2025 PCI DESIGN AWARDS

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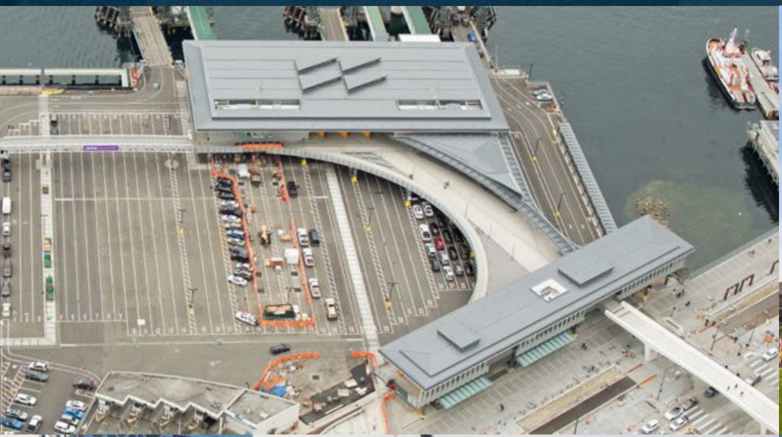

2026 PCI DESIGN AWARDS
CALL FOR ENTRIES
Join us in our search for excellence and submit your projects electronically by **Tuesday, July 8, 2025**.
The PCI Design Awards is not just looking for design excellence, but also for projects with outstanding use of precast concrete. PCI looks for projects that push the envelope and advance the precast concrete industry.
The PCI Design Awards program showcases winning projects in multiple ways:
■ PCI Convention Reception
■ Full coverage in PCI publications
■ Opportunity to appear on the front cover and/or as a project feature of *Ascent*
■ Special project video
■ Dedicated project profile on PCI website
■ Editorial coverage in external, local, and national magazines
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2025 PCI DESIGN AWARDS

The 62ND PCI Design Awards Winners

Sustainability has become inherently more significant in our everyday lives, and the 2025 PCI Design Awards winners exemplify how precast concrete is the perfect building material to endure nature's challenges and protect lives.

This year's winners not only demonstrate the durability, flexibility, functionality, and aesthetics of precast concrete, but also shine light on the importance of collaboration among team members.

The exceptional qualities of precast concrete and the sheer excellence of the teams that design and produce precast concrete structures have drawn the attention of owners throughout the world. When the owner for Baptist Hospital Campus, the recipient of the Sustainable Design Award, wanted a durable, long-lasting and aesthetically pleasing building, they selected a precast concrete design to meet all the requirements. To ensure the comfortability of patients, visitors, and employees, this precast concrete hospital is built to withstand a 1000-year storm, Category 5 hurricane, and 200 mile-per-hour winds. Also paying homage to Pensacola's historical character, the structure not only showcases how precast concrete is a great building material for aesthetic versatility, but also for occupant safety.

Such was the importance for the team of Blue Hill Falls Bridge over Salt Pond Outlet in Maine. This historic bridge replacement is a perfect representation of what happens when a skilled project team uses precast concrete to meet complex structural and aesthetic challenges. The team's priorities were to provide a resilient structure with a long service life, limit the overall environmental impact, ensure public safety, and preserve historical attributes. Alongside precast concrete, the team integrated granite-stone masonry pieces from the original historic bridge, exhibiting the extraordinary capabilities of precast concrete to meet necessary sustainability goals and historic compatibility.

Also displaying historic reflection, the Odea Montréal in Quebec is a symbolic building that pays homage to the Cree Nation, one of Canada's largest First Nations. Inspired by the shape of a canoe, the structure integrates cultural values and elements of the Cree Nation, creating a visually stunning, historically resonant landmark for the community. The design team aimed to honor the Cree Nation's dedication to preserving the land by emphasizing environmental protection, reducing carbon emissions, and facilitating the health and well-being of current and future residents.

A second crew that placed the well-being and safety of occupants at the forefront was the team for the All-Precast Concrete Parking Structure recipient, University of California Davis Health Parking Structure IV. With the use of precast concrete, this building is designed to sustain little to no damage during a major seismic event, meaning the structure can be reoccupied almost immediately. The U.S. Resiliency Council (USRC) awarded Platinum status to this parking structure in recognition of the team's commitment to providing the highest levels of building performance and their dedication to a more resilient, sustainable world.

These projects, like many of our PCI Design Awards winners, continue to exemplify the crucial role precast concrete plays in promoting public safety, fostering communities, and sustaining the future of our planet. This year's three juries, consisting of an array of industry experts, selected 14 buildings, five specials, five transportation, and 14 honorable mentions to represent the best-of-the-best in the industry. These award-winning structures establish the pursuit of longevity and environmental efforts within our member companies, demonstrating just how high a priority protecting lives and the planet is to the precast concrete industry. PCI is proud to recognize and celebrate the significant achievements of the 2025 PCI Design Awards winners.

2025 PCI Design Awards

TRANSPORTATION SPECIAL AWARD

STORIES BY MASON NICHOLS,
a Grand Rapids, Mich.-based writer and editor who has covered the precast concrete industry since 2013.

SPECIAL AWARDS JURY

MARY ANN GRIGGAS-SMITH

Mary Ann Griggas-Smith, FPCI, is the director of engineering at Tindall, where she manages a group of more than 30 engineers and modelers in addition to coordinating companywide policies and standards. Before she joined Tindall in 2012, Griggas-Smith was a co-owner of a consulting company working exclusively for the precast concrete industry.

Griggas-Smith holds a bachelor's degree and a master's degree from Tulane University. A PCI Fellow, she has served on the Industry Handbook Committee, the Fire Committee, and the Technical Activities Council.

TIMOTHY HAWK

Timothy Hawk, FAIA, is nationally recognized as an architectural practice leader, designer, and educator. Since 2005, Hawk has served as president of WSA, a multidisciplinary design studio, in Columbus, Ohio. He has received nearly 30 national and regional design awards for projects completed under his leadership.

