## 2022 Diamond Awards

FOR ENGINEERING EXCELLENCE

January 27, 2022

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### **Diamond Awards**

FOR ENGINEERING EXCELLENCE

### **President's Message**

On behalf of the ACEC/PA Board of Directors, I would like to welcome you to the 2022 Diamond Awards for Engineering Excellence.

This year is the second time our Diamond Awards are being held virtually and, with thanks to technology, we are able to host a truly special event. Today we will be honoring the innovative work done by our member firms and their partners. The projects accomplished this year have demonstrated immense creativity, dedication and resourcefulness.

The past 12 months have had their ups and downs for all of us but you, our members, have continued to show the commonwealth what is

possible with perseverance and diligence. I would like to thank all of the honorees today, as well as all of our members who have continued to strive for excellence. Your concentrated effort has made these projects great successes.

In closing, I would like to extend a thank you to everyone who made this event possible. To the Diamond Awards committee and ACEC/PA staff, thank you for another successful Diamond Awards.

D. Eric Veydt, PE, PEng, ENVSP | ACEC/PA Board President

### A Message from ACEC/PA

Welcome, everyone, to the 2022 ACEC/PA Diamond Awards for Engineering Excellence.

The ACEC/PA staff and Diamond Awards committee have striven to give you an event that is as excellent as the projects being honored. Today we are here to celebrate those who have gone above and beyond to develop innovative projects that have changed communities around commonwealth.

The 2022 ACEC/PA Diamond Awards honors the work our members and their partners have done to create innovative solutions for projects across the state during another year of great uncertainty and change.



I would be remiss if I didn't thank our tremendous sponsors for helping to make this event possible. With your generosity, ACEC/PA is able to provide this high-quality event for every member, regardless the location.

Lastly, I would like to thank everyone in attendance today for helping to honor and celebrate our industry's most exceptional achievements.

teeann Shesman

Leeann Sherman, MPS, CAE | ACEC/PA Executive Director



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### **Master of Ceremonies**

#### Dan Tomaso

In 1997, Hurricane Danny inspired Dan to study meteorology when the storm caught his attention due to the name. As a native of Harrisburg, he watched the local weather for fun and learned as much as he could from evening newscasts on ABC27 with the StormTrack Team.

Dan first began communicating his weather knowledge over a closed-circuit television channel titled "The Royal News Network," at Saint Catherine Laboure School during his



seventh and eighth-grade years. In 2003, a special broadcast on this channel featured Chuck Rhodes as a guest co-anchor, who further inspired Dan to pursue the study of meteorology. Dan was offered a part-time meteorology position at ABC27 in August 2009, and has worked at the station ever since.

Before starting full-time at ABC27, Dan studied meteorology at Penn State University from August 2008 to March 2015 in the bachelor's, master's, and doctoral programs working for Dr. Raymond G. Najjar. During his time as a Penn State student, he would work at ABC27 mainly on weekends and during school breaks. In August 2013, Dan completed his bachelor's and master's degrees in meteorology through the prestigious Penn State Integrated Undergraduate/Graduate Program. He was accepted into this program in the spring of 2011, and worked with Dr. Najjar on his thesis research titled, "Seasonal and Interannual Variability of the Upper Delaware Estuary Dissolved Oxygen and Dissolved Inorganic Carbon Budgets." This work is now part of a published manuscript in the Journal of Geophysical Research: Biogeosciences.

Dan stepped away from Penn State in March 2015 to pursue his dream job in broadcast meteorology at ABC27 with a full-time on-air position. While his Ph.D. dissertation remains unfinished, he realized that his passion for forecasting and broadcasting in his hometown was the direction he needed to go for his career. Dan continues to broaden his weather and forecasting education as a broadcast meteorologist seal holder for the National Weather Association, a certification he received in February 2019.

You can see Dan's latest forecast live during ABC27 News at 6 p.m. and 11 p.m. each Saturday and Sunday! Dan also enjoys participating and volunteering in local events, so stop by and say hello if you see him outside of the station!

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### **F**S

### Speakers

#### Yassmin Gramian, PE Secretary of Transportation, Pennsylvania Department of Transportation

Yassmin Gramian, PE, serves as the secretary of the Pennsylvania Department of Transportation. She was confirmed unanimously by the Senate on May 27, 2020. As secretary, she oversees programs and policies affecting highways, urban and



rural public transportation, airports, railroads, ports, and waterways. She manages PennDOT's annual budget of \$9.5 billion, which is invested in all of Pennsylvania's approximately 120,000 miles of state and local highways and 32,000 state and local bridges. Under her leadership, PennDOT is directly responsible for nearly 40,000 miles of highway and roughly 25,400 bridges. She also has oversight of the state's 11.8 million vehicle registrations and 10.3 million driver's licenses and IDs.

Gramian assumed the role of secretary amid the COVID-19 global pandemic. This challenging time necessitated quick, decisive action to mitigate the spread of COVID-19 to best protect citizens, employees, and business partners. Under Gramian's leadership, PennDOT moved swiftly during the early stages of the pandemic to transfer essential functions to remote operations, while continuing to ensure roads were kept safe and passable, and crews remained available for responding to weather events. Gramian also serves as chair of the Transportation Revenue Options Commission (TROC), which was established by Executive Order of Governor Tom Wolf to develop comprehensive funding recommendations for Pennsylvania's large and aging infrastructure.

Gramian has more than 30 years of experience in operations, design, and management of transportation infrastructure systems, including highway, tolling, bridge, and railroad projects. She brings to her role at PennDOT strong working relationships with transportation authorities and governments across the Pennsylvania region, including the Pennsylvania Turnpike Commission, Philadelphia International Airport, Delaware River Port Authority, SEPTA, AMTRAK, and the City of Philadelphia.

Drawing on her years of technical expertise as an engineer in the transportation and infrastructure industry, she is focused on developing these forward-looking strategies that deliver innovative solutions for communities and transportation networks across the commonwealth.

### Speakers

Prior to joining PennDOT, she served as a senior vice president and business development director for a leading international engineering firm. She was responsible for growth of the company's transportation and infrastructure sector in the Northeast Region.

She previously served as senior vice president for a global architecture, civil engineering, and construction management firm, with responsibility for operations across Pennsylvania – namely in Philadelphia, King of Prussia, Harrisburg, and Pittsburgh. Known for leading with an "all-in" approach to solving challenges, Gramian also has experience at other well-known regional and global engineering firms.

Gramian earned master's and bachelor's degrees in civil engineering from the University of Michigan and completed the Tuck Management Training Program at Dartmouth College. She is a professional engineer in Pennsylvania, Delaware, New Jersey, and Florida. She previously served on the boards of PhilaPort (the Port of Philadelphia); American Council of Engineering Companies of PA; the March of Dimes Annual Transportation, Building & Construction Awards Luncheon; Transportation Management Association of Chester County; Policy Committee of Greater Valley Forge Transportation Management Association; and Bridge Committee of Association of Pennsylvania Constructors

#### Mark P. Compton Chief Executive Officer, Pennsylvania Turnpike Commission

Mark P. Compton of Manheim, Pennsylvania, began serving as chief executive officer of the Pennsylvania Turnpike Commission on Feb. 1, 2013. A professional with more than two decades of public and private-sector experience in transportation,



administration, government affairs, and construction, Mark holds a Bachelor of Science degree from Penn State University. He previously served as PennDOT's deputy secretary of administration, overseeing eight bureaus within the agency.

