of Tacoma, Washington's largest port and the 7th largest in the nation. The bridge is designed according to WSDOT's new scour policy for stream and bridge protection, advancing the understanding of building sustainable bridges in highly seismic areas subject to severe stream and scour effects.

Stantec was the prime consultant and structural engineer of record, with Aecon as the contractor. Stantec led the final design and construction support, collaborating with subconsultants PBS (stream design and environmental permitting), Perteet (civil work), and Haley Aldrich (geotechnical investigations). The bridge was substantially completed on October 25, 2024.

The new 3-span bridge was constructed just 10 feet west of the existing structure above the fast-moving Raging River.

PHOTO FROM ACEC WASHINGTON

BEST IN STATE - GOLD AWARD ORIGINAL OR INNOVATIVE APPLICATION OF NEW AND EXISTING TECHNIQUES

WSP
Multimodal Terminal at Colman Dock
Washington State Ferries

Colman Dock's 23,000-square-foot terminal building received LEED Silver certification.

PHOTO FROM ACEC WASHINGTON

Colman Dock, the busiest ferry terminal in Washington and one of the busiest in the world, serves over 10 million passengers annually, connecting Seattle, Kitsap County and the Olympic Peninsula. To maintain the terminal's role as a vital transportation hub, Washington State Ferries (WSF) selected WSP as Design Engineering Lead for the replacement of structurally deficient components, ensuring continued safe and reliable ferry service. WSP employed innovative techniques to enhance the dock's safety, accessibility, operational efficiency and user experience.

The project included the addition of an Overhead Loading and Walkway, a new 8,500-square-foot King County Passenger-Only Ferry Building, and a 23,000-square-foot Terminal Building, which received LEED Silver certification. Construction began in 2017 and the terminal became fully operational in 2023, with some work continuing into 2024. The project involved coordination with key partners, including the U.S. Department of Transportation, Federal Transit Administration, King County, the city of Seattle and several community groups.

The redesigned terminal offers a better passenger experience with a brighter, environmentally friendly interior featuring natural ventilation. It provides triple the seating capacity, more accessible entry points, and improved wayfinding compared to the previous terminal. The aging trestle was restored to enhance safety, replacing 7,500 tons of creosote-treated wood with 500 steel support piles, improving both safety and the aquatic ecosystem. The new trestle also includes 772 precast concrete panels and 12,000 cubic yards of concrete, increasing vehicle capacity by 185 to a total of 611 vehicles.

The upgraded Colman Dock was engineered to perform well during major earthquakes, ensuring public safety in emergencies. As part of the broader waterfront redevelopment, this project supports Seattle's vital tourist industry and local economy. With WSP's help, the dock now provides a safer, more accessible and sustainable facility for the millions of riders who rely on it each year.

BEST IN STATE - GOLD AWARD EXCEEDING CLIENT/OWNER EXPECTATIONS

Peterson Structural Engineers
Fishtrap Creek Suspension Bridge
Reichhardt & Ebe Engineering/City of Lynden

The 12-foot pedestrian bridge incorporates innovative construction methods, weathering steel towers and a timber superstructure.

PHOTO FROM ACEC WASHINGTON

The Fishtrap Creek Suspension Bridge in Lynden is the highlight of the Jim Kaemingk Sr. Trail system, blending exceptional engineering with strong community involvement. Completed in July of 2024, after two years of design and one year of construction, the 120-foot pedestrian bridge spans Fishtrap Creek and serves as the central feature of the city's three-mile trail. Peterson Structural Engineers (PSE), the Engineer of Record, led the project's design and construction, overcoming budget challenges to create an iconic and functional structure.

The bridge incorporates innovative construction methods, including pin pile and cast-in-place concrete abutments, weathering steel towers and a timber superstructure. PSE's careful design adjustments ensured that the bridge could be built within budget while maintaining the integrity of the original ambitious vision. The result is a striking structure that enhances the trail's aesthetic appeal and showcases structural engineering at its best.