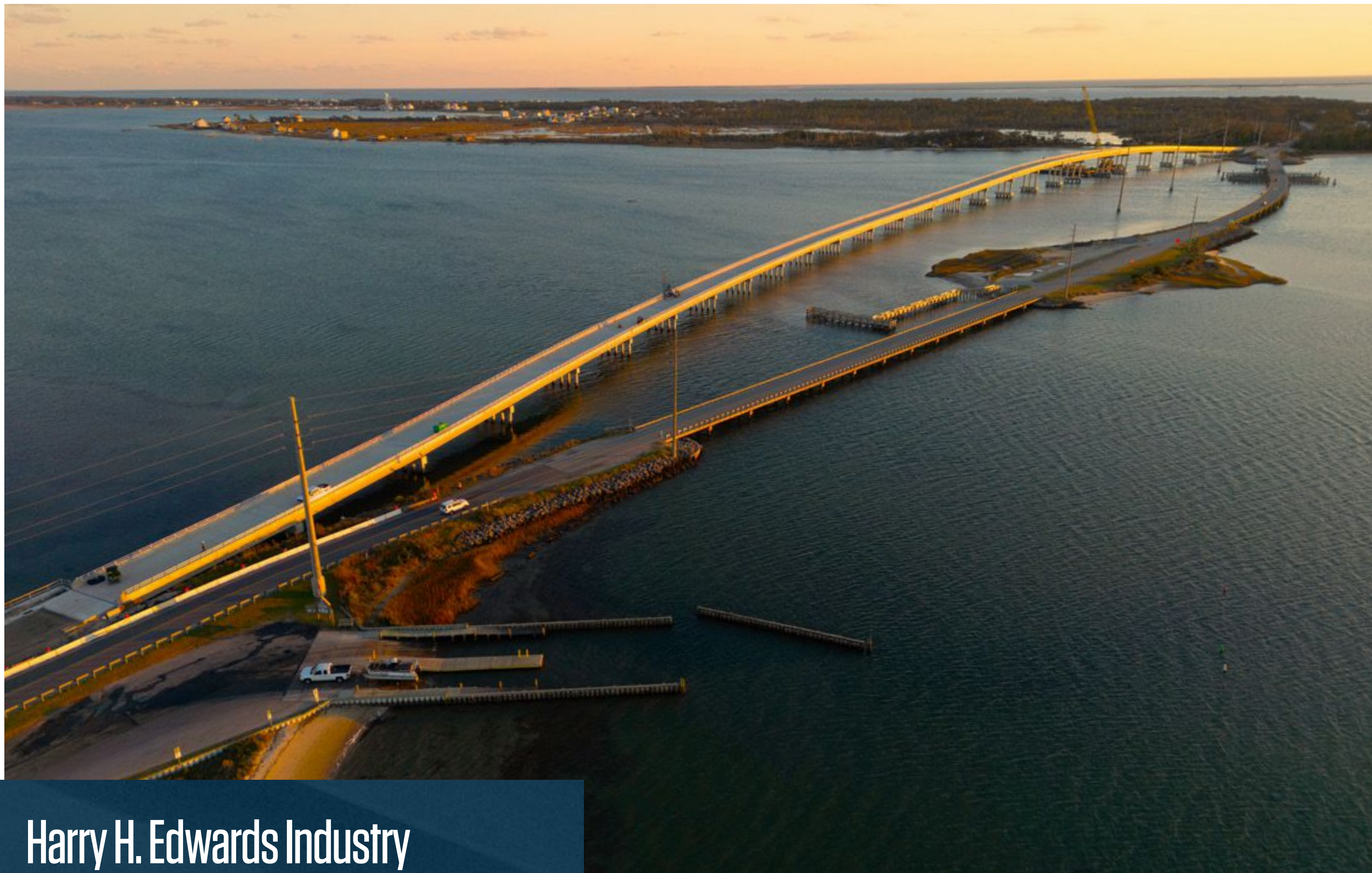
Hawk has served as an officer of the American Institute of Architects (AIA) at the national level, a national director for the American Institute of Architecture Students, and president of AIA Columbus. Hawk is also a member of the board for the Neighborhood Design Center in Columbus, the Columbus Center for Architecture and Design, and the Grandview Heights, Ohio, planning commission.

As an educator, Hawk has focused on increasing access to architectural education. For 25 years, he has been an adjunct architectural faculty member at Columbus State Community College, and recently he joined the Knowlton School of Architecture at The Ohio State University as a lecturer in the graduate program.

JORDAN WATKINS

Jordan Watkins, PE, is the chief executive officer for the portfolio of PTAC Companies, where he is responsible for direct oversight and strategic leadership of PTAC's engineering, software development, parking consulting, real estate and land development, and construction companies.

Watkins has served as vice chair of PCI's BIM Committee. He has also been a member of the Associate Supplier/Services Member, Industry Handbook, LPCI Alumni, and Parking Structures committees.



Harry H. Edwards Industry Advancement Award *and* Bridge with a Main Span From 76-200 Feet

HARKERS ISLAND BRIDGE REPLACEMENT

HARKERS ISLAND, NORTH CAROLINA

PROJECT TEAM

Owner and Engineer of Record: North Carolina Department of Transportation, Raleigh, N.C.

PCI-Certified Precast Concrete Producer: Coastal Precast Systems, Chesapeake, Va.

General Contractor: Balfour Beatty, Wilmington, N.C.

Project Size: 3200 ft^2

Steel and salt are generally not a great match. When bridges are built in harsh saltwater environments, internal components, including reinforcement and prestressing strands, are at risk for corrosion and eventual replacement, especially as structures age. On the eastern shores of North Carolina, such was the case for the Earl C. Davis Memorial Bridge (a drawbridge) and its companion structure, bridge no. 96. After more than a half century of service, both bridges, which connected Harkers Island with the mainland, had deteriorated beyond repair, creating transportation issues for vehicular traffic and commercial and recreational vessels attempting to navigate around Harkers Island. In partnership with precast concrete manufacturer Coastal Precast Systems and general contractor Balfour Beatty, the North Carolina Department of Transportation (NCDOT) turned to precast concrete and corrosion-resistant reinforcement for a new high-rise bridge solution that leverages innovative, resilient reinforcement in its design.

SALTING AWAY CORROSION

According to Trey Carroll, assistant state structures engineer with NCDOT, the agency's standard policy for highly corrosive areas is to use precast concrete girder superstructures and precast concrete pile substructures with mixture designs that include silica fume, fly ash, and a calcium nitrite corrosion inhibitor. Therefore, the NCDOT team knew from the start that a structure designed with precast concrete components represented the best option for the new Harkers Island Bridge. Additionally, the NCDOT engineers chose glass-fiber-reinforced

Photos: Balfour Beatty

polymer (GFRP) bars and carbon-fiber-reinforced polymer (CFRP) prestressing strands to help ensure the bridge's long-term success.

"An effective way to address durability challenges is to eliminate one of the sources resulting in corrosion, which in the case of precast concrete bridges is the internal steel reinforcing and prestressing strands," Carroll said. "The use of noncorroding fiber-reinforced polymer is a demonstrated, viable alternative to steel. Typical maintenance and repair associated with steel-reinforced concrete is eliminated, increasing the useful service life and resilience of the structure."