Before joining PennDOT, Mark was director of government affairs for American Infrastructure, a heavy civil construction company in Worcester, Pennsylvania. Prior to that, he worked in various public and private operations, focusing largely on transportation, construction, and economic development. Mark has been an active participant in the International Bridge, Tunnel and Turnpike Association, or IBTTA. Since 2015, Mark has served on IBTTA's board of directors and is currently serving as IBTTA's president.

### Congratulations to Our 2021 Scholarship Winners



Leigh Jacobsen Lafayette College \$5,000



Daniella Tagliaferri Villanova University \$3,000



Lindsay Steis Gannon University \$2,000



Sydney French West Virginia University \$1,000



Jane Truong Drexel University \$1,000







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### The Judging

#### Hugh Cannon, MPA, CAE

Executive Director, American Council of Engineering Companies of Metropolitan Washington

#### Dave Sanko

Executive Director, Pennsylvania State Association of Township Supervisors

#### Stephen M. Swarney, J.D.

Executive Director, AIA Pennsylvania

Through exceptional planning and engineering design, these award-winning projects significantly contribute to the quality of life for Pennsylvania citizens. The awards also recognize the involved design professionals for their expertise and dedication to our profession. We applaud and thank our members for making Pennsylvania a better place to live and work.

This year's winners strengthened our infrastructure, enhanced public safety, raised the profile of the engineering profession, and offered sustainable, economical solutions for clients and taxpayers. The winning projects are as diverse as the firms involved. A Diamond Award for Engineering Excellence is a tribute to not only the winning project and its engineering firm, but also to the clients, owners, subconsultants, contractors, and everyone who played a role in making these projects a reality. Our winners embody the spirit of teamwork.



### McCORMICK TAYLOR

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#### $Category A \mid$ Studies, Research, and Consulting Engineering Services

- Project Name:Local Roads Mileage System Development & ImplementationFirm:Johnson, Mirmiran & Thompson, Inc.
  - **Owner:** Pennsylvania Department of Transportation, Bureau of Planning and Research
- Key Partners: Pennsylvania Department of Transportation, Bureau of Planning and Research and EBA Engineering



Johnson, Mirmiran & Thompson, Inc. (JMT) rewrote and implemented the Pennsylvania Department of Transportation Local Road Mileage System. The system houses the Liquid Fuels inventory and is used to determine annual Municipal Liquid Fuels (Act 655) and Highway Transfer (Turnback) Program payments to municipalities throughout the state of Pennsylvania, which sum up to an annual amount of approximately \$500 million. The system is also the primary local road source for the department's All Roads Network of Linear Referenced Data (ARNOLD). ARNOLD is provided by the Federal Highway Administration (FHWA) and contains the locations of all roads in the state.

This project focused on replacing the dotGrants system, which was the legacy interface for the Liquid Fuels inventory. Johnson, Mirmiran & Thompson, Inc. worked with stakeholders from the Pennsylvania Department of Transportation Central Office, as well as numerous districts, to develop, test, and implement the new system. Key objectives included the migration of the Liquid Fuels Road inventory from the legacy system to a system that supported the integration of the GIS state network, the Liquid Fuels inventory, and the non-Liquid Fuels inventory being collected by The Pennsylvania Department of Transportation's planning partners. Key goals of the application were to improve access, updates, and maintenance of the Liquid Fuels inventory by creating a paperless PR-990 process that pushed data into the system.

The new system went live in February 2020, and resulted in a modern user interface for district and department end users, decreased data entry time by providing a more streamlined data entry process, and integration points with other critical business systems within the Pennsylvania Department of Transportation.



#### Project Name: Greater Harrisburg Area Susquehanna River Bridges Master Plan Firm: KCI Technologies, Inc. **Owner:** Pennsylvania Department of Transportation

Key Partners: Pennsylvania Department of Transportation, Alfred Benesch & Company, and Toole Design Group, LLC



Harrisburg, Pennsylvania, serves 250,000 commuters, truckers, and tourists crossing five major Susquehanna River bridges daily. KCI Technologies, Inc. evaluated structural conditions and created a master plan for the John Harris, Market Street, M. Harvey Taylor, George Wade and Clarks Ferry bridges.

KCI Technologies, Inc. analyzed traffic data, researched structural conditions, and created bridge rehabilitation and replacement schedules. Environmental requirements were considered along with input from regional planners, first responders, and local governments.

Using the master plan, future generations can address the needs of these significant structures, allowing commutes, lifestyles, and commerce to continue seamlessly in the capital region for decades to come.

Project Name: State College Area Connector Virtual Public Meeting Firm: Johnson, Mirmiran & Thompson, Inc. **Owner:** Pennsylvania Department of Transportation, District 2-0 Key Partners: Pennsylvania Department of Transportation, District 2-0, Larson Design Group, Inc., Erdman, Anthony Associates, Inc., Skelly and Loy, Inc., Drive Engineering, and Quest Corporation of America, Inc.



The COVID-19 pandemic prohibited in-person meetings, so Johnson, Mirmiran & Thompson, Inc. designed a unique and innovative webbased virtual public meeting platform that mimics the experience of in-person meetings to overcome the challenges of engaging the public virtually for the State College Area Connector Planning and Environmental Linkage (PEL) study. Using this platform,

attendees entered a 360-degree panoramic meeting room and self-guided themselves through meeting stations with visual displays and audio options to learn about the PEL process (a new concept in Pennsylvania) and obtain study information, with options to provide input. Successful virtual outreach was a critical step in advancing the study.

#### Project Name: Western Federal Lands Highway Division Feasibility Study Firm: Larson Design Group, Inc.

**Owner:** U.S. Department of Transportation, Federal Highway Administration Key Partners: The Schreifer Group and JG&A



In a three-month long collaborative process with Western Federal Lands (WFL) leadership, the Larson Design Group, Inc. (LDG) project team facilitated a five-step process to validate requirements, establish evaluation criteria, develop viable options, select top alternatives, and compare final options to determine a recommendation. The final recommendation to renovate the existing building aimed to capitalize on the opportunity for cost savings to the government,

enhance the sustainability and energy efficiency of the building, and promote the quality of life of WFL staff.

#### Project Name: Vaccine Access Project Firm: McCormick Taylor, Inc. **Owner:** City of Philadelphia

Key Partners: City of Philadelphia, Office of Transportation, Infrastructure, and Sustainability and City of Philadelphia, Office of Emergency Management



The Vaccine Access Project guickly and equitably provided multimodal travel options to Philadelphians who needed transportation to/from vaccination sites throughout the city. McCormick Taylor, Inc., in cooperation with the City of Philadelphia's Office of Emergency Management (OEM) and the Office of Transportation, Infrastructure, and Sustainability (oTIS), delivered the Vaccine Access Project from April 2021 to June 2021. McCormick Taylor, Inc. provided staffed transportation desks at all city-run vaccine sites with

transportation resources for those in need. Those efforts resulted in the distribution of over 23,500 transit passes to nearly 7,200 people in pursuit of full vaccination status.



