

ACEC

AMERICAN COUNCIL OF ENGINEERING COMPANIES
of Oregon



2020 Engineering Excellence Awards



WHAT IS ENGINEERING EXCELLENCE?

The Engineering Excellence Awards (EEA) competition recognizes engineering firms for projects that demonstrate an exceptional degree of innovation, complexity, achievement and value. The EEA program was created by ACEC to increase the public’s perception of what engineers really do.

For more than 50 years engineering firms have entered their most innovative projects and studies in state competitions.

A distinguished panel of judges is convened for a day to critique and select the best engineering projects based on criteria such as uniqueness and/or innovative applications of new or existing techniques; future value to the engineering profession and enhanced public awareness/enthusiasm for the role of engineering; social, economic and sustainable development considerations; complexity; and successful fulfillment of client/owner’s needs, including schedule and budget.

Many of these projects are procured through the Qualifications-Based Selection (QBS) process. QBS ensures a competitive selection process for engineering that promotes innovation and cost-savings. These projects are real, award-winning examples of how the QBS process works to deliver successful and innovative projects.

2020 ENGINEERING EXCELLENCE AWARDS JUDGES

John Lewis, PE
Public Works Director
City of Oregon City

Kevin Houser, PhD, PE (NE), LEED AP
Professor, School of Civil & Construction
Engineering
Oregon State University

Bill Beyer
Advertising Director
Daily Journal of Commerce

Kristina (Kristy) Fortuny, PE
Chief
Veterans Affairs Branch
U.S. Army Corps of Engineers
Portland District

Joe Gehlen, PE (retired)
Kramer Gehlen & Associates

ACEC

AMERICAN COUNCIL OF ENGINEERING COMPANIES
of Oregon

March 4, 2020

David Evans and
Associates, Inc., Portland

Schedule

7:30 A.M.

Check-in & Breakfast

8:00-10:30 A.M.

Program (Parts 1 & 2) + Q&A

More Information/Inquiries

503-292-2348

mwebber@acecOregon.org

www.acecOregon.org

Risk Management for A/E Firms

PART 1: Risk Drivers

Gain a clear understanding of what causes claims. Since risks are present throughout the entire project cycle—from client acquisition to project close-out—managing them is a constant activity. Based on a large body of claim data, this course identifies the technical and non-technical causes of loss for design firms. In this course, you’ll develop a better understanding of the dynamics of risk, learn the key areas that influence your firm’s risk, and gain strategies to anticipate, manage and respond to risk.

PART 2: Claims Case Study Workshop

This interactive session will study an engineering actual interstate highway claim. Program is designed to help engineers readily spot risks, identify opportunities to use loss prevention techniques, and decrease your firm’s exposure to claims.

Program is good for two and half (2.5) continuing professional development credits.

Presented by **Brett Stewart**, Risk Manager, Design Professional Unit, AXA XL; and **Mike Olson**, Vice President, Design Professional Practice Group, Dealey, Renton & Associates.

Who Should Attend?

Owners, principals, project managers and other firm personnel who work with contracts.

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AMERICAN COUNCIL OF ENGINEERING COMPANIES OF OREGON

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Publisher: Nick Bjork



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About ACEC Oregon



Founded in 1956, the American Council of Engineering Companies of Oregon (ACEC Oregon) represents 122 firms, employing more than 3,700 employees. Our primary goal is to protect the public welfare and advance the professional quality of consulting engineers and land surveyors in private practice.

ACEC Oregon offers:

Advocacy – ACEC Oregon is the only engineering association represented by a lobbyist

in Salem.

Education – ACEC Oregon offers educational programs presented by experts on a variety of business and management topics, including legal issues facing consultants, risk management, leadership development, ownership transition and more.

Resources and Networking – Membership offers valuable business resources such as the annual Oregon/Washington Salary & Benefits Survey, access to expertise and best practice information and regular networking opportunities, which lead to improved firm business practices.

Client Committees – Members find great value in the liaison committees

that facilitate communications and problem-solving with agency personnel. Current committees include: Oregon Department of Transportation, U.S. Army Corps of Engineers and SW Washington Public Agency Liaison.

National Representation – In addition, ACEC Oregon is a member organization of ACEC National. The national organization is the voice of the engineering industry in Washington, D.C. ACEC promotes infrastructure investment and other important issues for the engineering industry.

Engineering Excellence – The awards recognize and celebrate the important work ACEC member firms perform. We also acknowledge and celebrate the owners and public officials that provide the vision, support and leadership required to ensure the execution of these projects.

Congratulations to the 2020 award winners! Thank you to the sponsors and to the DJC for your support of this publication and for your support of Engineering Excellence.

Alison Davis
Executive Director
American Council of Engineering Companies of Oregon



Tualatin Interceptor and Siphon Improvements Phase A  **Congratulations to all Engineering Excellence award winners!**



Our team is honored to have partnered with Clean Water Services on this record setting project

2020 Legislative Session Preview



On Feb. 3, 2020 the Oregon Legislature will convene for a five week policy-making sprint dominated by Democratic Gov. Kate Brown and Democratic super majorities in both the House and Senate.

ACEC Oregon will be tracking these issues:

Qualifications-Based Selection (QBS) –

ACEC Oregon is working closely with local governments to implement HB 2679. The law took effect Jan. 1. ACEC members presented several peer to peer QBS programs in 2019. Educational events will continue in 2020 to help ensure that local government procurement staff are aware of the benefits of QBS and are

comfortable with the QBS process.

Gross Receipts Tax, Business Activity Tax –

ACEC Oregon will continue to work with the Department of Revenue and Governor's staff, key legislators and other business groups to potentially amend the 2019 legislation as well as seek more clarity on the administrative rules that will be implemented from January through June.

2017 Transportation Package – ACEC Oregon will continue to stay intimately involved with enactment of the package. We look forward to working with the new leadership in the ODOT Director's office and the Oregon Transportation Commission to implement the major projects that were mandated in the bill from the 2017 session.

Interstate Bridge Committee – ACEC Oregon will participate with the committee and offer assistance to help find a path forward on the replacement of the I-5 bridge.