The new 3,200-ft-long, 28-span bridge has a cast-in-place sand lightweight concrete bridge deck reinforced with GFRP bars, which is supported by CFRP prestressed concrete Florida I-beam (FIB) girders with GFRP stirrups. The substructure includes more than 200 24-in.-square precast concrete piles manufactured with CFRP strands. NCDOT selected precast concrete piles for the bridge's foundation because they are resilient in marine environments and can be erected efficiently. At the jobsite, there was a moratorium on in-water work from April 1 to September 30 to protect the marine environment, and the selection of precast concrete piles and girders allowed Balfour Beatty to move quickly within the appropriate work windows.

"By using precast, prestressed concrete piles, the contractor was able to immediately begin substructure installation during the initial six-month in-water construction window and get ahead of schedule," Carroll said. "This contributed to the bridge opening to traffic in December 2023, 10 months ahead of the contract schedule."

Travelers in the area are already benefitting immensely from the Harkers Island Bridge, which features 125 ft of horizontal clearance and 45 ft of vertical clearance. This allows both recreational and commercial vessel traffic to efficiently navigate through the area while also enabling motorists to pass without worrying about delays resulting from drawbridge openings.

Overall, the project represents a monumental accomplishment for all parties. It is the state's first concrete bridge reinforced entirely with GFRP bars and CFRP prestressing strands. The bridge provides safe vehicular access for Harkers Island residents and visitors during both everyday travel and extreme weather events. And, thanks to the success of the effort, the project is now being used as a model for other projects where precast and prestressed concrete components with GFRP and CFRP reinforcement can improve long-term resilience and durability.

"This project demonstrates how precast [concrete] can be used with GFRP reinforcement and CFRP strands to create a bridge with an increased service life and resiliency, and decreased maintenance costs."

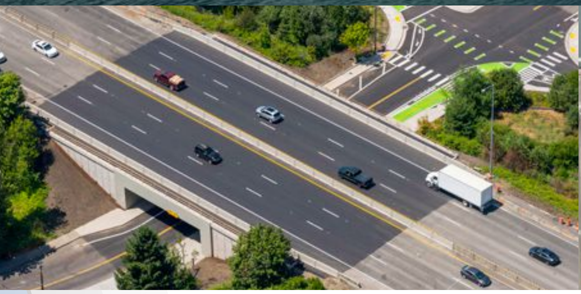
—David Garber, Federal Highway Administration

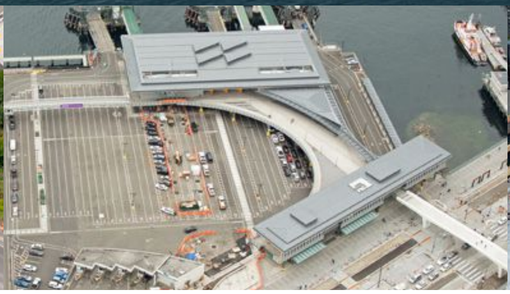
KEY PROJECT ATTRIBUTES

- Two aging bridges connecting Harkers Island with the North Carolina mainland were replaced by a new bridge featuring precast concrete piles and girders.
- GFRP bars and CFRP prestressing strands were used to help resist corrosion from saltwater and extend the bridge's service life.
- The new bridge has 125 ft of horizontal clearance and 45 ft of vertical clearance, improving safety for motorists crossing the bridge as well as boaters and commercial vessels navigating the waters below.

PROJECT AND PRECAST CONCRETE SCOPE

- Using precast concrete piles for the bridge's foundation accelerated erection, allowing NCDOT to open the Harkers Island Bridge 10 months ahead of schedule.
- The 3200-ft-long bridge has 28 spans.
- The new Harkers Island Bridge was constructed with more than 200 24-in.-square precast concrete piles and more than 100 prestressed concrete FIB girders of varying sizes.





2025 PCI Design Awards

TRANSPORTATION AWARDS

TRANSPORTATION AWARDS JURY

DAVID GARBER

David Garber, PhD, is a senior structural engineer with the Federal Highway Administration (FHWA) Resource Center, where he provides concrete bridge expertise to internal and external stakeholders. He received a bachelor of science degree from Johns Hopkins University and has a master of science and a PhD from the University of Texas at Austin.

Before joining FHWA in June, Garber was an associate professor and interim department chair at Florida International University. His research, which included large-scale experimental and analytical efforts, focused on the behavior and design of prestressed and reinforced concrete members, accelerated bridge construction, and ultra-high performance concrete. He has been involved in the development of recommendations and code specifications that have been implemented in state and national standards. Garber is the author of 23 peer-reviewed journal articles, 17 technical reports, and 13 refereed conference proceedings, and he has delivered numerous conference presentations. Garber received the PCI 2021 Educator of the Year Award for his contributions to the precast concrete industry in teaching and research.