 Project Name:
 PCD Career Connections Hub

 Firm:
 Pennoni

 Owner:
 Partnership for Career Development

 Key Partners:
 Partnership for Career Development



Students across the nation face unique challenges due to the COVID-19 pandemic such as social restrictions and economic uncertainties. To engage students and facilitate career education, the Partnership for Career Development reached out to Pennoni to develop custom software known as the Career Connections Hub. The "Hub" utilizes an objective-based interface that guides students through the exploration of

potential careers. Virtual career education is achieved using 3D renders, 360° photography, and various forms of interactive media. Its unique, video game-like exploration and state-of-the-art visuals provide an engaging and fun educational opportunity that "clicks" with the minds of modern students.

### **Diamond Awards Committee**

#### A Special Thank You to the Diamond Awards Committee Members

Chair: Abby Facini, Burns Engineering, Inc. Vice Chair: David Meckes, Erdman, Anthony Associates, Inc.

Sandy Basehore, Skelly and Loy, Inc. James Brady, Jr., TRC Companies, Inc. Rebecca Custer, A.D. Marble & Co., Inc. William Drawbaugh, Dewberry Engineers, Inc. Katherine Farrow, Lotus Environmental Consulting, LLC Corey Fenwick, Urban Engineers, Inc. Stacy Ginkel, KJ Consulting & Environmental Services, LLC Michael Grantner, STV Incorporated Jen Hendricks, Kimley-Horn and Associates, Inc. Lauren Herman, RK&K Barbara Hoehne, STV Incorporated Carl Hunt, Fisher Associates Ann Mark, McMahon Associates, Inc. Matthew Marquardt, Urban Engineers, Inc. Gregory May, HNTB Corporation Anita Osborne, RETTEW Associates, Inc. Afton Pascal, McCormick Taylor, Inc. Jeffrey Roken, Urban Engineers, Inc. Matt Shinton, Kimley-Horn and Associates, Inc. Maggie Talarico, Foresight Construction Services, LLC



### Category C | Structural Systems

Project Name: The Roundhouse at Hazelwood Green

Firm: Whitney, Bailey, Cox & Magnani, LLC **Owner:** Richard King Mellon Foundation Client: GBBN Architects Key Partners: GBBN Architects, PJ Dick-Trumball, Buro Happold Engineering, KU

Resources, Inc., Laquatra Bonci Associates, Grandview Development Co.



Whitney, Bailey, Cox & Magnani, LLC designed the structural systems that transformed the 19th-century 10-bay roundhouse on the former J & L Steel Mill campus into a modern technology incubator.

The existing structure sat on the 178acre campus along the Monongahela River. When Whitney, Bailey, Cox & Magnani, LLC first assessed the structural integrity of the Roundhouse in 2014, it was dilapidated, damaged, and, in many ways, dying a slow death after over 15 years of vacancy.

The \$12-million adaptive reuse included extensive repairs to existing roof decking and framing, exterior brick walls, and steel columns. Existing roof decking and framing

were closely examined with aerial lifts to determine where repairs were needed. Weatherdamaged exterior brick walls and mortar joints were repaired/rebuilt as necessary. Many of the existing structural steel columns were corroding from the base up and had to be reinforced by cutting out the weakened sections and replacing or supplementing with new steel plates and/or rolled shapes. In many instances, the existing steel was not found to have deteriorated and need repair until the brick walls that encapsulated them were removed, requiring an on-call approach to rehabilitation.

Whitney, Bailey, Cox & Magnani, LLC also provided structural design for the addition of a new reinforced concrete second floor supported by concrete columns and micropyle foundations. The large volume of space within the building allowed for the expansion when additional square footage was required. The elevated structure provides an intriguing balance between the old and the new.

The new Roundhouse at Hazelwood Green is on track for LEED Gold Certification.



Project Name: SR 611 Bridge Replacement Firm: HNTB Corporation

**Owner:** Pennsylvania Department of Transportation, Engineering District 6-0 Key Partners: NTM Engineering, Inc., Pennsylvania Department of Transportation, Engineering District 6-0, AWK Consulting Engineers, Inc. and PKF Mark III, Inc.



The SR 611 Bridge over Cooks Creek had to be replaced, but traffic had to be maintained and the historic Delaware Canal could not be impacted. The Pennsylvania Department of Transportation tasked HNTB Corporation to complete preliminary engineering and final design and deliver a safe and cost-effective solution within these constraints. Despite the bridge's proximity to two parallel structures, a busy intersection, an archaeologically significant public park and a local business, HNTB Corporation utilized every square foot

of usable workspace to reconstruct this vital bridge while safely maintaining access to nearby features and protecting important historic and cultural resources.

Project Name:	Howellville Road Bridge Replacement
Firm:	Michael Baker International
Owner:	Tredyffrin Township, Pennsylvania
Key Partners:	Tredyffrin Township, Traffic Planning and Design, Inc., and Lobar Site
	Development



The Howellville Road Bridge Replacement project involved the replacement of a "poor" condition wroughtiron truss, eligible for listing in the National Register of Historic Places (NRHP), in Tredyffrin Township, Pennsylvania. The project included the design and construction of a new truss structure, including new abutments and wider bridge crossing to accommodate appropriate shoulders for traffic and pedestrians on this two-lane structure. Michael Baker International provided structure, geotechnical, drainage and roadway design

for the replacement of the Howellville Road Bridge. The firm also conducted utility and railroad coordination and provided preliminary and final design.

Project Name: Kenmawr Bridge Replacement Firm: SAI Consulting Engineers, Inc.

**Owner:** Allegheny County Department of Public Works **Client:** Pennsylvania Department of Transportation, District 11-0 Key Partners: Pennsylvania Department of Transportation, District 11-0, Allegheny County Department of Public Works, Swissvale Borough, Rankin Borough, Port Authority of Allegheny County, Norfolk Southern Railway Company, Golden Triangle Construction Company, Pennsylvania Department of Transportation, District 11-0 Construction, Michael Baker International, RIG Consulting, Inc., Tri-State Design and Development, AWK Consulting Engineers, Inc., CDR Maguire, Inc., Century Engineering, LLC, A Kleinfelder Company, T2 UES, Inc., d/b/a T2 Utility Engineers, and Santangelo & Lindsay, Inc.



The Kenmawr Bridge Project located in Swissvale and Rankin boroughs in Allegheny County, Pennsylvania, replaced a structurally deficient single-span steel structure with a new 122-foot, two span, steel girder bridge that crosses Norfolk Southern Railroad Company's rail lines. The new bridge required 3 to 4 feet of vertical clearance over the existing rail lines requiring significant approach roadway, wall, and

utility reconstruction. The bridge was also lengthened for the future expansion of the PAAC's East Busway. The construction required the installation of a temporary bridge and roadway throughout the majority of the construction to maintain traffic.