Governor Brown's Water Package – The governor has committed to a major water package for the 2021 legislative session. Work to tee up the plan will begin in earnest in the first quarter of 2020. ACEC and our members will be keenly involved.

As always, ACEC Oregon will be actively engaged supporting or opposing a number of issues during the 2020 legislative session. We look forward to active member involvement to help protect and promote the engineering profession in Oregon. Following the session end in early March, electoral politics will dominate the year as the filing deadline for candidates is March 10, the primary is May 19 and the general election is Nov. 3.

Marshall Coba
ACEC Oregon Lobbyist
CobaCo Government Relations



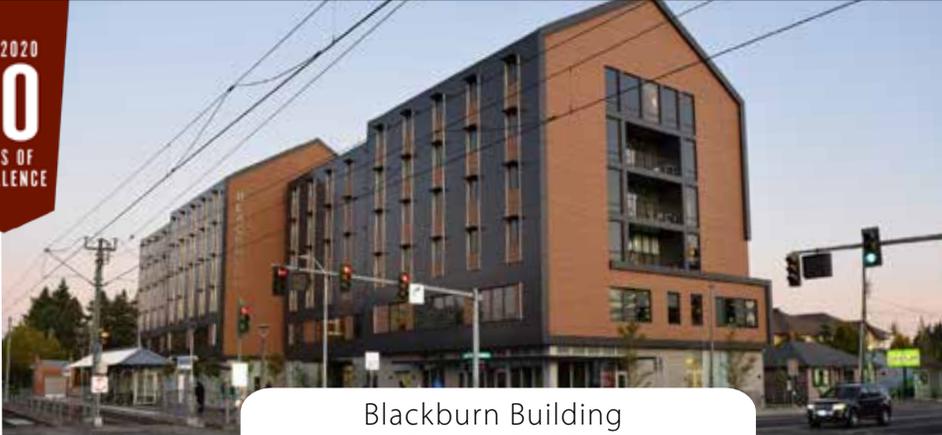
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1990-2020
30
 YEARS OF
 EXCELLENCE



Blackburn Building
 PORTLAND, OREGON



First Street Improvements
 WOODBURN, OREGON

ACEC Oregon Member Firms

1 Alliance Geomatics LLC
 2G Associates Inc.
 3J Consulting Inc.
 AAI Engineering
 AECOM
 Akana
 Aligned Engineering LLC
 Anderson Engineering & Surveying Inc.
 Anderson Perry & Associates Inc.
 Aspect Consulting LLC
 BergerABAM Inc.
 Boatwright Engineering Inc.
 Brandy Properties LLC
 Brown and Caldwell
 Burgess & Niple Inc.
 Cascadia Associates LLC
 Casso Consulting Inc.
 Central Geotechnical Services LLC
 Century West Engineering Corp.
 Compass Land Surveyors

Cornforth Consultants Inc.
 Crow Engineering Inc.
 Curran-McLeod Inc.
 David Evans and Associates Inc.
 DJ&A P.C.
 DKS Associates
 Duval Engineering LLC
 DOWL
 E-PUR LLC
 Emerio Design
 Engineered Monitoring Solutions (EMS)
 ESA
 Exeltech Consulting Inc.
 Focused Engineering LLC
 Forensic & Mechanical Engineering Inc.
 Foundation Engineering Inc.
 Froelich Engineers Inc.
 GeoDesign Inc.
 GeoEngineers Inc.
 GeoMechanics

GeoPacific Engineering Inc.
 GHD
 GRI
 Haner Ross & Sporseen Inc.
 Harper Houf Peterson Righellis Inc.
 Hart Crowser Inc.
 HDR
 HK Electrical Engineers
 Hood River Consulting Engineers Inc.
 Hood-McNees Inc.
 Humber Design Group Inc.
 ICHTHYS Engineering PLLC
 IMEG
 Inter-Fluve Inc.
 J-U-B Engineers Inc.
 Jackola Engineering & Architecture PC
 Jacobs
 JAS Engineering Inc.
 Keller Associates Inc.
 Kennedy Jenks

Kittelson & Associates Inc.
 KPFF
 Kramer Gehlen & Associates Inc.
 Kurt Fischer Structural Engineering
 Land Mark Surveying Inc.
 Lewis & Van Vleet Inc.
 Locke Engineers Inc.
 Mead & Hunt Inc.
 MEGI Engineering Inc.
 Miller Consulting Engineers
 MKE & Associates Inc.
 Mott MacDonald
 Murraysmith
 Northstar Surveying
 Northwest Engineering Service Inc.
 Otak Inc.
 PACE Engineers Inc.
 Pacific Building Insight
 PAE
 Pali Consulting Inc.



ACEC Oregon Member Firms

Parametrix Inc.	Talbott Associates Inc.
ParsonsWater Consulting LLC	Tennessee Engineering Corp.
Pavement Services Inc.	Tetra Tech Inc.
PBS	TY Lin International
Peterson Structural Engineers Inc.	Tye Engineering & Surveying Inc.
Professional Service Industries Inc.	VALAR Consulting Engineering
Quincy Engineering Inc.	VLMK Engineering and Design
R & W Engineering Inc.	Wallace Group Inc.
Reynolds Engineering LLC	Waypoint Engineering Inc.
RH2 Engineering Inc.	WDY Inc.
Rhino One LLC	WEST Consultants Inc.
RHT Energy Inc.	Westech Engineering Inc.
Ridge Engineering LLC	Western Testing LLC
Rieke Consulting Services LLC	WHPacific Inc.
Shannon & Wilson Inc.	Windsor Engineers
Singh & Associates Inc.	Wolf Water Resources
Smith Monroe Gray Engineers Inc.	WRK Engineers Inc.
SSW Engineers Inc.	WSP USA
Standridge Design Inc.	Zucker Engineering



Congratulations to Clean Water Services and the AKS team on outstanding work on the Bull Mountain Trunk project.