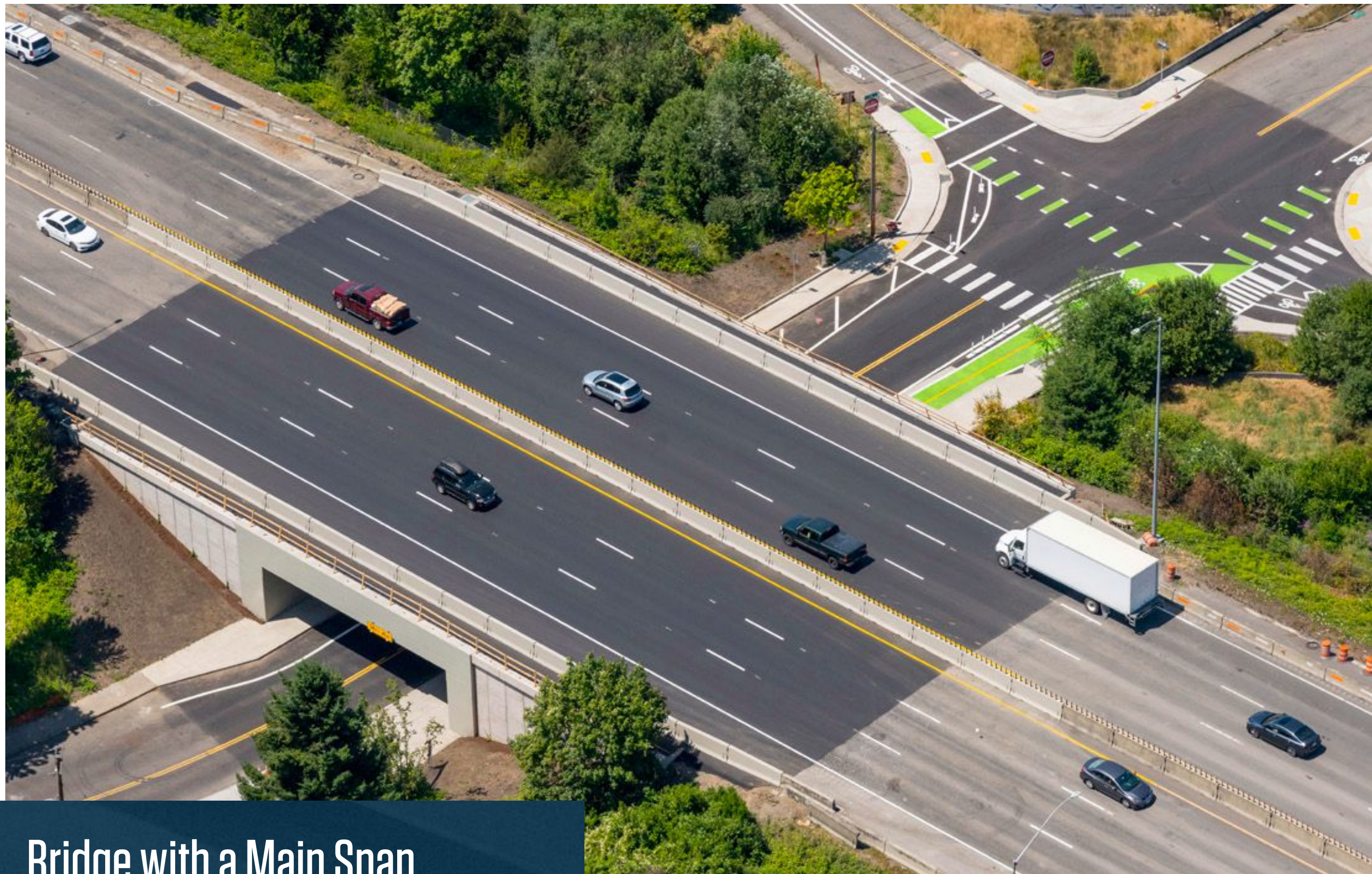
FRANCESCO RUSSO

Francesco (Frank) Russo, PhD, PE, is the founder and principal of Russo Structural Services. He is a former chair of the PCI Committee on Bridges LRFD Subcommittee and developed preliminary design and span capability design aids for the PCI Bridge Design Manual. He also provided technical editing and updating of the design examples in Chapter 9 of the PCI Bridge Design Manual.

LEE WEGNER

Lee Wegner is a regional sales manager for Contech Engineered Solutions, where he is responsible for the development, sales and implementation of precast projects throughout the Intermountain West. Wegner is a nationally recognized expert in the use of precast concrete for accelerated bridge and pavement construction, and his work has been highlighted at the national level by the Federal Highway Administration.

Wegner has a bachelor's degree in civil engineering from the University of Wyoming. Before joining Contech in 2004, he worked for 12 years for Kiewit Corporation, managing hundreds of millions of dollars' worth of bridge and heavy highway construction projects.



Bridge with a Main Span up to 75 Feet

I-5 OVER 26TH AVENUE BRIDGE REPLACEMENT PROJECT

PORTLAND, OREGON

PROJECT TEAM

Owner: Oregon Department of Transportation, Portland, Ore.

PCI-Certified Precast Concrete Producer: Knife River Prestress, Harrisburg, Ore.

Engineer of Record: David Evans and Associates Inc., Portland, Ore.

General Contractor: HP Civil Inc., Salem, Ore.

Project Size: 603 ft^2

Carrying more than 100,00 vehicles per day, the Interstate 5 (I-5) bridge over SW 26th Avenue in southwest Portland, Ore., is an important thoroughfare for local travelers. When it became clear that the original six-lane bridge, constructed in 1959, had experienced significant deterioration, the Oregon Department of Transportation (ODOT) concluded that the structure had to be replaced. The bridge was also not built for seismic loading, generating additional safety concerns for users. Together with project engineer David Evans and Associates Inc. and precast concrete producer Knife River Prestress, ODOT designed a unique bridge replacement solution leveraging accelerated bridge construction techniques and 28 precast and prestressed concrete slabs to achieve the project goals.

56 HOURS, ONE NEW BRIDGE

Given the large volume of daily traffic that navigates through the area, ODOT officials decided to keep all six lanes open during construction. This decision, however, meant a limited number of options were available for design. Traditional construction methods would likely require more than two years of staged traffic on I-5, undesirable temporary alignment geometry to stay within the right of way, and tightly constrained work zones.

To identify the most appropriate solution for the work, the ODOT team conducted a value engineering study and selected a design that would reduce the project's impact on I-5 traffic to a single, 56-hour-long weekend closure. The concept involved the

"The use of precast [concrete] allowed for a unique solution to be developed, allowing for the existing bridge to be replaced in only a 56-hour weekend closure."

—David Garber, Federal Highway Administration

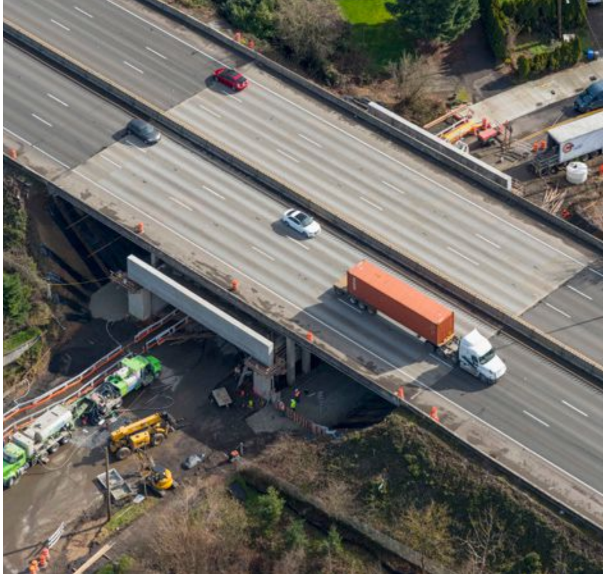
construction of a new, single-span bridge in the available space under the center span of the existing bridge. During the weekend closure, the existing bridge's superstructure would be demolished, the roadway pavement above the new bridge would be installed, and traffic striping would be placed. This approach had the potential to generate many benefits for the project, but it also posed several challenges.

According to Joel Tubbs, Portland bridge practice lead in the Transportation Business Unit at David Evans and Associates Inc., one of the major design challenges was to select a structure that could meet the project's horizontal and vertical clearance requirements both before and after construction. "Precast, prestressed concrete slabs were instrumental in addressing this challenge due to the structural efficiency of the section, and the fact that the prestressed slabs were of a constant depth for the full span length," Tubbs said. "These characteristics maximized the clearances' full width between abutments, minimized the structure depth, and provided for tremendous flexibility in accommodating local traffic and construction access."