Project Name: Rickert Road (Bridge 21) Over Morris Run Firm: Taylor Wiseman & Taylor **Owner:** County of Bucks Key Partners: Michael Baker International, CHRS, Schnabel Engineering, LLC, Medveczky Associates, LTD, County of Bucks, Grace Industries, and Pennsylvania Department of Transportation, District 6-0



The project goal was to replace a 1908, historically eligible, one-way single-span, concrete-arch bridge. The bridge was load-restricted for 4 tons and substandard in bridge width, also having a "hump" condition in the roadway caused by the bridge. Due to poor condition, the bridge was closed to traffic in 2011, causing a several-mile detour. To replace the bridge as fast as possible, the new structure was constructed entirely of precast concrete elements and, by including the precast

design into the contract documents, the bridge was completed in eight months.

## Project Name: Rachel Carson (Ninth Street) Bridge Rehabilitation

Firm: TranSystems Corporation d/b/a Transystems Corporation Consultants **Owner: Allegheny County Department of Public Works** 

Key Partners: Allegheny County, Pennsylvania Department of Transportation, District 11-0, FHWA, City of Pittsburgh, City-County Building, CDR Maguire, Inc., WSP USA Inc., Michael Baker International, Santangelo & Lindsay, Inc., KTA-Tator, Inc., Brayman Construction, Advantage Steel & Construction LLC, and Avalotis Corporation



The Rachel Carson (Ninth Street) Bridge is an eye-bar-chain, self-anchored suspension bridge carrying Ninth Street over the Allegheny River, Tenth Street Bypass, and Three Rivers Heritage Trail in downtown Pittsburgh. It is one of the "Three Sisters" bridges constructed from 1924 to 1928 that comprise the only trio of identical, side-by-side bridges in the world and the first self-anchored suspension spans constructed in the United States.

Rehabilitation was required due to accelerating age-related deterioration. TranSystems Corporation d/b/a Transystems Corporation Consultants (formerly L.R. Kimball) led and coordinated the team's efforts to deliver the inspection, design, and construction services.

### 2022 SPRING CONFERENCE

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#### Category D | Surveying and Mapping Technology

# Project Name:SMCMUA Watermain Replacement Community Engagement HubFirm:Larson Design Group, Inc.Owner:The Southeast Morris County Municipal Utilities AuthorityKey Partners:The Southeast Morris County Municipal Utilities Authority



The Southeast Morris County Municipal Utilities Authority (SMCMUA) believed that it needed to improve communications with its clients and communities when working on large capital improvement projects, such as its current \$3.2-million water line replacement project that will replace 8,100 linear feet of main and more than 30 fire hydrants. The replacement of the lines will make the system more resilient, increase reliability, improve fire protection, enhance water quality, and reduce leaks caused by the deteriorating infrastructure – but the project runs through the heart of the Morristown Business District and has the potential for service interruptions and project-related impacts. The

challenge SMCMUA faced was communicating information about the replacement to the general public and, most importantly, provide a way to engage meaningfully with its customers. To do that they enlisted the expertise of Larson Design Group, Inc. (LDG), which had already been supporting SMCMUA on GIS-related tasks like field data collection, Enterprise implementation, and operational workflows. The firm put their knowledge and skill to use in creating an ArcGIS Project Hub for SMCMUA that captures precise, up-to-the-minute data on how residents will be affected by everything from construction activities to disruptions and key milestones with residents, businesses, and community leaders within and around the project areas. The firm's innovative, results-driven approach clearly answered the needs of the authority and the local community, which has been evident from the positive feedback received.



#### Congratulations, 2022 ACEC/PA Diamond Award Winners!

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### Category E | Environmental

Project Name: State Route 115 Improvement Project
 Firm: RETTEW Associates, Inc.
 Owner: Pennsylvania Department of Transportation, District 5-0
 Key Partners: Pennsylvania Department of Transportation, District 5-0, Kriger
 Construction, Inc., Susquehanna Civil, Inc., and Navarro & Wright

**Consulting Engineers, Inc.** 



The Pocono Raceway draws huge crowds of motorsports fans, generates millions in tax revenues, and supports close to 3,000 jobs. Nearly 100,000 people flood the surrounding area each year during race weekends, with the vast majority using two-lane State Route (SR) 115 to access the speedway. During these race events, traffic on SR 115 is restricted to one direction, creating challenges for local residents and obstructing emergency vehicles. The unconventional intersection of SR 115 and SR 903 became a high-crash area. The area is environmentally sensitive, with roads winding through high guality wetlands and frequent flooding occurring on SR 115 and SR 4002 from a nearby stream. A

state endangered population of more than 800 Blunt Manna Grass was also discovered and unavoidable. RETTEW Associates, Inc. designed a roadway to limit the impacts to both the adjacent properties and the environmentally sensitive areas.

This challenging project required close coordination with multiple county, state, and federal agencies to obtain project clearance for impacts to many sensitive resources. Through coordination with PA DCNR, RETTEW Associates, Inc. developed a Translocation and Monitoring Plan proposing to relocate some of the endangered populations to an area unimpacted by the construction with an existing Blunt Manna Grass population. RETTEW Associates, Inc. also restored and realigned Keiper Run Creek and an unnamed tributary (UNT) by using stream design techniques. An additional section of the UNT was relocated and stabilized because the existing channel was highly eroded and unstable.



Project Name: Pennsylvania Turnpike Commission MPA31-A38 Wetland and Stream Mitigation
 Firm: A.D. Marble & Co., Inc.
 Owner: Pennsylvania Turnpike Commission
 Key Partners: Pennsylvania Turnpike Commission, Urban Engineers, Inc., WSP USA Inc., Dawood Engineering, Inc., American Geotechnical & Environmental Services, Inc., R.E. Pierson Construction, American Rivers, PA Fish & Boat Commission, and Beran Environmental Services, Inc.



A.D. Marble & Co., Inc. completed a mitigation plan designed to compensate for impacts to wetlands and streams associated with the construction of the MPA31-A38 project within the Perkiomen Creek watershed, Montgomery County. A.D. Marble & Co., Inc. was responsible for selecting the mitigation sites, conducting agency coordination, preparing a compensatory mitigation plan, completing preliminary and final design plans, and providing construction oversight and post-construction monitoring.

### Save the date for the

# DIAMONID AWARDS

#### FOR ENGINEERING EXCELLENCE

January 26, 2023 Lancaster Marriott at Penn Square

#### Category F | Waste and Stormwater

Project Name:Brandywine Creek Road Slope StabilizationFirm:HNTB CorporationOwner:Pennsylvania Department of Transportation, Engineering District 6-0Key Partners:Pennsylvania Department of Transportation, Engineering District 6-0,<br/>Colliers Engineering, and PAQ, Inc.



The Brandywine Slope Stabilization project was a collaborative effort between HNTB Corporation and various units within Pennsylvania Department of Transportation District 6-0 including Bridge, Geotechnical, Environmental and Construction. HNTB Corporation worked closely with the Pennsylvania Department of Transportation Geotechnical Unit to identify a solution to the constantly eroding slope adjacent to Brandywine Creek Road. HNTB Corporation designed a retaining wall and slope stabilization features that stabilized the slopes and restored two-way traffic along Brandywine Creek Road.