Affiliate Member Firms

Advanced Drainage Systems Inc. (ADS)
 Aldrich CPAs Advisors LLP
 Chartwell Financial Advisory Inc.
 Commonstreet Consulting LLC
 Cosgrave Vergeer Kester LLP
 Cushman & Wakefield of Oregon
 Dealey, Renton & Associates
 ECONorthwest
 Envirolssues
 Epic Land Solutions Inc.
 GSI Water Solutions Inc.
 JLA Public Involvement
 Marvin Chorzempa & Larson PC
 Mason, Bruce & Girard Inc.
 Moss Adams LLP
 Newforma
 Shipley & Pease
 Stewart Sokol & Larkin LLC
 SWCA Environmental Consultants
 The PPI Group
 Universal Field Services Inc.
 USI Insurance Services
 Woodruff Sawyer

June 17, 2020
Langdon Farms Golf Club



Schedule
12:00 NOON Check-in Begins
1:30 P.M. Shotgun Start
6:30 P.M. Social & BBQ dinner

Networking Day Golf Tournament

Bring your clients!
Tournament Format:
 Modified shotgun, scoring is gross.
 (Singles and twosomes will be grouped.)

Golf registration includes warm-up range balls and use of practice facility prior to play, box lunch and BBQ dinner.

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More Information / Inquiries
 (503) 292-2348 | mwebber@acecOregon.org
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Project of the Year

PROVIDENCE PARK EASTSIDE EXPANSION

Submitting Firm: KPFF

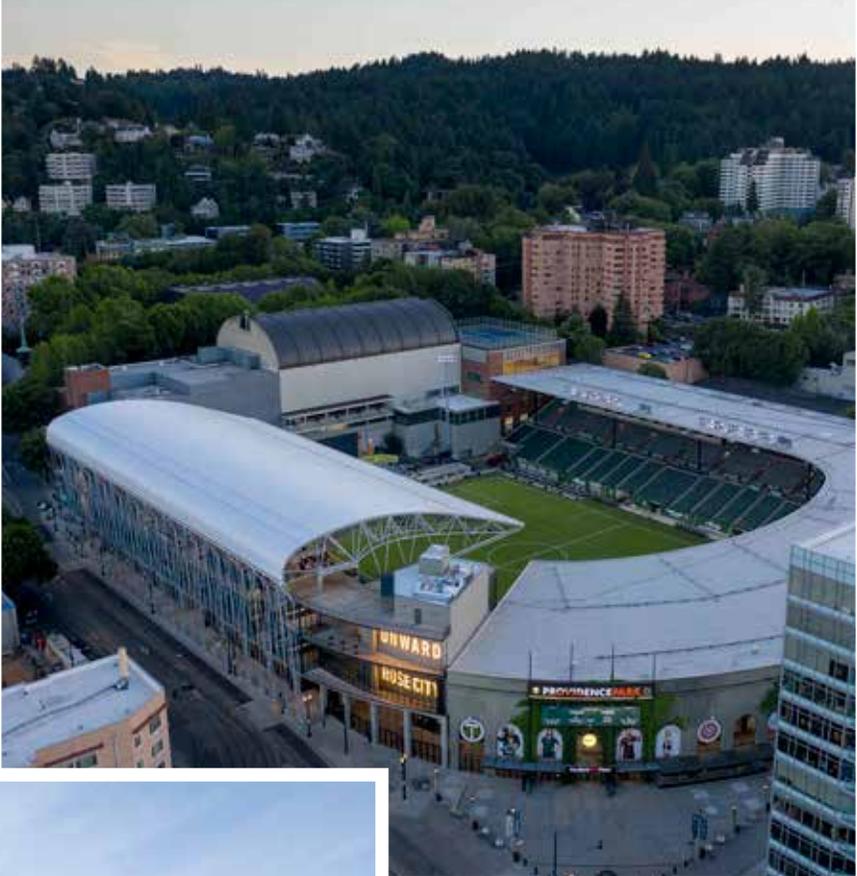
Location: Portland, Oregon

Client/Owner: City of Portland

Lessee: Peregrine Sports LLC (Timbers and Thorns owner)

Other Consultants/Key Participants:

Allied Works Architecture (architectural design), GeoDesign Inc. (geotechnical engineering), Glumac (mechanical, electrical and plumbing engineering), Kittelson & Associates (traffic engineering), Turner Construction Co. (general contractor)



GAME ON

Providence Park scores top Engineering Excellence honor

GOOOOAAAALLLLLLL! Adding 4,000 seats and three tiers to an historic stadium is no easy feat. Throw in renovation of public infrastructure, increasing sustainability and changing the skyline of a neighborhood and you have one remarkably challenging project.