The team also had to contend with the horizontal and vertical constraints generated by the presence of the existing bridge carrying live traffic overhead. Without having access from above, the team could not use traditional methods of material delivery, placement, quality control, and more. Fortunately, the use of precast concrete slabs dramatically improved constructability, performance, and quality.

Furthermore, the use of precast concrete allowed the team to take advantage of accelerated bridge construction methods while preserving the existing bridge throughout most of the construction. The prestressed slabs were set on temporary supports adjacent to the existing bridge in three groups of 8 to 10 slabs each, with all slabs in each group tied together. Adjacent slab groups were also tied to one another. Each slab group was laterally pulled under the existing bridge so that the next group of slabs could be placed on temporary supports. The final lateral translation pulled all 28 slabs the rest of the way to their final position under the existing bridge.

"The completion of this project benefits the community and the traveling public in so many ways," Tubbs said. "Beyond the time and cost savings afforded by precast concrete, we now have a new structure in place that's designed to current static and seismic bridge standards while also providing for a smoother ride through this corridor in the future."



Photos: *David Evans and Associates*

KEY PROJECT ATTRIBUTES

- Through the use of accelerated bridge construction methods and precast and prestressed concrete slabs, the I-5 Bridge over SW 26th Avenue was replaced in a single, 56-hour weekend window.
- Other than the weekend closure, all six lanes of the original bridge remained open to traffic during the replacement project.

PROJECT AND PRECAST CONCRETE SCOPE

- Each of the 28 precast and prestressed concrete slabs used for the new bridge's superstructure were 30 in. deep.
- In addition to the bridge slabs, 1545 linear ft of precast concrete panels were manufactured for the mechanically stabilized earth walls installed on the project.
- The full bridge closure took place between June 28 and July 1, 2024, before bridge traffic reopened for a busy holiday weekend.

Bridge with a Main Span from 76–200 Feet

BLUE HILL FALLS BRIDGE OVER SALT POND OUTLET

BLUE HILL, MAINE

PROJECT TEAM

Owner:
Maine Department of Transportation (MaineDOT), Augusta, Maine

PCI-Certified Precast Concrete Producer:
J. P. Carrara & Sons Inc., Middlebury, Vt.

Engineer of Record: HNTB Corporation, South Portland, Maine

General Contractor: Cianbro Corporation, Pittsfield, Maine

Project Size: 7163 ft^2

Situated in southeast Maine, the Blue Hill Falls Bridge is a historic structure that has served travelers since 1926. For generations, the bridge was enjoyed by the community, serving as an inspiration for artists, a destination for kayakers and wake boarders, and a treasured asset for locals. However, after decades of use, the Blue Hill Falls Bridge was in desperate need of replacement. To help determine the best path forward, the Maine Department of Transportation (MaineDOT) partnered with an advisory committee to explore design proposals for the new bridge. Ultimately, the group decided to replace the arched structure with a precast, prestressed concrete girder bridge, a structure that promises a longer service life and reduced maintenance requirements, and a sustainable solution that's built for the future.

A HISTORIC UNDERTAKING

To honor the historic Blue Hill Falls Bridge and the many residents and visitors who enjoy it, the design team, along with MaineDOT, took steps to ensure that the new structure contained elements from its past. During the construction process, general contractor Cianbro Corporation integrated granite stone masonry pieces from the original bridge into the

"Designing the bridge so that the substructure was not in the waterway results in a structure that minimizes future maintenance and maximizes surface life, all while providing the community a structure that honors the original historic bridge."

—Lee Wegner, Contech Engineered Solutions

replacement structure. Additionally, to ensure the long-term resilience of the structure, a variety of precast concrete components were specified in the design, including 16 precast concrete approach beams, 5 prestressed Northeast bulb tee (NEBT) girders, and 8 precast concrete arched fascia panels. The bridge was also elevated by 4 ft to accommodate rising sea levels and enhance its resilience.

According to Joe Carrara, president of J. P. Carrara & Sons, the project team leveraged accelerated bridge construction methods to expedite on-site work. These methods, in conjunction with the use of precast concrete, limited disruptions for commuters and were more environmentally friendly than traditional bridge-building methods. Additionally, the off-site fabrication of the precast concrete pieces allowed for precise manufacturing, minimizing material waste and mitigating pollution that might have been generated through additional on-site work.

"By incorporating precast, prestressed concrete, the bridge's structural integrity and construction timeline were optimized," Carrara said. "This approach also significantly reduced waste and environmental impact, aligning with the sustainability goals that are often prioritized in historic preservation efforts."

The Blue Hall Falls Bridge is located above saltwater, so the project team also had to consider how to manufacture precast concrete components that will achieve a long-term service life. By incorporating a series of high-strength materials such as 10,000-psi concrete, stainless steel prestressing strands, and ChromX 9100 Grade 100 rebar, the potential for environmental stressors such as corrosion from saltwater was significantly reduced. The enhanced structural integrity made possible by the selection of these materials will extend the service life of the new bridge while minimizing future maintenance requirements and upkeep costs.

While many admirers of the Blue Hill Falls Bridge were reluctant to see the historic structure replaced, the new bridge offers a durable, aesthetically pleasing route for commuters and an array of advantages to the community.

"Through leveraging precast concrete and accelerated bridge construction, the Blue Hill Falls Bridge replacement project successfully addressed existing structural deficiencies, improved public safety, and provided a durable infrastructure solution for the public—all with a reduced carbon footprint," Carrara said.

Photos: *J.P. Carrara & Sons Inc.*

KEY PROJECT ATTRIBUTES

- To preserve the historic qualities of the Blue Hill Falls Bridge, granite stone masonry pieces from the original bridge were incorporated into the new precast concrete design.
- Accelerated bridge construction methods were deployed on the project to shorten the construction timeline and minimize impacts to the surrounding environment.
- The new bridge was elevated by 4 ft to accommodate rising sea levels.

PROJECT AND PRECAST CONCRETE SCOPE

- Precast concrete components include 16 precast concrete approach beams, 5 prestressed NEBT girders, and 8 precast concrete arched fascia panels.
- To combat the saltwater environment, high-strength materials were specified, including 10,000-psi concrete, stainless steel prestressing strands, and ChromX 9100 grade 100 rebar.
- One of the first projects in the United Sates to use stainless steel prestressing strands as the primary superstructure reinforcement.

Non-Highway Bridge

ROBERT F. KENNEDY PEDESTRIAN/CYCLE BRIDGE

NEW YORK, NEW YORK

PROJECT TEAM

Owner:
The Metropolitan Transport Authority, Randall's Island, N.Y.

PCI-Certified Precast Concrete Producer:
The Fort Miller Company Inc., Greenwich, N.Y.

Engineer of Record: COWI, New York, N.Y.