The project is located in Newlin Township, Chester County,

approximately 0.75 miles west of Embreeville. The project is approximately 1265 feet long, beginning 800 feet south of Harvey's Bridge Road.

This project provides a link between some of the rural and suburban neighborhoods as well environmental and natural areas in Chester County. It is also a popular route for many cyclists and is adjacent to the Brandywine Creek, which is used for recreational purposes by kayak and canoe clubs. In addition to the construction of a new-soldier pile retaining wall, this project also upgraded the roadway geometry, pavement, guiderail, and drainage features to meet current safety standards. Furthermore, the project incorporated in-stream wildlife measures including rock vanes and root wad deflectors to create and restore fish habitat.

Project Name: Main Pump Station Flow Meters and Access Platform
 Firm: Johnson, Mirmiran & Thompson, Inc.
 Owner: Allegheny County Sanitary Authority
 Key Partners: Allegheny County Sanitary Authority (ALCOSAN), ED3 Consultants, Inc., DLZ Pennsylvania, LLC, Michael Baker International, Kokosing Industrial,

and Lanco Electric, Inc.



Johnson, Mirmiran & Thompson, Inc. (JMT) completed the Main Pump Station Flow Meters and Access Platform as a pivotal portion of the Woods Run Treatment Plant expansion. The project installed six 54" magnetic flow meters on the pump discharge lines in the Main Pump Station that receives all wastewater flow entering the ALCOSAN plant. Since the meters were designed at 50' below ground level, the Johnson, Mirmiran & Thompson, Inc. team developed a structural

steel platform and lighting improvements to allow for maintenance. Johnson, Mirmiran & Thompson, Inc. sequenced the meter installation allowing only one pump to be out of service at a time to ensure plant operations.



#### Category G | Water Resources

Project Name: Harrisburg International Airport Levee System Rehabilitation
 Firm: Urban Engineers, Inc.
 Owner: Susquehanna Area Regional Airport Authority
 Key Partners: Susquehanna Area Regional Airport Authority, Navarro & Wright Consulting Engineers, Inc., and KC Construction



Far too often, infrastructure challenges are not addressed until there has been a disaster. In the case of the Susquehanna Area Regional Airport Authority's (SARAA) levee at Harrisburg International Airport (HIA), the authority was able to work with a capable consultant to resolve a water resource challenge before failure.

HIA's levee system was constructed in 1958, to prevent flooding from the Susquehanna River onto the airport's runway. Only minor maintenance and repair work had been performed on the levee since its construction. During the past 60 years, erosion, vegetative growth, ice jams, and other natural forces reduced the cross section and condition of the levee that protects the airport's

infrastructure. SARAA sought a consulting firm to provide design and construction management services for the rehabilitation of the airport's flood dike and levee system. The project would improve drainage by rehabilitating 13,025 feet of the system along the river.

Urban Engineers, Inc. was tasked with providing design services and construction administration/ management services under an on-call contract with SARAA. The objective was to rehabilitate the existing flood dike and levee system using ACB Mats along the slope and rebuilding of the riprap toe at the river's edge. Despite construction delays due to COVID-19, the team was able to reach substantial completion in July 2021, four months ahead of the baseline schedule completion. With the effects of climate change and increased flooding becoming more common, making sure that important local infrastructure like HIA is protected from future flooding is of utmost importance.

Project Name: Green Stormwater Infrastructure at Wissinoming Park
 Firm: Johnson, Mirmiran & Thompson, Inc.
 Owner: Philadelphia Water Department
 Key Partners: Philadelphia Water Department, Ground Reconsidered, Rodriguez
 Consulting, LLC, American Engineers Group, LLC, and
 AP Construction, Inc.



Johnson, Mirmiran & Thompson, Inc. (JMT) developed a Centralized Green Stormwater Infrastructure (GSI) Facility at Wissinoming Park to improve water quality and reduce combined sewer overflows as part of Philadelphia Water Department's (PWD) Green City, Clean Waters program. Johnson, Mirmiran & Thompson, Inc. designed a sloping wetland and two underground slow-release detention systems to create 42 Greened Acres in a cost-effective manner, treating over 1.1 million

gallons or 200 tanker trucks of water and double the anticipated capacity. Our firm's design provides numerous secondary benefits while maximizing Greened Acres (more than 20 times the average PWD project) to provide significant value toward PWD's long-term goals.



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### Category H | Transportation

Project Name: I-83 Exit 4 Improvements Firm: Gannett Fleming, Inc.

**Owner:** Pennsylvania Department of Transportation, Engineering District 8-0 Key Partners: Pennsylvania Department of Transportation, Engineering District 8-0, Susquehanna Civil, Inc., Wallace, Montgomery & Associates, LLP, Merit Marketing, Whitman, Requardt and Associates, LLP, Kinsley Construction, Erdman, Anthony Associates, Inc., and Federal Highway Administration Pennsylvania Division



I-83 Exit 4 is a vital interchange connecting communities in southern York County to the greater region. The firm's challenging role in the design and construction consultation of a complex junction of connecting roadways required innovative solutions, including a unique diverging diamond interchange (DDI) design in a narrow transit corridor while protecting the environmental well-being of the local watershed.

The project design is only one of three DDIs currently built in the commonwealth. Replacing the existing diamond interchange with a DDI allows direct left turns from off-ramps and crossing roadways, thereby reducing congestion and lowering

the number of intersection conflict points. Other improvements include the project's stormwater management plan to protect the adjacent Shrewsbury Borough municipal water wells.

Gannett Fleming, Inc. achieved the goals initially set by Pennsylvania Department of Transportation, including:

- Improving safety through a 46% reduction of intersection conflict points and lengthening of the exit and entrance ramps;
- Reducing congestion with a DDI that efficiently moves traffic through the intersections;
- Replacing a structurally deficient bridge and culvert; and
- Providing a safe passage for pedestrians and bicyclists.

Exit 4 now provides improved safety, mobility, and aesthetics for regional and interstate travelers and is now a source of community pride for residents.



Project Name: Reconstruction and Revival: SEPTA's 5th Street Station Firm: Burns Engineering, Inc. **Owner:** Southeastern Pennsylvania Transportation Authority (SEPTA) Key Partners: Southeastern Pennsylvania Transportation Authority (SEPTA), Converse Winkler Architecture, Nave Newell, Batta Environmental, FIDELIS Engineering, ENC Group, McCormick Taylor, Inc., Michael Baker International, Urban Engineers, Inc., AP Construction, and John J. Bee Mechanical Contractors



Seldom can a transit station upgrade truly transform public appreciation of a prized cultural asset. Burns Engineering, Inc. led a complete revitalization of 5th Street Station – located adjacent to Philadelphia's Independence Mall – creating a renewed sense of excitement and inspiration for travelers arriving at the birthplace of America.

A complete overhaul to the 32,000-square-foot station's platforms, mezzanines, passageways and streetscape

produced a modern, multi-modal transit center. Despite significant underground conflicts and COVID-19 restrictions, construction completed on schedule.

### Project Name: I-95 Section BS4 Firm: CDM Smith. Inc.

**Owner:** Pennsylvania Department of Transportation, Engineering District 6-0 Key Partners: Pennsylvania Department of Transportation, Engineering District 6-0, WSP USA, Inc., A.D. Marble & Co., Inc., American Engineers Group, LLC, Surveying & Mapping, LLC (SAM), Synterra, Ltd., and Pickering, Corts & Summerson, Inc.