KPFF Consulting Engineers and its team –

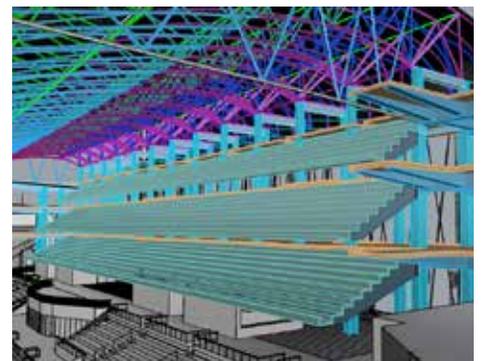
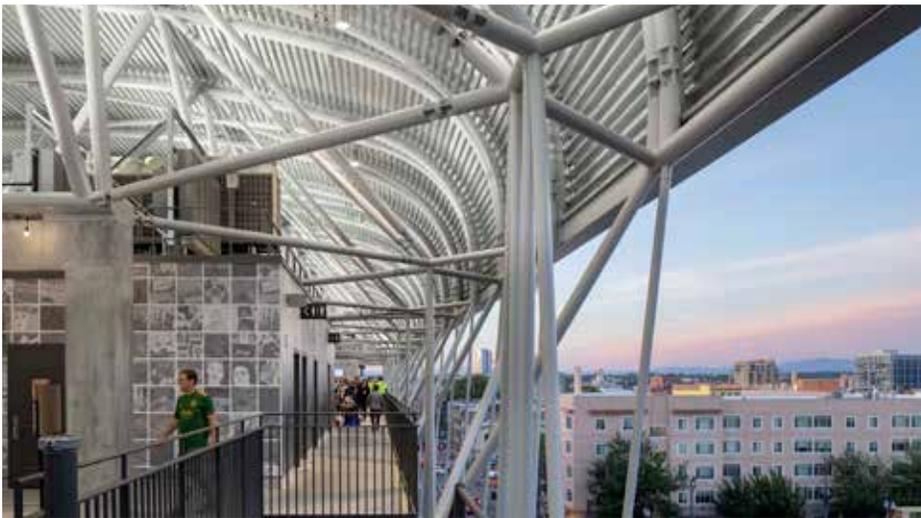
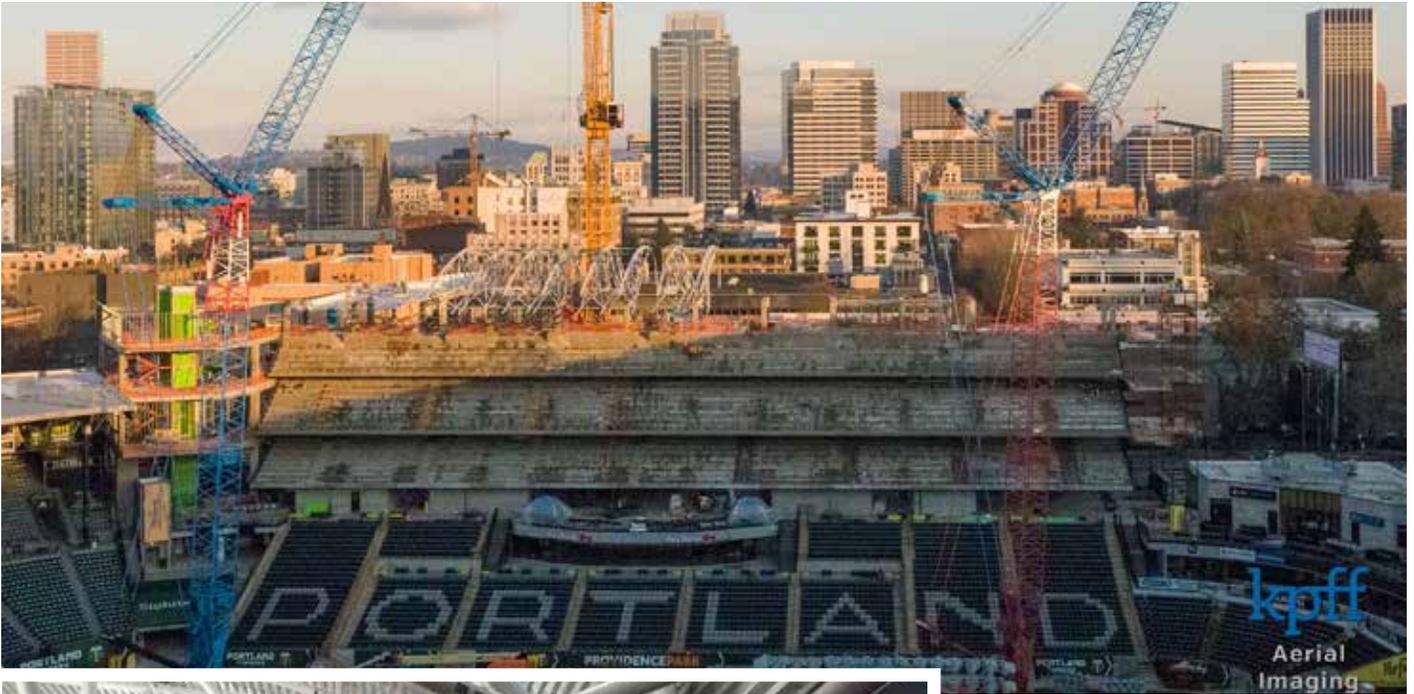
Allied Works Architecture, GeoDesign, Glumac, Kittelson & Associates and Turner Construction – working with the city of Portland and Peregrine Sports did just that when they renovated Providence Park Stadium.

The stadium, owned by the city of Portland and leased to Portland Timbers' and Thorns' owner

Peregrine Sports, was originally built in 1893 as Multnomah Field and expanded to a stadium in 1926. It has undergone several expansions and renovations. Being publicly owned and operated privately adds to the complexity of undergoing renovations and additions. Engineers had to think creatively to design a facility that can host more than 25,000 guests per event.

Nearly everything about the project was unique: expanding an historic stadium on a tight urban site, blending historic and modern architecture, and designing phased construction to accommodate the soccer season. KPFF surveyors employed a relatively new technique, 3D scanning, to create a point cloud model of the existing structure, which was integral to expediting design documents at the pace required to complete the \$85 million project. KPFF and Turner had worked together on the stadium during its 2009-2011 transformation from a baseball field to a soccer field. Their knowledge of the site, utilities and foundations helped the team streamline design and foresee challenges.

Civil and geotechnical engineers were aware that the current turf field sits directly on top of the historic Tanner Creek Sewer. Heavy construction vehicles could disturb the historic brick sewer structure, so the contractor built a temporary land-bridge to mitigate the risk. Key to the visual



design is the 120-foot-long cantilevered woven steel roof canopy. The most amazing display of engineering and design is the superstructure, offering protection from the weather and excellent sightlines from all seats. This required punching new foundations and columns through the existing floors. Structural engineers recommended a micro-piles foundation system. Drilling rigs had to be temporarily supported by the existing steel decks during construction. Auger-cast piles were used to accomplish this, since common drill rigs would be too heavy. More than 200 micro-piles were drilled from street level down to field level.

Environmentally sensitive improvements – a new LED sports lighting system, low-flow fixtures, 100-percent renewable energy purchased –

boosted Providence Park's status from LEED Silver to Gold certification.

Phased construction was required to occur mainly during the Timbers' and Thorns' off-seasons. Construction was delayed in 2017 as the Timbers extended their season into the playoffs, and by two months in 2018. This was a challenge for the project team as they needed to complete the expansion, entrances, concessions, field, lighting and team rooms by the Timbers' home opener June 1, 2019. The stadium received its certificate of occupancy May 31. That's one big win for the engineering, architecture and building team!