General Contractor: Walsh Construction Group, Little Falls, N.J.

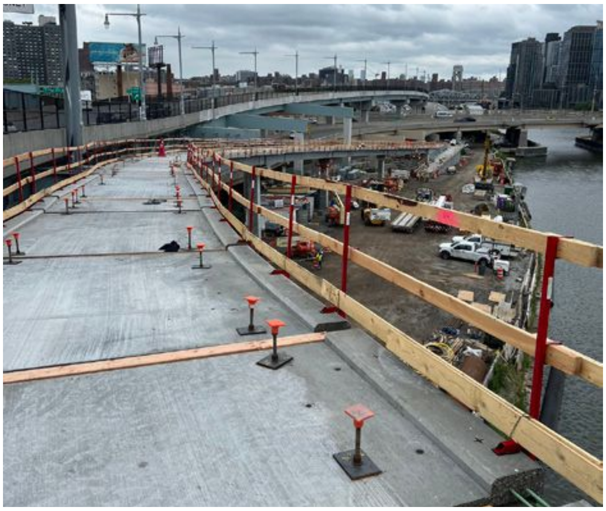
PCI Associate Supplier: CeEntek Inc., Roxbury Township, N.J.

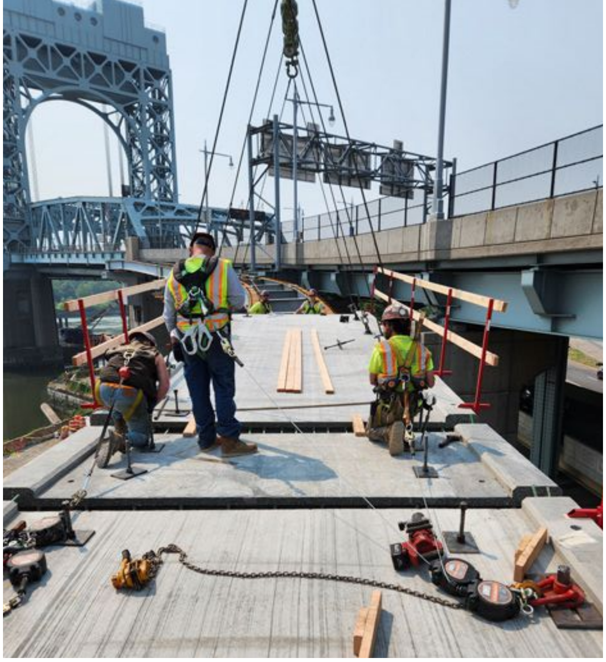
Project Size: 7100 ft^2 (deck)

In the Big Apple, bridges are essential for traveling between the city's boroughs. And while many iconic bridges in New York City—including the Brooklyn Bridge, Manhattan Bridge, and others—are best known as thoroughfares for automobile traffic, they also serve pedestrians and cyclists. When the 2780-ft-long Robert F. Kennedy (RFK) Bridge, which links the boroughs of Manhattan, Queens, and the Bronx, required significant upgrades, including pedestrian access improvements, the Metropolitan Transport Authority (MTA) partnered with the Fort Miller Company and engineering firm COWI on a precast concrete solution involving multiple product types and ultra-high-performance concrete (UHPC).

WALK (AND BIKE) THIS WAY

The existing scissor stairway connecting the RFK Bridge sidewalk to the grade below represented a 50-ft climb, and MTA officials sought a new design to help encourage additional bike and foot traffic and meet Americans with Disabilities Act (ADA) requirements. This project posed considerable logistical challenges for the contractor, Walsh Construction Group: The jobsite was in a population-dense area, and it had a small footprint constrained by several barriers, including a highway,





Photos: Vic Perry

a river, and another bridge. These issues were addressed thanks to the use of an assortment of precast concrete components, including haunches, deck panels, ramp panels, and architectural retaining walls.

"MTA chose precast concrete components over cast-in-place wherever practical to achieve an accelerated schedule and reduce the time impact on this project," said Joshua French, vice president of estimating, sales, and marketing for the Fort Miller Company. "Using precast concrete also reduced the amount of traffic coming into and leaving the project site. This was a huge benefit due to the difficult access and the limited amount of space available."

Given the location and changes in elevation, designers chose an innovative switchback design for the pedestrian and cycle bridge. This design features precast concrete haunches, which were connected to the side of the existing cast-in-place highway bridge piers using UHPC. With UHPC, cure time was significantly reduced, enabling faster erection, and the need for elaborate formwork and scaffolding at the project site was eliminated. The team also used UHPC when installing the precast concrete deck panels for the pedestrian and cycle bridge, taking advantage of color matching to provide seamless transitions from panel to panel across the deck. Closer to ground level, crews installed architectural precast concrete retaining wall panels; these panels were then backfilled and topped with precast concrete ramp panels that were joined with color-matched, UHPC field-cast connections.

Despite minimal available space at the jobsite, the project team leveraged precast concrete to carefully coordinate the delivery and staging of the precast concrete deck elements. This led to a shortened construction timeline and saved money by minimizing on-site labor costs.

The result is modernized access to the bridge. "This project brings the RFK Bridge's original structure and access up to modern ADA standards," French said. "Once fully implemented, it will more efficiently and safely connect Manhattan and Randall's Island."

"The use of precast concrete, peer extensions and concrete deck panels was the best solution to expedite construction and minimize the need for long-term disturbance at the site."

—Francesco Russo,
Russo Structural Services

KEY PROJECT ATTRIBUTES

- An upgrade to the Robert F. Kennedy Bridge in New York City modernizes access for pedestrians and cyclists, improving safety and meeting ADA standards.
- UHPC was used to connect the precast concrete haunches to the existing cast-in-place bridge and allowed for seamless transitions between precast concrete deck panels on the new bridge.

PROJECT AND PRECAST CONCRETE SCOPE

- Precast concrete components used on the project include haunches, deck panels, ramp panels, and architectural retaining wall pieces.
- Using precast concrete shaved approximately 3 months off the construction schedule.
- Erection of the precast concrete components took place between April and June 2023.

Transportation Special Solution

SR 519 SEATTLE FERRY, MULTIMODAL TERMINAL AT COLMAN DOCK

SEATTLE, WASHINGTON

PROJECT TEAM

Owner: (WSDOT), Washington State Ferries, Seattle, Wash.

PCI-Certified Precast Concrete Producer: Concrete Technology Corporation, Tacoma, Wash.

Engineer of Record: WSP, Tacoma, Wash.

General Contractor: Hoffman Pacific, Seattle, Wash.