Community involvement was crucial to the project's success, with local fabricators, contractors, and even residents contributing to the assembly and construction. This collaboration reflects the pride and spirit of the Lynden community, ensuring the bridge resonates with local identity. Moreover, the project benefited from generous donations and strong coordination between the city of Lynden and various local stakeholders, further highlighting its collective nature.

The Fishtrap Creek Suspension Bridge is more than just a functional crossing; it is a symbol of what can be achieved through creative engineering and community unity. It serves as a lasting testament to innovation, craftsmanship, and the collaborative efforts of engineers and the Lynden community, making it a worthy candidate for special recognition.

BEST IN STATE - GOLD AWARD SOCIAL, ECONOMIC AND SUSTAINABLE DESIGN CONSIDERATIONS

DLR Group
Green Hill School Wellness & Recreation Center
Washington State Department of Children, Youth and Families

The original recreation building at Green Hill School in Chehalis, built in the 1960s, was designed for a different population and no longer met the needs of its current residents. While other campus buildings were updated or replaced over the years, the recreation building remained outdated, with safety concerns including poor sight lines, deteriorating materials and structural issues. These factors led to the decision to replace the facility with a new, purpose-built structure.

The new Green Hill School Wellness & Recreation Center is now the heart of the campus, transforming the overall campus experience. It supports the state-mandated daily physical activity for youth while offering a crucial space for staff respite. The center enhances the environment for youth, staff and visitors, serving as a hub for wellness and connection.

The design incorporates natural materials and processes to create a welcoming and harmonious environment. The building's massing and saw-tooth roofs reflect local architectural styles and landforms, while strategically placed wood finishes invite touch and engagement. To maximize natural light and ventilation in the large open spaces, the design team incorporated clerestories and carefully engineered roof trusses that create large openings without compromising the visual lightness of the steel structure.

The new Wellness & Recreation Center stands as a modern, functional and aesthetically pleasing facility that enhances the campus experience.

The massing and saw-tooth roofs of Green Hill School's new recreation building reflect local architectural styles and landforms.

PHOTO FROM ACEC WASHINGTON

ENGINEER OF THE YEAR

Ralph Boirum
HWA Geosciences

Ralph Boirum's distinguished career of 45 years in geotechnical consulting has earned him the recognition of the ACEC Washington 2025 Engineer of the Year. His expertise, dedication and leadership in the geotechnical engineering field are exemplified through his involvement in over 6,000 engineering projects, ranging from small-scale residential and commercial developments to large transportation, utility, and industrial projects across the Pacific Northwest and internationally. Boirum, a senior geotechnical engineer and principal with HWA Geosciences, has provided critical engineering services in projects that span diverse industries, such as infrastructure, heavy industry, transportation and wastewater management.

Boirum's deep technical knowledge and hands-on experience have made him a vital contributor to the design and construction of some of the region's most significant and complex projects. His work in areas like foundation engineering, slope stabilization and seismic analysis has had a transformative impact on infrastructure throughout Washington state. Notably, Ralph led the geotechnical design studies for the Downtown Seattle Transit Project (1983–1986), overseeing the design and construction of twin transit tunnels and five stations running through 25 blocks of downtown Seattle. This project was a monumental task that required precise geotechnical studies due to the challenging soil conditions and seismic activity of the region.

In addition to his work on transit systems, Boirum also provided expertise for a variety of transportation and infrastructure projects. He played a pivotal role in supporting Sound Transit's commuter rail expansions in several key cities, including Puyallup, Sumner, Seattle, Everett, Northgate and SeaTac. His in-depth knowledge of geotechnical conditions has also been crucial in evaluating the stability of roads, sewers, gas lines, and tunnels, along with conducting geotechnical studies for major upgrades to wastewater treatment plants across Washington state.

A defining feature of Boirum's work has been his ability to manage complex geotechnical challenges related to seismic risk, which is particularly relevant in the Pacific Northwest due to its vulnerability to earthquakes. Boirum's expertise in seismic analysis and mitigation has been crucial to a range of high-profile projects in the region.