"KPFF set a new standard of ingenuity for design. This project demonstrates the value of

engineers collaborating with architects to deliver inspirational design using the latest structural techniques and technology," Ken Puckett, senior vice president of operations, Peregrine Sports, said of the project.

"Together the KPFF Consulting Engineers/ Allied Works Architects/Turner Construction design mitigated every challenge the extremely complex site presented and delivered a complex superstructure and a robust storm water management system," Puckett wrote in a letter supporting the project for an ACEC Oregon Engineering Excellence award.

"Thanks in great part to KPFF's initiative, resourcefulness and coordination with our entire project team, we were able to finish completion of Providence Park in time for the Timbers' and Thorns' regular-season home openers, while completing the project on budget," he wrote. "This was a monumental feat."

Best in Category: Transportation

I-205: JOHNSON CREEK - GLEN JACKSON BRIDGE PHASE 2

Submitting Firm: David Evans and Associates Inc.

Location: Portland, Oregon

Client/Owner: Oregon Dept. of Transportation

Other Consultants/Key Participants: 3D Infusion (structure drafting), Casso Consulting (erosion control), DKS Associates (traffic engineering), Emerio Design (roadway design), GRI (geotechnical engineering), JLA Public Involvement (public involvement), Kerr Contractors Oregon (contractor), Northwest Geotechnical Consultants (hazardous materials), Schneider Consulting (scheduling/constructability), Tammy J. Taggart CAD Services (roadway drafting)



in transportation funding over 10 years. To ensure that happened, ODOT set a date for substantial completion of Oct. 31, 2019.

The \$30 million safety operations and preservation project involved building two northbound auxiliary lanes between Powell/Division and I-84, rebuilding the Washington Street exit to a two-lane exit, four miles of pavement preservation, and construction of 20 overhead sign structures. DEA led a project design team that completed 100 percent bid documents in 10 months. During the accelerated design phase, DEA and its team aligned the project scope and budget, developed preliminary and final design, stepped through five major

milestone review submittals, secured permits, supported the environmental approval process, resolved utility connection and conflict issues, produced a 400-sheet plan set, and provided all deliverables to go to bid. The team met all deadlines, including bidding the project on the exact date specified more than a year before.

Full teams met weekly and ODOT was a partner throughout the project, prioritizing and expediting decisions, reviews and approvals during each submittal. The team – which included 3D Infusion, Casso Consulting, DKS Associates, Emerio Design, Geotechnical Resources Inc., JLA Public Involvement, Kerr Contractors, Northwest Geotechnical Consultants, Schneider Consulting and Tammy J. Taggart CAD Services – implemented several innovative methods to address major risks that could delay the critical path during construction. Those innovations included



advance procurement of Active Transportation Management System signs and sign structures, advance utility service connections, multiple interim completion dates, and a weekend closure of I-205 northbound. To the team's knowledge, none of the methods had been used on prior ODOT projects on a project of this scale and importance, and certainly not at the same time.

To lighten the mood during a busy and stressful construction time, and in recognition of the era when I-205 was built, the team named each overhead site sign after an '80s rock band. Those included: Site L – Led Zeppelin, Site N – Nirvana, Site H – Huey Lewis, Site S – Styx, Site T – Talking Heads, Site P – Pink Floyd, Site R – REM, Site V – Van Halen, Site A – AC/DC, Site E – Eagles, Site O – Ozzy and Site Q – Queen.

"The partnership between ODOT, DEA, and their sub-consultants was a major contributor to the success of the project," wrote Tova Peltz, ODOT Region 1 project delivery manager, in support of the project for an ACEC Oregon Engineering Excellence Award. "On behalf of the transportation industry and all motorists in Oregon, we are sincerely thankful for their notable contributions."

Trigger Project Successful completion of I-205 work will 'Keep Oregon Moving'

Deliver a highly complex project on time or lose billions in future highway funds. No pressure, right? No problem for David Evans and Associates and its project team.

The Oregon Department of Transportation contracted with DEA as the prime consultant for the I-205: Johnson Creek-Glen Jackson Bridge Phase 2 project. Part of the Keep Oregon Moving House Bill 2017, the Oregon Legislature designated this project be built by Dec. 1, 2019. Known as the "trigger project," completion was required to trigger the 2020 gas tax increase, part of generating \$5.3 billion

Best in Category:

Water, Wastewater & Storm Water Systems

TUALATIN INTERCEPTOR AND SIPHON IMPROVEMENTS PHASE A

Submitting Firms: Kennedy Jenks Consultants, Shannon & Wilson, Aldea Services and Mortenson Construction

Location: Tualatin, Oregon

Client/Owner: Clean Water Services

Other Consultants/Key Participants: K&E Excavating (construction contractor), Michels Tunneling (tunneling contractor)



Microtunnel Vision

Team approach meets client's objectives and sets engineering record

Not only does Progressive Design-Build contracting boost collaboration and success of challenging projects, it also can result in an engineering record.

When Clean Water Services awarded a design-build contract to Kennedy/Jenks and Mortenson Construction in October 2017, it knew it was giving them a difficult project: build an interceptor segment and siphon to convey wastewater from the Sherwood and Bull Mountain areas of southwest Washington County to accommodate rapid residential development. Phase A involved replacement of the existing Tualatin Interceptor segment and King City Siphon, and increased capacity of the crossing from 7.8 MGD to 21.6 MGD.

Kennedy/Jenks worked with Shannon & Wilson and Aldea Services to prepare the design of the Tualatin River Crossing from King City to Tualatin. They collaborated

with contractors Mortenson Construction, K&E Excavating and Michels Tunneling, who provided vital constructability and cost feedback to the design team. The design covered projected sewer capacity requirements, geotechnical conditions, seismic risk, constructability, maintainability, and stakeholder concerns to provide a long-term solution for CWS.