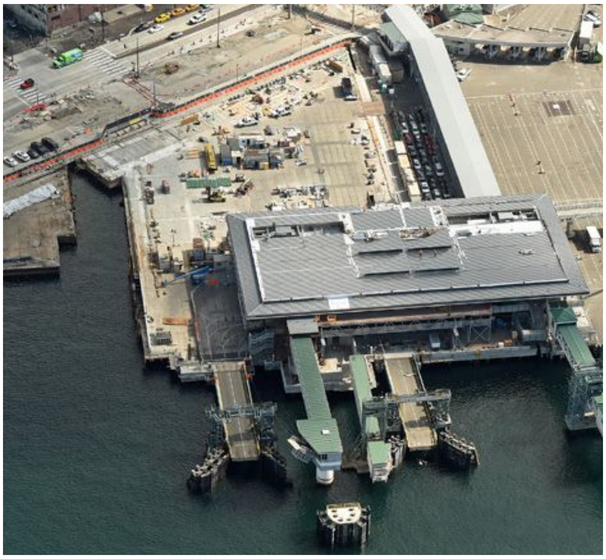
Project Size: 295,232 ft^2

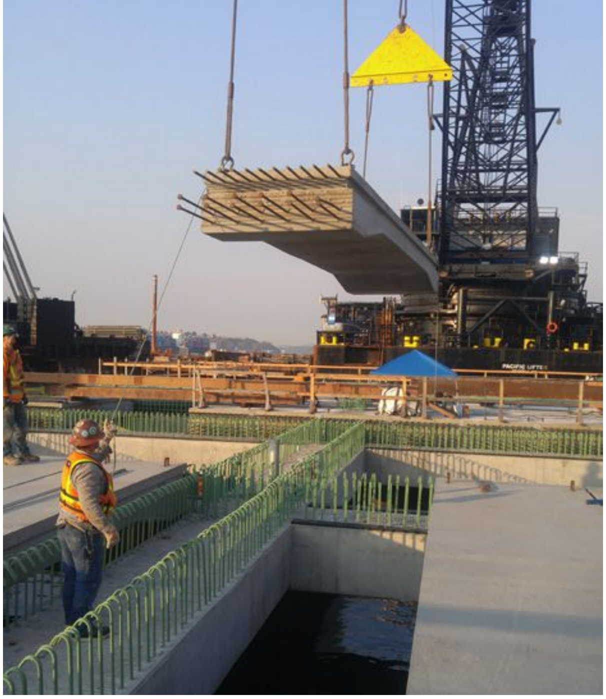
Serving nearly 9 million ferry riders per year, the Colman Dock in Seattle, is Washington State Ferries' busiest terminal and plays a critical role as a regional, multimodal transportation hub. After decades of wear and tear, the terminal's trestle, which was originally supported by timber piles from the 1938 construction, was in desperate need of replacement. For this project, the Washington State Department of Transportation (WSDOT) and Washington State Ferries worked with project engineering firm WSP and Concrete Technology Corporation, choosing precast concrete as the best material for meeting both short- and long-term goals.

A BEACON FOR SEATTLE

Due to the massive nature of the project and restrictions for when in-water work could occur, construction at Colman Dock was spread out over the course of seven years. Rapid completion of the overall project was not a goal of the team. Instead, WSDOT officials aimed to accelerate individual phases of the work so that traffic patterns could be switched from soon-to-be demolished areas to newly completed ones, keeping the terminal open and functional throughout the process.

Mike Wray, senior vice president of ports and marine engineering for WSP, noted that, keeping Colman Dock open throughout construction was not the only priority. "Minimizing disruption to the surrounding areas and avoiding environmental impact were crucial," he said. "And this needed to be accomplished while keeping the project on time and on budget."





Photos: Hoffman-Pacific LLC, a Joint Venture and CTC

Colman Dock's new trestle deck is supported by more than 750 precast and prestressed concrete panels sitting atop newly driven steel pipe piles. Trestle deck placement occurred over the course of five years and was performed in phases. Each of the panels was designed with a maximum thickness of 27-in. The precast concrete panel elements included 44 haunched, 32 prismatic, and 32 trapezoidal prismatic shapes. According to Wray, selecting precast concrete for the panels brought a significant number of advantages to the project.

"The precise nature of precast concrete fabrication allowed for the advance coordination of complex utility attachments, eliminating the need for site drilling and installation under the deck and over the water," said Jim Parkins, vice president and director of marketing at Concrete Technology Corporation. "Additionally, the pretensioned elements of the precast concrete helped accommodate long spans of 40 feet, leading to lower costs for the substructure and mitigating environmental impact from the pile driving."

The use of precast concrete also helped ease traffic in a highly congested area. Barges were used to deliver the precast concrete components, which represented 95% of the concrete installed on the project. If a cast-in-place alternative had been selected, more than 850 ready-mix trucks that would have been on the road.

Another advantage of the precast concrete design is the low permeability and high resilience of the precast and prestressed concrete panels. They boast a 75-year service life, meaning that everyone who uses Colman Dock can count on the transportation hub to continue servicing the region for years to come.

"Colman Dock is a beacon on the Seattle waterfront," said Suanne Pelley, construction communications manager at Washington State Ferries. "The new facility is a vast improvement over the old one. Passengers benefit from a seismically sound concrete and steel trestle, main terminal passenger building, entry and welcome building, elevated pedestrian connections, retail spaces, and a passenger-only foot ferry."

"The incorporation of precast panels eliminated the need for scaffolding over [concrete] the water, greatly reducing environmental and safety risks."

—Lee Wegner,
Contech Engineered Solutions

KEY PROJECT ATTRIBUTES

- Due to the large-scale nature of the work, the Colman Dock project was spread out over the course of seven years.
- The new trestle deck has a 75-year service life.
- Precast concrete components were transported to the jobsite by barge, which minimized project-related truck traffic in the highly congested area surrounding Colman Dock.

PROJECT AND PRECAST CONCRETE SCOPE

- More than 750 precast and prestressed concrete panels support the new trestle deck.
- Elements for the precast concrete panels included 44 haunched, 32 prismatic, and 32 trapezoidal prismatic shapes.

Honorable Mention

Bridge with a Main Span From 76-200 Feet

Photo: *County Materials Corporation*

MILE LONG BRIDGE

CHICAGO, ILLINOIS

PROJECT TEAM

Owner: Illinois Tollway, Downers Grove, Ill.

PCI-Certified Precast Concrete Producer: County Prestress & Precast, LLC, Janesville, Wis.

Engineer of Record: LHQ Tri-State Partners/H.W. Lochner Engineering, Chicago, Ill.

General Contractors: FH Paschen, Chicago, Ill.; Walsh Construction, Chicago, Ill.