One such project was the Fairview Avenue Bridge Replacement in Seattle, where Boirum's innovative seismic analysis saved the city of Seattle nearly $18 million in construction costs. By identifying appropriate seismic parameters for the site, Boirum helped avoid the need for costly slope stabilization measures, which would have been required using standard design methods. This was just one example of how his deep understanding of geotechnical principles has resulted in both cost savings and improved safety for the community.

Another example of Boirum's significant contributions to infrastructure in Washington is his work on the Denny Way/Lake Union Combined Sewer Overflow Control Project. Boirum led the geotechnical investigations and studies for five large-diameter tunnels that were essential for the project. His thorough analysis helped develop detailed design and construction recommendations for the tunnels, which encountered challenging soil conditions, including cobbles, boulders and buried debris. His work on this project, and many others, underscores his ability to blend innovative solutions with practical engineering applications to address the unique challenges of each site.

Boirum's technical expertise extends to managing complex projects in the environmental and wastewater sectors as well. He directed geotechnical evaluations for over 50 wastewater treatment plants and major plant upgrades, including work at facilities in Granite Falls, Langley, Renton and many others. His ability to evaluate geotechnical conditions in potentially unstable environments, such as sites near rivers, has been crucial in the successful design of these facilities, ensuring their long-term stability and minimizing the risk of damage from flooding or other environmental factors.

Beyond his technical accomplishments, Boirum has been a passionate advocate for the geotechnical engineering profession and developing future engineers. He has held professional engineering licenses in four states for over 40 years and has contributed to the field through mentorship, publications and leadership. As president of the ACEC of Washington from 2014–2015, Ralph played a key role in promoting infrastructure development and advocating for policies that supported engineering firms across the state. His leadership strengthened ACEC Washington's advocacy efforts and fostered collaboration among engineering firms, ensuring that engineers of all levels had the tools and support they needed to succeed.

Boirum's impact extends beyond Washington state. He served as the geotechnical project manager for over 20 U.S. Embassy projects globally, including in Saudi Arabia, Turkmenistan, the Bahamas, Montenegro and Trinidad. His work on these international projects further demonstrates his versatility and expertise in providing geotechnical solutions in diverse and challenging environments.

Boirum's exceptional technical abilities, leadership and commitment to mentoring the next generation of engineers make him a deserving recipient of the ACEC Washington 2025 Engineer of the Year Award. His career is a testament to the importance of combining technical excellence with a dedication to community, infrastructure and the advancement of the engineering profession. Boirum's contributions have shaped the built environment in Washington state and beyond, and his legacy continues to influence the engineering community.

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"One of the primary functions of ACEC of Washington is to lobby in Olympia on behalf of the consulting engineering community regarding proposed new legislation critical to our industry and members statewide. We find the advocacy one of the biggest benefits, among many, that makes our membership a good investment for our company."

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"ACEC is a world of information about everything you need to know in the context of running your engineering business. As a new member, I have found this such a great opportunity for networking, collaborating and education."

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"Our membership to ACEC of Washington provides benefits well above the annual membership fee. The education and training opportunities for our employees at all levels are invaluable, from the Core Competencies for Professionals series and conferences to the educational seminars provided each month. We rely on ACEC to keep us informed on emerging issues and current best practices in our industry."

Ben Upsall, Associate Geotechnical Engineer, GeoEngineers, Inc.

"I am a member of ACEC of Washingrton because advocacy for small engineering firms has never been more important. ACEC provides invaluable tools, information and networking opportunities to help my business thrive in a highly competitive, rapidly evolving market."

Robin Kirschbaum, PE, LEED AP, ENV SP, President, Robin Kirschbaum, Inc.

"Through the efforts of ACEC, we continue to build paths that help us collaborate more successfully with our clients and be more innovative on the projects we help develop for our communities. ACEC is the voice that represents our collective business interests."

Mike Clark, Transportation Group Manager, David Evans and Associates, Inc.