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NEWS & VIEWS

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table of contents

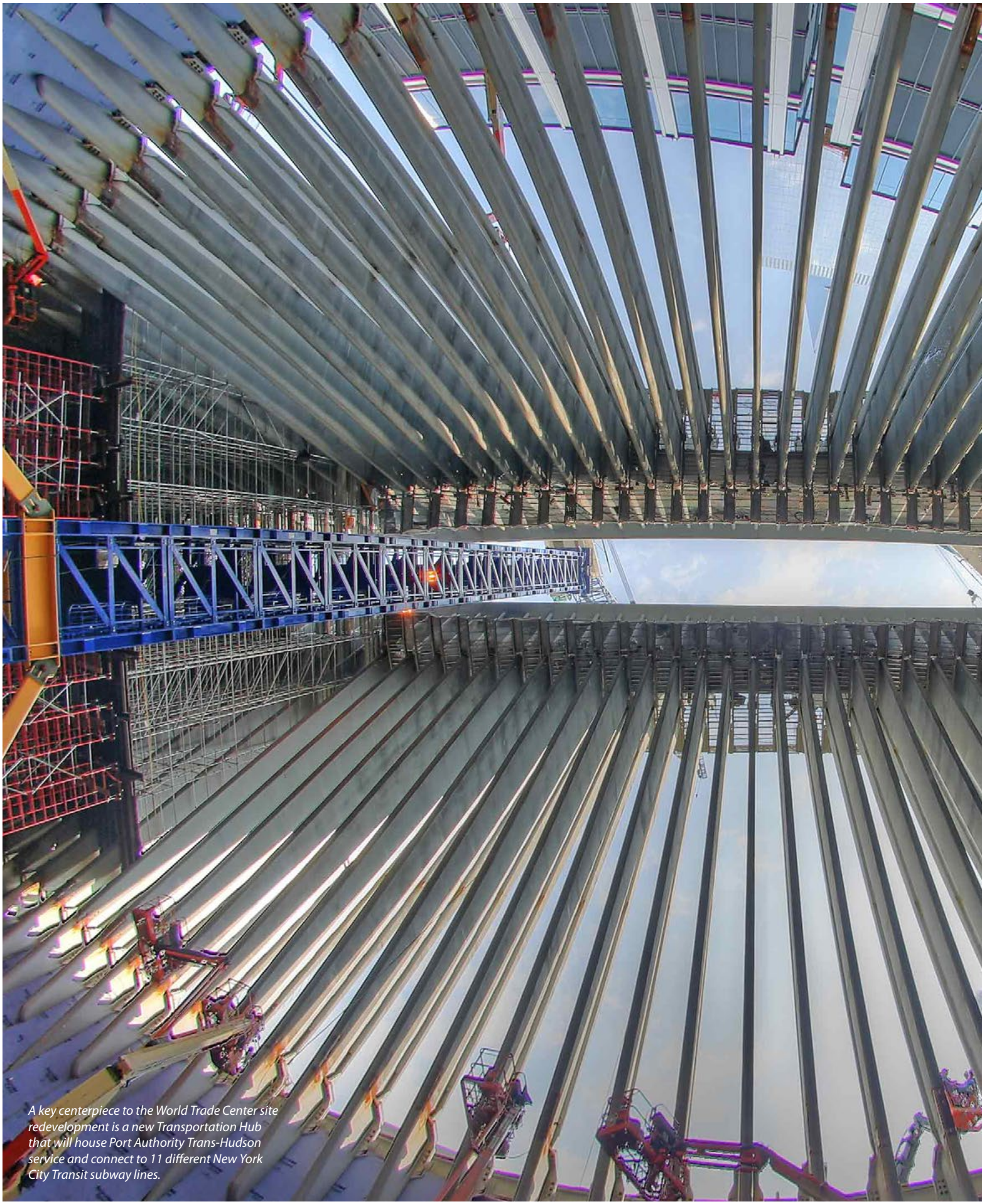
STV 100 Years

FULL-SERVICE ACROSS ALL MARKET AREAS

STV prides itself on its full-service capabilities. With four core divisions that can provide a wide array of planning, architectural, engineering, environmental, and program and construction management services for transportation systems, infrastructure, buildings, energy systems and other facilities, STV has demonstrated again and again its ability to meet the client's needs via its disciplinary diversity and flexibility.

Because of this broad spectrum of capabilities, STV can support its clients in myriad ways – sometimes even within the scope of the same project. Whether it's performing both design and construction management services on a new higher education facility, or offering niche services to a long-term client such as a rail agency developing a BIM standards and procedures plan, STV is always striving to reinvent what it means to be the consultant of choice.

And with acquisitions including STV/VBN in Northern California, STV/GWD in the Rocky Mountain region, and STV/DPM in New England, not only is the firm growing in size and geographic reach, but it is also vastly expanding its offerings and capabilities for projects and initiatives of any type or size.



A key centerpiece to the World Trade Center site redevelopment is a new Transportation Hub that will house Port Authority Trans-Hudson service and connect to 11 different New York City Transit subway lines.

Photo Courtesy of the Port Authority of New York and New Jersey

BEACONS OF LIGHT

INSPIRATION IN LOWER MANHATTAN

Dramatic Progress Being Made at the World Trade Center Site

The redevelopment and renewal of Lower Manhattan after the September 11, 2001, attacks is one of the most important and publicly visible construction initiatives in the world today. It is a program filled with reflection and perseverance, as multiple stakeholders have banded together to honor those who lost their lives and to rebuild the historic New York City neighborhood so it would be better than before.