Project Size: 734,400 ft^2

KEY PROJECT ATTRIBUTES

- The Mile Long Bridge replaces two aged bridges in a heavily traversed corridor with a high-performance solution featuring massive precast, prestressed concrete girders.
- An innovative gantry system was used during precast concrete installation to mitigate environmental effects near the jobsite.
- The number of lanes in the northbound and southbound directions at the Mile Long Bridge was increased from four to five, improving traffic conditions and safety for commuters.

PROJECT AND PRECAST CONCRETE SCOPE

- More than 500 precast concrete bridge beams ranging in length from 127 to 187 ft were installed on the project.
- The 187-ft-long girders are the largest prestressed concrete bridge girders produced in the region to date.
- The construction schedule was broken into three phases to help minimize road closures and mitigate traffic congestion.

Traffic in suburban Chicago is often heavy, with many commuters traversing the region's roadways daily. Approximately 20 miles southwest of downtown, the Mile Long Bridge on the Central Tri-State Tollway (I-294) is a critical piece of infrastructure in the Chicagoland area that supports the travel of 150,000 vehicles per day. In a multi-year project that began in 2019, the Illinois Tollway replaced two aging bridges to accommodate increasing traffic demands, minimize maintenance, and improve safety. The project came to fruition through the production and installation of more than 500 precast, prestressed concrete bridge beams.

EXCEPTIONAL VALUE, EXCEPTIONAL SERVICE LIFE

Project leaders were challenged with replacing the existing four-lane northbound and southbound bridges with wider structures to accommodate five lanes of traffic and a Flex Lane in each direction. Precast, prestressed concrete bridge beams offered the optimal solution to achieve minimal disturbance to the environment, reduced maintenance, and an extended service life.

A unique beam design, inspired by the California wide-flange beam shape, was developed specifically for this bridge. County Prestress & Precast manufactured 523 precast concrete girders ranging in length from 127 to 187 feet and weighing up to 125 tons. Measuring 90 inches deep, these girders are the longest prestressed concrete bridge girders ever fabricated, transported and erected in the Midwest.

Even so, getting the girders to the project site was a challenge. To address potential transportation risks, the team used the PGStable module within the Bridgelink program to analyze lateral stability during erection and transportation. Once the girders were delivered to the jobsite, an innovative gantry system installed the precast concrete girders near the waterways, allowing four lanes of traffic in each direction to remain open throughout construction, mitigating potential headaches for commuters.

Site logistics were further complicated by two major railroads, three water resources, local roads, and a series of commercial properties beneath the bridge. This required unique design considerations and construction approaches. To minimize disturbance to the aquatic ecosystem and impact on transportation and commercial activities, LHQ Tri-State Partners developed a solution that reduced the number of piers from 53 to 26 piers per bridge. The Illinois Tollway was able to reduce the number of spans to 27 by nearly doubling the length of the beams. This reduced the number of deck joints, enhancing bridge durability and reducing long-term maintenance. Additionally, the construction schedule was meticulously carried out in three phases to help minimize road closures and congestion.

The use of precast concrete on the Mile Long Bridge provided numerous benefits. Precast concrete was the building material of choice for its low life-cycle cost, unmatched durability in the harsh winter weather, and it's high-performance strength across long spans. The completed bridge, with an expected service life of 100 years, an additional lane of traffic, and an unmatched resiliency, will support motorists in the region for the next century.

Photo: Wells®

Originally opened in 1975, Jack Trice Stadium at Iowa State University (ISU) has hosted football games for the Cyclones for a half-century. Now, the new East Gateway Pedestrian Bridge offers a safe, reliable means for fans to access the stadium over University Boulevard, a four-lane street that experiences heavy traffic on game days. With a need to blend creativity and practicality, Raker Rhodes Engineering partnered with Wells to design the pedestrian bridge, leveraging precast concrete beams, columns, double tees, slabs, and architectural walls in the design.

A CHAMPIONSHIP-CALIBER SOLUTION

Stretching a quarter mile in length, the East Gateway Pedestrian Bridge connects the stadium with parking areas to the east. The bridge, which complies with Americans with Disability Act (ADA) requirements, has two stair towers featuring architectural precast concrete panels embellished with ISU-themed lighting, which improves visibility for the bridge's users while also inspiring fans on gamedays. The structure of the bridge is anchored by 77-ft-long spans composed of 42-in.-deep double tees. Given the size of the bridge, a steel design would have been prohibitively expensive. Therefore, the project team chose precast concrete products for most of the structure, including the walkway's slab sections. The result is a bridge that is both cost effective and durable.

Important considerations during the design process were the live loads and vibration limits for the structure during periods of peak pedestrian traffic. Instead of static loading, the engineers used dynamic load design to account for movement and vibrations caused by people walking across the bridge. Ensuring that the East Gateway Pedestrian Bridge could support the live loading of users while still maintaining its dynamic load capabilities was critical. As a result, extensive residency calculations were performed to guarantee that the bridge would not bounce excessively under pedestrian traffic.

The project's original schedule was established before the COVID-19 pandemic. and had experienced several delays. As such, work had to be completed under a tight timeline so that the bridge could be finished in time for ISU's next football season. By using what was essentially an all-precast concrete design, the project benefited from the material's many advantages, including the efficiency of off-site fabrication and expedited on-site erection.

With aesthetic appeal and long-term durability, the East Gateway Pedestrian Bridge is a championship-quality solution that fosters a sense of community and inspires school pride among those who support the ISU Cyclones.

Honorable Mention

Non-Highway Bridge

IOWA STATE UNIVERSITY JACK TRICE GATEWAY BRIDGE

AMES, IOWA

PROJECT TEAM

Owner: Iowa State University Facilities Planning & Management, Ames, Iowa

PCI-Certified Precast Concrete Producer and Precast Concrete Specialty Engineer: Wells, Albany, Minn.

Architect: Substance Architecture, Des Moines, Iowa

Engineer of Record: Raker Rhodes Engineering, Des Moines, Iowa

General Contractor: Henkel Construction Company, Mason City, Iowa

Project Size: 26,750 ft^2

KEY PROJECT ATTRIBUTES

- The East Gateway Pedestrian Bridge serves as a vital link between the parking and tailgating lots and Jack Trice Stadium at Iowa State University.
- Although there were several delays during the COVID-19 pandemic, the use of precast concrete products helped the team meet a tight construction timeline.
- The new bridge is ADA compliant and its aesthetics inspire school spirit.

PROJECT AND PRECAST CONCRETE SCOPE

- The structure of the bridge is anchored by 77-ft-long precast concrete spans composed of 42-in.-deep precast double tees.
- Dynamic load design was used to ensure that fans remain safe as they traverse the bridge.
- With a nearly all-precast concrete design, the East Gateway Pedestrian Bridge is both durable and cost effective.

2025 PCI DESIGN AWARDS

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