The Tualatin Interceptor and King City Siphon were built in 1974 through open cut construction across the Tualatin River. Open cut construction of the river crossing in 2018 could not be permitted and completed within the project timeframe, so trenchless construction methods were evaluated. The hydraulic constraints of the sewers feeding the interceptor and stakeholders on both sides of the river led the design team to select microtunneling as the construction method. The

microtunnel was built 471 feet long in a 650-foot radius vertical curve with an 84-inch outer diameter precast concrete casing.

Selecting a microtunnel for the siphon allowed construction without impacting the river. It also allowed construction to meet a development-driven timeline and be ready in time for new home construction west of Bull Mountain. The microtunnel crossing is more seismic-resilient given the site conditions and constraints of the trunk lines feeding the interceptor. The siphon does not require pumping and can be easily maintained.

The Progressive Design-Build method allowed unparalleled collaboration between designers and builders, and was critical to meeting the development-driven timeline. Shannon & Wilson's seismic evaluation and Aldea Services' trenchless feasibility evaluation gave Kennedy/Jenks the assurance the microtunnel could be built within the required constraints. The project was completed under budget and the tunnel was completed within 3.5 inches of planned alignment in all directions. The 650-foot vertical curve set a North American record for tightest vertical curve microtunnel of this diameter.

"Kennedy/Jenks, Shannon & Wilson and Aldea were very responsive and worked closely with the district and constructors to complete a complex and challenging project on time and under budget," wrote Wade Denny, PE, senior engineer with Clean Water Services, in a letter recommending the project for an ACEC Oregon Engineering Excellence Award. "Their efforts toward the successful completion of the project are commendable."

Grand Award

BETHLEHEM INN REDEVELOPMENT

Submitting Firm: RH2 Engineering Inc.

Location: Bend, Oregon

Client/Owner: Bethlehem Inn

Other Consultants/Key Participants:

Ascent Architecture (architectural design, permitting), H.A. McCoy Engineering & Surveying (survey, dry well inspection, testing), Shamrock NW Construction (sitework, utilities), SunWest Builders (building construction), Wallace Group (geotechnical engineering)

Commitment to community comes in many forms. For RH2 Engineering, that commitment involved donating all planning, design, and construction engineering services to redevelop non-profit homeless shelter Bethlehem Inn.



Originally a 1960s motel, Bethlehem Inn offers temporary housing, meals, case management, access to transportation and work experience for its residents. Operators found they needed more space and needed a complete overhaul of the facilities. The mission and vision, Transforming Lives with Shelter and Hope, was to increase its reach two-fold, provide expanded services and be an ADA-compliant facility.

RH2, with its project team – Ascent Architecture, H.A. McCoy Engineering & Surveying, Shamrock NW Construction, SunWest Builders and Wallace Group – phased the project so the Inn remained fully operational during construction. First phase improvements included clearing and grading, demolition

of existing buildings, temporary erosion and sedimentation control, and temporary water and sewer connections. Additional phases involved constructing new buildings, installing new stormwater facilities, final grading, and permanent water and sewer pipelines and connections. The size of the site posed challenges. Utility coordination between the phases left little room for new utility extensions and required that the parking lot stormwater system and the majority of the paving was the last project element constructed.

With the redeveloped facility, Bethlehem Inn now is able to serve twice as many individuals and families, and offers full food service with a new commercial kitchen.



All increased gas tax funding for Oregon's transportation investment depended upon the completion of this crucial project on I-205. The team at Kerr Contractors, working with ODOT and David Evans, accepted the challenge and delivered the project on-time.

Grand Award

EARTHQUAKE READY BURNSIDE BRIDGE FEASIBILITY STUDY

Submitting Firm: HDR

Location: Portland, Oregon

Client/Owner: Multnomah County

Other Consultants/Key

Participants: EnviroIssues, JLA Public Involvement, Parametrix, Shannon & Wilson

When it comes to earthquakes, Portland is on shaky ground.

Experts predict there's a one-in-three chance that an 8-plus magnitude quake will hit the region sometime in the next 50 years. Metro has designated Burnside Street – which runs from Washington County to Gresham – as an emergency lifeline route. In the event of a disaster,



the route allows first responders to get to where they need to go and to help distribute supplies. Multnomah County began a feasibility study in 2016 to ensure the Burnside Bridge is ready.

The study included an analysis of more than 100 Willamette River crossing options including tunnels, ferries and other bridge options. HDR was the lead firm for the study, working with Shannon & Wilson, Parametrix, JLA Public Involvement and EnviroIssues.

To demonstrate a need for action, animators created a true-to-life video of how the Burnside

Bridge would shake, sway and crumble onto nearby interstates and into the Willamette River during an earthquake. One of the challenging aspects of the project was trying to predict how a nearly 100-year-old bridge will react during an earthquake while maintaining its historical charm and multimodal characteristics. The bridge is underlain by poor quality, liquefiable soils and insufficient footing sizes and pile depths. The study recommends four bridge alternatives for further evaluation. A preferred alternative is expected to be selected in 2021, with construction beginning in 2024.

Grand Award

HISTORIC COLUMBIA RIVER HIGHWAY TRAIL

Submitting Firm: Cornforth Consultants Inc.

Location: Hood River, Oregon

Client/Owner: Federal Highway Administration Western Federal Lands Highway Division, Oregon Department of Transportation

Other Consultants/Key Participants:

Jacobs (civil and structural engineering), Rock Supremacy (construction contractor), Stellar J Corp. (construction contractor), Walker Macy (landscaping)

Recreate history. That's the task Cornforth Consultants and its team members – Jacobs, Rock Supremacy, Stellar J Corp. and Walker Macy – tackled when they took on the Historic



Columbia River Highway Trail project. The project is the second, and largest, of several projects that will reconnect abandoned segments of the original Columbia River Highway to create a bicycle and pedestrian trail along Interstate 84 in the Columbia River Gorge.