Section BS4 is the first of the Bridge Street Ramps construction projects completed under the Pennsylvania Department of Transportation's program to reconstruct I-95 in Philadelphia. It reconstructed the at-grade interchange ramps connecting the local street network to I-95 and the Betsy Ross Bridge, as well as the reconstruction of Aramingo Avenue and the construction

of a new road and trail that addresses many community needs. This urban project not only constructed necessary links to I-95, through stakeholder involvement, it incorporated the needs of neighboring communities by reducing congestion and providing safer links for multiple modes of transportation.

Project Name: State Street over Jacoby Creek Bridge Replacement Firm: Erdman, Anthony Associates, Inc.

**Owner:** Pennsylvania Department of Transportation, Engineering District 5-0 Key Partners: Pennsylvania Department of Transportation, Engineering District 5-0, Skelly and Loy, Inc., Dawood Engineering, Inc., and Grace Industries, Inc.



The State Road over Jacoby Creek bridge is an important link to the Borough of Portland, a small community along the Delaware River in Northampton County. With the existing bridge closed to traffic, portions of the town became inaccessible during flood events that inundated nearby Pennsylvania Route 611 and Jacoby Creek Road. Challenged by a project site that was confined by difficult terrain, adjacent residences, natural resources, and a mill dam just

upstream of the bridge, a team led by Erdman, Anthony Associates, Inc. designed a costeffective replacement structure that restores full access to the borough.

#### Project Name: Lafayette Street Extension Project Section MGN Firm: Gannett Fleming, Inc. **Owner: Montgomery County, Pennsylvania**

Key Partners: Allen Myers, JBC Associates, Inc., Pennoni, Pennsylvania Department of Transportation, District 6-0, Montgomery County Planning Commission, and Montgomery County Transportation Authority



The Lafayette Street Extension Project Section MGN illustrates the successful coordination of a multidisciplinary effort to deliver transformative infrastructure improvements in a downtown urban environment. The complex project included extensive roadway work, pedestrian and traffic safety enhancements, culvert replacement, stormwater management, multiuse trail relocation, geotechnical engineering, and recreational parkland improvement and landscaping. Now complete, the work showcases

the powerful role forward-focused infrastructure plays in boosting economic revitalization by creating faster and more convenient connections to area roadways.

Inc., KMJ Consulting, Inc., Malick & Scherer, P.C., and Tony DePaul & Son

Project Name: American Street Improvements Firm: Johnson, Mirmiran & Thompson, Inc. **Owner:** City of Philadelphia **Client:** Gilmore & Associates, Inc. Key Partners: City of Philadelphia Streets Department, Philadelphia Water Department, City of Philadelphia Department of Commerce, Gilmore & Associates,



A revolution of the "Urban Industrial Corridor" is occurring in Philadelphia and, more specifically, on American Street. This two-mile stretch of roadway sits at the intersection of the long-underserved neighborhoods and an ever-expanding urban core. Several city departments developed a vision to preserve and invest in the corridor's remaining industries to revitalize the community, improve accessibility and safety, and provide stormwater infrastructure facilities.

The vast public right-of-way allowed room for creative and complex design solutions. The roadway was ultimately reconfigured to provide the city's first median-protected raised bike lanes, vegetated bio-swales in the median, ADA-compliant sidewalks, and public gathering areas.

Project Name:	Route 13 Conne
Firm:	Pennoni
Owner:	Pennsylvania Tu
Client:	Lansdale Borou
Key Partners:	Pennsylvania Tu
	Jacobs Enginee
	Geotechnical &

ector for the I-95/I-276 Interchange Irnpike Commission gh, Pennsylvania Irnpike Commission, Lansdale Borough, Pennsylvania, ering, Urban Engineers, Inc., RK&K, American **Environmental Services, Inc., Carroll Engineering** 

Corporation, CDR Maguire, Inc., Remington & Vernick Engineers, Inc., and James D. Morrissey, Inc.

The Pennsylvania Turnpike Commission interchange with U.S. Route 13 (US 13) in Bucks County, Pennsylvania, originally constructed in the 1950s, reached the end of its service life, which created a project need. It was determined that the most appropriate alternative, to best fit with the vision for the US 13 corridor, was to remove the ramps and bridge connecting to US 13 and construct a conventional signalized intersection. This project supports future economic growth in the region

while providing a transportation asset that increases accessibility to all roadway users.

#### Category I | Special Projects

## Project Name:Southern Beltway Section 55A2 (Quicksilver Road to Panhandle Trail)Firm:CDR Maguire, Inc.Owner:Pennsylvania Turnpike CommissionKey Partners:Pennsylvania Turnpike Commission and AECOM Technical Services, Inc.



When Pittsburgh's famous steel industry came to a screeching halt in the late 1970s, the Mon Valley experienced economic and social hardship. Planning efforts refocused with the intent that better highway access and mobility would help redevelopment efforts. Hence, the Southern Beltway Project was conceived.

CDR Maguire, Inc. (CDR|M) was the Pennsylvania Turnpike Commission's (PTC's) construction manager for the \$780-million Turnpike 576 (Southern Beltway State Route 22 to Pennsylvania Interstate 79) project in Allegheny and Washington counties, Pennsylvania. The most recently completed section 55A2 includes a pair of multi-span steel girder

bridges, which are the longest and most complex structures on the beltway.

Construction management had to coordinate construction with multiple rail-trails located within the footprint of the project; the complex topography of hills, valleys, rivers, and streams; and existing strip and deep coal mines. Couple these factors with COVID-19, construction schedules, and the need to negotiate safety, schedule, budget, and a quality product, and you have a noteworthy engineering feat.

With collaboration from engineering, environmental, and construction backgrounds, CDR Maguire, Inc., and the entire construction team provided viable solutions to keep the Southern Beltway project on track.

Not only does Section 55A2 demonstrate teamwork and an ability to resolve complex challenges, but it embodies the industrial spirit of the region's steel history. CDR Maguire, Inc., and the entire team have had a role in opening a new chapter for the future of the Mon Valley.

 Project Name:
 Southport Truckaway Vehicle Storage Lot

 Firm:
 Whitney, Bailey, Cox & Magnani, LLC

 Owner:
 Philadelphia Regional Port Authority

 Key Partners:
 Philadelphia Regional Port Authority, American Engineers Group, LLC (AEG), TAI, and Haines & Kibblehouse



Whitney, Bailey, Cox & Magnani, LLC provided an innovative and strategic solution that transformed an inefficient, flood-prone property at the PhilaPort SouthPort Terminal into a 75-acre, 9,700 vehicle storage lot. Improvements elevated the property for protection from the 100-year flood elevation and implemented state-of-the-art stormwater management solutions.

As part of PhilaPort's Development Plan, this \$24-million Port Improvement project was completed over 33 and six Alternate Bid Phases

months covering two Base Bid Phases and six Alternate Bid Phases.

The reconstruction was performed without disrupting day-to-day vehicle processing operations.