The Historic Columbia River Highway was designed by Samuel Lancaster to emulate the beauty of the Axenstrasse, a roadway carved into cliffs above Lake Lucerne in Switzerland. Completed in 1922, sections had to be removed for construction of I-84. In 1987, Congress tasked ODOT with reconnecting the missing sections to provide a continuous route between Troutdale and The Dalles. Cornforth was contracted by the FHA as the geotechnical designer for a hiking/

cycling-only segment between Gorton Creek and Starvation Creek, located within the Columbia River Gorge National Scenic Area.

The main challenge for the team was to develop a design that would meet modern performance objectives while complementing the visual resources of the area. Reconnecting the highway required four new bridges, 16 retaining structures and a major rock cut. Each of the features had to meet strict aesthetic requirements to obtain a National Scenic Area permit. Cornforth's designers used scaling and bolting patterns to stabilize rock slopes, along with an innovative anchored mesh system and backstop barriers to prevent rockfall from reaching the trail and freeway.

Small Project Award

KELLOGG CREEK BRIDGE EMERGENCY REPLACEMENT PROJECT

Submitting Firm: Otak Inc.

Location: Milwaukie, Oregon

Client/Owner: City of Milwaukie

Other Consultants/Key

Participants: Global Transportation Engineering, GRI, HP Civil Inc., Reeve Sherwood Consulting LLC



New Kellogg Creek Bridge designed with future in mind

Building a bridge is no small task. Building one in a challenging area makes the job even harder.

The original Kellogg Creek Bridge was built in 1957 over the mouth of Kellogg Creek approaching the Willamette River in Milwaukie. The 20-foot-wide, single-span structure was in disrepair after heavy rains in 2015 caused flood damage to a nearby bank and scour damage under the footings. The city of Milwaukie received FEMA funding for its replacement.

The design-build team of Otak and HP Civil worked together to design and build the bridge under an expedited timeline. Other team members included Global Transportation Engineering, GRI and Reeve Sherwood Consulting LLC. Project challenges included building a bridge under the 100-year flood elevation; dealing with seismic liquefaction on one side of the bridge only; threading piling around a large sewer main; protecting an

historic and active fish ladder; allowing the existing bridge serving the boat launch and egress from the nearby water facility to remain open during construction; and maintaining passing truck traffic with unusual and challenging roadway geometry. The team also had to allow for future removal of the adjacent dam and future trail beneath the bridge.

The new 30-foot-wide bridge has an ADA-compliant sidewalk and 24 feet of travel way – enough to accommodate bicycles and large vehicles. The length increased to 125 feet – long enough to span over and accommodate a future multiuse trail along Kellogg Creek and allow other shoreline and habitat modifications for future removal of Kellogg Dam. The project was finished in October 2018, a year ahead of schedule.



HONOR AWARDS

BEND MUNICIPAL AIRPORT HELICOPTER OPERATIONS AREA

Submitting Firm: Century West Engineering

Location: Bend, Oregon

Client/Owner: City of Bend, Bend Municipal Airport

Other Consultants/Key Participants: Environmental Science Associates, Foundation Engineering, Jack Robinson & Sons, John Thompson & Associates Inc., Kittelson & Associates Inc., R&W Engineering

Noteworthy: The project used three FAA grants, two ConnectOregon grants, and a share of local city of Bend funding to construct one of the largest helicopter-specific facilities in the West.



BLACKBURN CENTER

Submitting Firm: Harper Houf Peterson Righellis Inc.

Location: Portland, Oregon

Client/Owner: Ankrom Moisan Architects (client), Central City Concern (owner)

Other Consultants/Key Participants: Ankrom Moisan Architects (architect), Carlson Testing Inc. (geotechnical engineer), Global Transportation Engineering (traffic engineer), Glumac (MEP engineering), Miller Consulting Engineers Inc. (structural engineer), Shapiro Didway (landscape architect), Walsh Construction (general contractor)

Noteworthy: The center provides a unique, integrated approach to treating homelessness by providing housing, health care, and employment under one roof. HHPR's civil engineering laid the groundwork for this unique mixture of uses and provided a template for future projects in our community.

BULL MOUNTAIN TRUNK IMPROVEMENTS

Submitting Firm: AKS Engineering & Forestry

Location: Tigard, Oregon

Client/Owner: Clean Water Services

Other Consultants/Key Participants: Earth Dynamics LLC (geophysical consulting firm), Emery & Sons Construction Group (utility contractor), Miller Consulting Engineers Inc. (structural engineer), Shannon & Wilson (geotechnical engineer), Universal Field Services Inc. (right-of-way services), Willamette Cultural Resources Associates (cultural and historical consultant)

Noteworthy: A project of this size and complexity, with adverse conditions and scheduling conflicts among other challenges, would have taken as many as five years to complete. The team substantially completed this project one month ahead of an ambitious two-year schedule and \$1 million under budget.



CHETCO POINT MEMORIAL TRAIL PROJECT

Submitting Firms: GRI and David Evans and Associates Inc.

Location: Brookings, Oregon

Client/Owner: City of Brookings

Noteworthy: This project demonstrates that a unified design and construction team having a common goal to bring greater public access to a spectacular scenic area can spark innovative engineering and deliver an ambitious project with limited funding and resources.

CLACKAMAS COMMUNITY COLLEGE TRANSPORTATION IMPROVEMENTS

Submitting Firms: GRI and KPFF Consulting Engineers

Location: Oregon City, Oregon

Client/Owner: inici group (client), Clackamas Community College (owner)

Other Consultants/Key Participants: Mahlum Architects (architectural design), Walker Macy (landscape architecture)

Noteworthy: Sustainability was a strong consideration in the design of this project and, to this end, both parking lots and loop road were built using full-depth reclamation recycled pavement material coupled with on-site stormwater treatment. GRI and KPFF proved pavement can be beautiful!



FIRST STREET IMPROVEMENTS:

Submitting Firm: Harper Houf Peterson Righellis Inc.

Location: Woodburn, Oregon

Client/Owner: City of Woodburn

Other Consultants/Key Participants: DKS Associates (traffic engineer), GeoDesign (geotechnical engineer), Morgan Holen Associates (arborist)

Noteworthy: The project demonstrates how a small town can revitalize its economy by enhancing and refining the downtown corridor, inviting future development and growth.

GRABHORN RESERVOIR REPLACEMENT – PDB DELIVERY

Submitting Firms: Keller Associates Inc. and Shannon & Wilson Inc.

Location: Beaverton, Oregon

Client/Owner: Tualatin Valley Water District

Other Consultants/Key Participants: Angelo Planning Group (land use development), DN Tanks (prestressing contractor), Emery & Sons Construction Group (contractor), GreenWorks (landscape/stormwater architecture), Marion Construction Co. (concrete contractor), Pacific Habitat Services Inc. (environmental permitting), Protec Security (security), S&B Inc. (instrumentation and controls), Westlake Consultants Inc. (surveyor)

Noteworthy: The team showed that progressive design-build delivery results in cost savings and spurs innovation for complex and challenging projects.



HANNAH MASON PUMP STATION

Submitting Firm: Peterson Structural Engineers

Location: Portland, Oregon

Client/Owners: Murraysmith (client), Portland Water Bureau (owner), City of Portland Parks and Recreation (owner)

Other Consultants/Key Participants: BEA Consulting LLC (plumbing engineer), Hart Crowser Inc. (geotechnical engineer), MWA Architects (architect), MWH Global (electrical engineer), Susan Oman (landscape architect)

Noteworthy: This innovative team came together to develop a highly efficient and sustainable, yet also visually appealing, pump station that complements the natural environment in which it's found. The facility not only provides water service to the surrounding areas, but is able to unite these two functions together to eloquently serve the community in various manners.

KEMMER ROAD INTERSECTION

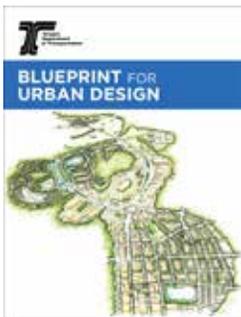
Submitting Firm: Parametrix

Location: Washington County, Oregon

Client/Owner: Washington County

Other Consultants/Key Participants: Dave Mills Consulting Inc. (land survey), DKS Associates (traffic analysis, illumination, signage and striping design), GeoDesign Inc. (geotechnical engineer), Kerr Contractors (general contractor)

Noteworthy: The new roundabout improves mobility and safety in a rapidly growing area. Increased traffic associated with a new high school and several residential developments now travels smoothly through the intersection, reducing pollution associated with idling cars that had waited in long lines at a stop-controlled intersection. New pedestrian and bike facilities will connect to regional trails.



ODOT BLUEPRINT FOR URBAN DESIGN

Submitting Firm: Kittelson & Associates Inc.

Location: Portland, Oregon

Client/Owner: Oregon Department of Transportation

Other Consultants/Key Participants: Jacobs

Noteworthy: The blueprint provides statewide urban design guidance based on a performance-based design framework. It emphasizes the need to identify appropriate design dimensions and multimodal treatments based on the urban land use contexts and functional classifications.

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PACIFIC CITY WASTEWATER TREATMENT PLANT

Submitting Firm: Parametrix

Location: Pacific City, Oregon

Client/Owner: Pacific City Joint Water-Sanitary Authority

Other Consultants/Key Participants: Applied Archeological Research (cultural resources), Dave Mills Consulting Inc. (land survey), GeoDesign Inc. (geotechnical engineer), McClure and Sons (general contractor)

Noteworthy: Significant capacity and process improvements were made to the WWTP to bring it into compliance and provide additional capacity for growth, all while keeping the plant operational throughout the entire process.



REPLACING THE C-FLUME

Submitting Firms: Anderson Perry & Associates Inc. and Adkins Engineering and Surveying

Location: Klamath Falls, Oregon

Client/Owner: Klamath Irrigation District

Other Consultants/Key Participants: Plastek Werks Inc. (subcontractor), R&G Excavating Inc. (general contractor)

Noteworthy: This project shows that with some creative engineering, it is possible to weave a nearly 1-mile-long, 10-foot-diameter pipe over, under, and around major obstacles with extremely tight hydraulic constraints. As the firms' stated: where there's a will, engineers will find a way.

RIDGEFIELD OUTDOOR RECREATION COMPLEX

Submitting Firm: PBS Engineering and Environmental

Location: Ridgefield, Washington

Client/Owner: City of Ridgefield

Other Consultants/Key Participants: Halliday Associates Inc. (food service), Kramer Gehlen & Associates Inc. (structural engineering), LSW Architects PC (architect), MBF Audiovisual & Acoustical Consulting (audio/visual), MKE & Associates Inc. (electrical and mechanical engineering), Robertson Engineering PC (site plan engineering), WSP (landscape architecture)

Noteworthy: The recreation complex fulfilled the needs of the city and Ridgefield School District by successfully creating a gathering space for community and sports events.



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SW 124TH AVENUE IMPROVEMENTS

Submitting Firm: David Evans and Associates Inc.

Location: Washington County, Oregon

Client/Owner: Washington County

Other Consultants/Key Participants: Casso Inc., city of Hillsboro, DKS Associates, Flux, GeoDesign Inc., HDR Inc., Kerr Contractors, Stantec, Tualatin Valley Water District

Noteworthy: Local agencies came together with a common vision and shared funding strategy to increase employment opportunities, improve transportation safety, establish water supply resiliency, and reduce congestion along the corridor. The new corridor is helping keep the economy growing, people moving, and water flowing.



US 101 @ OR 6 (TILLAMOOK)

Submitting Firm: Quincy Engineering

Location: Tillamook, Oregon

Client/Owner: Oregon Department of Transportation, City of Tillamook

Other Consultants/Key Participants: DKS Associates (traffic signals/lighting design), Mason, Bruce & Girard Inc. (environmental permitting), HDR Inc. (right-of-way), Otak (landscape architect, hydraulics/stormwater design, structure design), Shannon & Wilson (geotechnical)

Noteworthy: This project revitalized the city of Tillamook and brought an economic boost to the community. With a focus on urban renewal, the city was able to not only free up traffic along a busy bridge entering downtown, but also improve access to historic buildings and business. The addition of a festival street will allow years of future events to take place.

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