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Category J | Small Projects

 Project Name:
 Penn State Ancient Biomolecules Research Environment

 Firm:
 Gannett Fleming, Inc.

 Owner:
 Penn State University

 Key Partners:
 Penn State University



Analyzing one-million-year-old DNA is a tricky business. The samples must be handled in a scrupulously sterile environment, free of contaminants, to protect their integrity. Using DNA to examine life over the past one million years has taught scientists about the origins of some modern diseases, improving human health by showing us the keys to thwarting illnesses.

To meet the needs of the specialty team at Penn State University, Gannett Fleming, Inc. designed a lab devoted solely to handling ancient DNA. The complex lab environment required a unique workflow and cleanroomlike conditions to keep samples pure and store them at cool temperatures. Airflow and air-filtration systems keep airborne particulate matter to

a minimum. A refrigeration system stays at temperatures between -20 and 4 degrees Celsius, as required for DNA handling. An emergency power generator keeps these vital systems running in the event of power failure.

Because intense decontamination is a daily part of lab maintenance, finish materials are both antimicrobial and durable enough to handle harsh bleach cleanings. Furthermore, a sanitizing ultraviolet (UV) lighting system helps prevent contamination in the laboratory. To offset the dangers of UV rays, the team incorporated safety precautions into the design, including doors and occupancy sensors linked to the system to prevent exposure.

Now complete, the \$1.9 million, 1,406-square-foot lab is an oasis of modern science and high-tech equipment within a 70-year-old building on Penn State University's main campus. The facility supports the critical work of studying the past to discover the keys to the future.


Project Name:Cowpath & Orvilla Intersection ImprovementFirm:McMahon Associates, Inc.Owner:Hatfield TownshipKey Partners:Hatfield Township, Pennsylvania Department of Transportation, District<br/>6-0 Review Agency, Lotus Environmental Consulting, LLC, Pennoni, and

Blooming Glen Contractors, Inc.



Residents, Hatfield Township officials and the Pennsylvania Department of Transportation all agreed: the most dangerous intersection in the township was the offset pair of signalized T-intersections of Cowpath Road (S.R. 0463) and Orvilla Road (S.R. 1004). The Township commissioners identified its location as the No. 1 traffic and safety concern with the township. McMahon Associates, Inc. was hired by Hatfield to align these intersections and bring safety and traffic flow

improvements to local citizens and through traffic. McMahon Associates, Inc. worked with all stakeholders for more than 10 years to create a solution that has exceeded the expectations of everyone.

 Project Name:
 Allegheny County Road Diet - Springhill Road

 Firm:
 Michael Baker International

 Owner:
 Allegheny County Department of Public Works

 Key Partners:
 Allegheny County Department of Public Works and Monaloh Basin Engineers



The Allegheny County Road Diet – Springhill Road project involved the reconfiguration of Springhill Road from a four-lane motor vehicle only thoroughfare to a varying two-lane and threelane road with the remaining space reallocated as a side path for pedestrians and bicyclists. Michael Baker International served as the project designer for client Allegheny County Public Works. The project ultimately improved roadway efficiency, connectivity and traffic flow, as well as safety for those traveling along Springhill Road.



# Project Name: Island Avenue, SR 0051, Section A97 - Stowe Township Firm: Pennoni Owner: Pennsylvania Department of Transportation, District 11-0 Key Partners: Pennsylvania Department of Transportation, District 11-0, Monaloh Basin Engineers, Inc., AWK Consulting Engineers, T2 UES, Inc. d/b/a T2 Utility Engineers, and Clearwater Construction, Inc.



Pennoni and the Pennsylvania Department of Transportation, District 11-0 reconstructed Island Avenue (SR 0051, Section A97) over abandoned Cole Row in Stowe Township, Allegheny County. The team constructed a Geosynthetic Reinforced Soil slope in front of existing structures, as well as a Caisson Retaining Wall structure to avoid impacting a recent slide on an adjacent property. This project supports the traveling public by maintaining the integrity of the

existing roadway through this area without any major inconveniences to motorists and without replacing the spandrel arch.

## **Urban Starts With You**

With so many airports located near waterways, we understand the need for innovative solutions such as this newly renovated flood dike and levee system at Harrisburg International Airport. Learn more about this award-winning project by scanning the QR code below:



Harrisburg International Airport Levee System Rehabilito Photo credit: KC Construction Co.



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### Category K | Energy

Project Name: UGIES Bethlehem LNG Facility
 Firm: Langan Engineering and Environmental Services, Inc.
 Owner: UGI Energy Services, LLC
 Key Partners: Borton-Lawson, Skelly and Loy, Inc., Preload Cryogenics, Benner GeoServices, Inc., Barwis Construction, American Tank & Vessel,

GeoServices, Inc., Barwis Construction, American Tank & Vessel, Inc., Appellation Construction Services, LLC, Kessel Construction, Inc., Burkey Construction, CHI Engineering Services, Inc., S & L Mechanical, Inc., and The Hills Group, LLC



In November 2020, UGI Energy Services, LLC (UGIES) commissioned their new \$60-million liquefied natural gas (LNG) facility in Bethlehem, Pennsylvania. LNG is produced by chilling natural gas to approximately 260 degrees below zero. During periods of extremely cold weather, the demand for natural gas to heat homes and businesses can increase dramatically in a short period. A natural gas peak shaving facility delivers an off-pipeline supply of natural gas to satisfy these spikes in demand.

This specialized storage tank is 80-foot tall and holds two million gallons of LNG. The facility is located on 99 acres and the property was constrained with multiple natural

resources, including wetlands, streams, floodplains, steep slopes, wooded areas, and varying depths of bedrock and karst. Intense regulatory permitting was required prior to construction for erosion and sediment pollution controls, flood impacts and temporary stream impacts for crossing of the East Branch Saucon Creek. Additional permitting included a stream restoration for approximately 1,000 linear feet of an unstable and highly eroded stream section of an unnamed tributary to East Branch Saucon Creek. The restoration stabilized the stream bank and reduced the streambed's steep slope and velocity in the channel to help limit future scour and erosion, thus protecting the tank and the site.

Langan Engineering and Environmental Services, Inc. provided multi-disciplined services from the initial planning phase through land development design and regulatory permitting, and through sitework construction. Langan Engineering and Environmental Services, Inc. worked with UGI staff to develop the ultimate design that achieved project goals while maintaining the required operational site components.





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### Category I Industrial and Manufacturing Processes and Facilities

**Project Name:** Dräger Manufacturing Facility

- Firm: STV Incorporated
- Owner: Dräger

#### Key Partners: Dräger, OPTIMA, Ingersol Rand, and DenTech Industrial



When the COVID-19 pandemic reached the United States in early 2020, N95 masks and many other forms of personal protection equipment quickly became in short supply. Dräger, a German-based company that is an international leader in the fields of medical and safety technology, turned to STV Incorporated to play a key part in a new manufacturing facility.

STV Incorporated's architectural and engineering team provided design services to transform a vacant building in Montgomeryville, Pennsylvania, into a new manufacturing plant that produces thousands of face masks an hour and millions per year.

The 46,000-square-foot facility contains 10,000 square feet of office space, with approximately 36,000 additional square feet to house state-of-the-art manufacturing equipment. STV Incorporated coordinated closely with overseas vendors so the building was prepared to receive these machines, which sometimes cost upwards of \$1 million each.

The client required an extraordinarily tight timeline to meet its design. Dräger contracted STV Incorporated in mid-June and the facility needed to be up and running by early September 2020.

STV Incorporated also was tasked with coordinating with Montgomery Township, as well as other local officials over the course of design and construction. The project created an initial 50 new jobs in the rural region, with more added as Dräger ramped up production at the facility.

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### **Best Panel**

Project Name:NJ TRANSIT - A 5-Year Capital PlanFirm:WSP USA, Inc.Owner:NJ TRANSITKey Partners:NJ Transit, Hardesty & Hanover, Ben

Key Partners: NJ Transit, Hardesty & Hanover, Ben Oldenburg Design, and Dewberry Engineers, Inc.



Problem: Over the last decade disinvestment eroded the reliability of the NJ TRANSIT system. NJ TRANSIT developed its first long-term Capital Plan to return the nation's largest state transit system to a state of good repair and deliver reliable service and resilient, safe and efficient infrastructure to all customers. Key objectives included equitable distribution of service, economic growth with targeted improvements, and new technology investment to reduce carbon emissions and address health issues raised by the pandemic.

Solution: The goals in NJ TRANSIT's Strategic Plan (NJT2030) was the starting point. The capital planning team translated the goals into five performance metrics for evaluating

projects: state-of-good repair, customer experience, safety, resiliency and business performance. The team developed "an unconstrained vision" for the next 20 years, including over 100 projects. These were vetted and divided into packages to be delivered in increments. The 5-Year Capital Plan is expected to be the first of a rolling series of plans. Projects include investments in all modes (rail, light rail, bus), with service dedicated to seniors and the disabled. Analysis considerations included state of good repair, safety, project readiness, integrating sustainable technologies, resiliency, customer experience, and accessibility. The plan lays the groundwork for NJ TRANSIT to introduce electric buses, address rail bottlenecks, invest in making facilities accessible to all, and focus on support facilities that keep the system running (power generation, bus garages and maintenance facilities). Responding to the COVID-19 pandemic, the team pivoted and incorporated projects to address health concerns, such as contactless payment systems.

## **Diamond Awards**

## Diversity, Equity & Inclusion Award

This year's Diversity, Equity and Inclusion award winner has committed to building an inclusive culture and workplace that supports staff mentorship programs. Its Executive Leadership Team has emphasized the company culture by creating a diversity council to

continue to grow inclusivity and diversity. Ultimately, the company's employees are provided an opportunity to grow and pursue their own career goals regardless of gender or ethnicity by allowing them to learn and grow in their discipline of choice and not be forced into a "pigeonhole" that was pre-determined based on the position into which they were hired. Employees are encouraged to brand themselves, to give back to their professions and communities by teaching and mentoring others, and to seek career growth opportunities within the company.

The company's inclusion and diversity program celebrated three years in 2021, with a heavy focus on implementing the three-year inclusion and diversity strategic plan. For the first time in 2021, the company-wide employee engagement survey included inclusion and diversity related questions to benchmark employee opinions on their inclusion and diversity efforts and to identify areas of strength and improvement.

Locally, the company's Philadelphia-area Inclusion, Diversity, and Equity in Action (IDEA) group has been working to implement the goals of the national inclusion and diversity strategic plan through action at the local level. The group also conducted a survey of local office employees to benchmark employee opinions and to identify the types of programming, topics, and frequency of engagement that staff prefer. The Hiring and College Outreach Subcommittee has coordinated staff attendance at several area college events to reach more diverse candidates, including a Villanova Inclusion and Diversity Fair and Rutgers Bloustein School of Planning Diversity, Equity and Inclusion Alumni Panel, and a presentation to Temple University's National Society of Black Engineers.

### **Client of Distinction**



The City of Pittsburgh's Department of Mobility and Infrastructure (DOMI) recently incorporated an Invitation to Qualify process that prequalifies several selected consulting firms over multiple categories of design, engineering, and planning work, and ultimately decreases the time it takes to get consultants under contract on projects. This method provides clarity for a firm to pursue specific work with the DOMI without incurring significant costs associated with unsuccessful pursuits. The process is clear, open and equitable to all firms.

Once selected, DOMI negotiates fair contract terms and recognizes through contract amendments when work is beyond the anticipated scope. DOMI has demonstrated through multiple procurements and contracts to be equitable in contract terms, committed to procurement methods focused on quality of work, and fair business partner in terms of payment.

To facilitate the delivery of their program and commitment to providing opportunities to the engineering community, DOMI has hired consulting firms to serve as general manager and project oversight as part of efforts to advance their program.

DOMI works closely with the consulting firms through the life of their projects to understand the issues that occur and that require contract adjustments so to fairly accommodate appropriate consultant change orders. Although DOMI has staff educated and experienced in engineering, they place a great deal of trust in their consultants engineering advice and solutions and appreciate the value of their services.

More important, DOMI also has a vision to look beyond the given set of project objectives to envision how the future will be shaped through the actions of today.

For the reasons discussed above, Gannett Fleming, Inc. has nominated, and ACEC/PA is proud to recognize the City of Pittsburgh's Department of Mobility and Infrastructure as the winner of the 2022 Client of Distinction Award.

### **Grand Conceptor**

Project Name: The Pavilion at Penn Medicine Firm: HDR Engineering, Inc.

**Owner: University of Pennsylvania Health System** Key Partners: University of Pennsylvania Health System, Foster + Partners, L.F. Driscoll,

Balfour Beatty Construction, Steelfab, Inc., McGill Engineering, Inc., and The Berlin Steel Construction Company



The largest project in Penn Medicine history, the Pavilion is a \$1.6 billion, 17-story, state-of-the-art hospital with a 690-stall subterranean parking garage topped by a 1.5-millionsquare-foot high rise superstructure, home to 504 private patient rooms and 47 operating/interventional rooms.

Occupying a highly visible spot, the Pavilion links the Hospital of University of Pennsylvania to the neighboring Penn campus and adjacent Perelman Center for Advanced Medicine through three pedestrian sky bridges. It also continues Philadelphia's civic tradition, weaving public spaces with a promenade, plaza and garden spaces that connect with the Penn Museum of Archaeology and Anthropology and SEPTA.

To build the new flagship facility, Penn Medicine turned to PennFIRST — an integrated planning, design and construction team. Integrated project delivery fostered innovation and creativity and solved design challenges associated with placing a high-rise hospital on an irregular, narrow, urban site.

The patient tower's northernmost 50-feet suspends from five hidden trusses high above the promenade within the building façade and mechanical spaces. The large underground precast parking garage descends 65 feet below grade and uses multi-story steel trusses to transfer the column grids from the tower above. Large steel plate girders transfer column loads around the loading dock, directly below the hospital tower and plaza, to the mat foundations below. Opened in fall 2021, the new Pavilion enhances the public experience, reflects the historic campus location and resonates with the existing hospital complex. It is a beacon of hope for patients and an exemplar for the future of hospital design.



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