At the center of this initiative has been the Port Authority of New York and New Jersey (PANYNJ). The PANYNJ was critically impacted by the September 11 attacks. The agency built the original World Trade Center and was headquartered there. When the towers were destroyed, many of the PANYNJ's employees perished, including its executive director. But those who remained vowed to make Lower Manhattan a vital destination once more by bringing iconic structures back to the core of the World Trade Center site as well as a seamless intermodal transportation network and top-notch retail.

One of the PANYNJ's many partners for this challenging renewal effort is STV. In 2002, the Lower Manhattan Development Corporation selected Studio Daniel Libeskind's Ground Zero Master Plan, which outlined a number of new and replacement structures at the site. Of the projects highlighted in the master plan, STV was contracted by the PANYNJ to perform design services for the World Trade Center Transportation Hub, the World Trade Center Vehicle Security Center, streetscapes and utilities around the site, a chiller plant, and the

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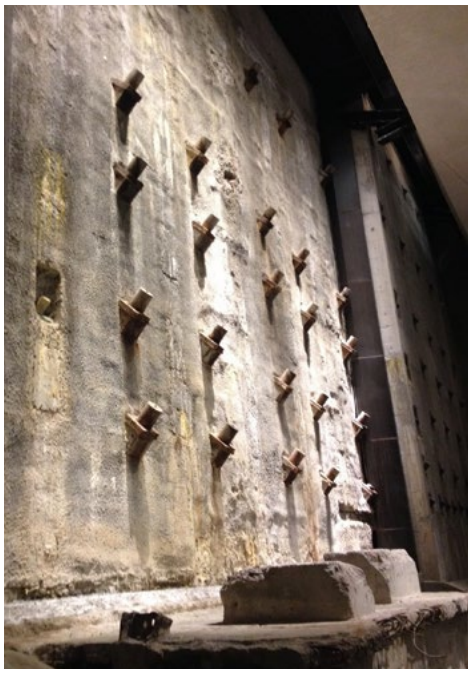
The design and construction of the World Trade Center Transportation Hub has been a highly challenging endeavor.



The National September 11 Memorial & Museum opened in May 2014.

Cortland Street Subway Station, as well as provide owner's representative and project management services for the National September 11 Memorial & Museum and One World Trade Center. Additionally, in the aftermath of Superstorm Sandy in 2012, the firm was contracted to provide design and construction management services in an effort to make elements of the site more resilient against flooding and other natural disasters.

"It was the highlight of my 40-year career at STV to be selected for a number of commissions in Lower Manhattan," said Dominick M. Servedio, P.E., STV's executive chairman. "I am honored that the Port Authority and all of the other stakeholders involved with the renewal of this vital neighborhood have entrusted us with their most emotional, important projects."

A NEW TRANSPORTATION GATEWAY IN LOWER MANHATTAN

A centerpiece of the World Trade Center site redevelopment was a new transportation hub that would house Port Authority Trans-Hudson (PATH) service and connect to 11 different Metropolitan Transportation Authority New York City Transit (NYC Transit) subway lines. In 2003, the PANYNJ released a solicitation for the architectural and engineering services for the transportation hub. STV, in joint venture with AECOM, put together a team with world-renowned architect Santiago Calatrava and the Parsons Transportation Group. Calatrava's vision for the hub was that of a dove being released into flight by a child, symbolizing healing, peace and hope. The team – known as the Downtown Design Partnership (DDP) – was selected with STV as the architect-of-record and STV/AECOM the engineer-of-record.

Designing and constructing the transportation hub would be a complex and challenging endeavor. The DDP worked with dozens of stakeholders, including the PANYNJ and political leaders in both New York and New Jersey, for one of the most publicly scrutinized projects in the world. One of the hallmarks of the original design, which was conceived by Libeskind and was rendered elegantly by Calatrava, was a "Wedge of Light" that would

"It was the highlight of my 40-year career at STV to be selected for a number of commissions in Lower Manhattan."

DOMINICK M. SERVEDIO, P.E.
STV Executive Chairman

reflect the time between when the first plane struck and the second tower fell. The Wedge of Light would serve as the principal axis for the hub, along which the structure was envisioned to open and close every September 11 as a memorial to those lost.

"Our work with the hub presented us with a number of challenges related to the unprecedented scale and complexity of the overall plans for the site," said Michael Garz, AIA, NCARB, STV senior vice president in the firm's Buildings & Facilities Division. "The World Trade Center site is a city within a city. We had to account for the design and construction of a number of structures, including multiple commercial towers, the Vehicle Security Center and the National September 11 Memorial & Museum. The DDP coordinated with the many stakeholders at the city, state and federal levels. The project's design incorporates sustainable and resilient features while also accommodating evolving security criteria."

One design challenge was the accommodation of an active subway tunnel, the NYC Transit No. 1 Line, running across the site, which had been badly damaged by the attacks on September 11. To connect the PATH station within the west "bathtub" (underground foundation area) to NYC Transit services to the east, which included the 1 Line's Cortlandt Street Station, a new, in-ground bridge was designed and constructed to carry the 1 Line across a major pedestrian concourse. An underpinning methodology was developed by the project team that maintained 1 Line service throughout the redevelopment of the World Trade Center site.

The underpinning of the 1 Line tube – which runs more than 1,000 feet in length across the entire World Trade Center site – and the erection of a new 250-foot in-ground bridge structure demonstrated extraordinary engineering and construction prowess. The original 1 Line was constructed as a cut-and-cover tunnel in 1905. Post September 11, the subway line was rebuilt at its original elevation and alignment, but the tunnel was repurposed as a tube structure on existing grade. The tube supports Greenwich

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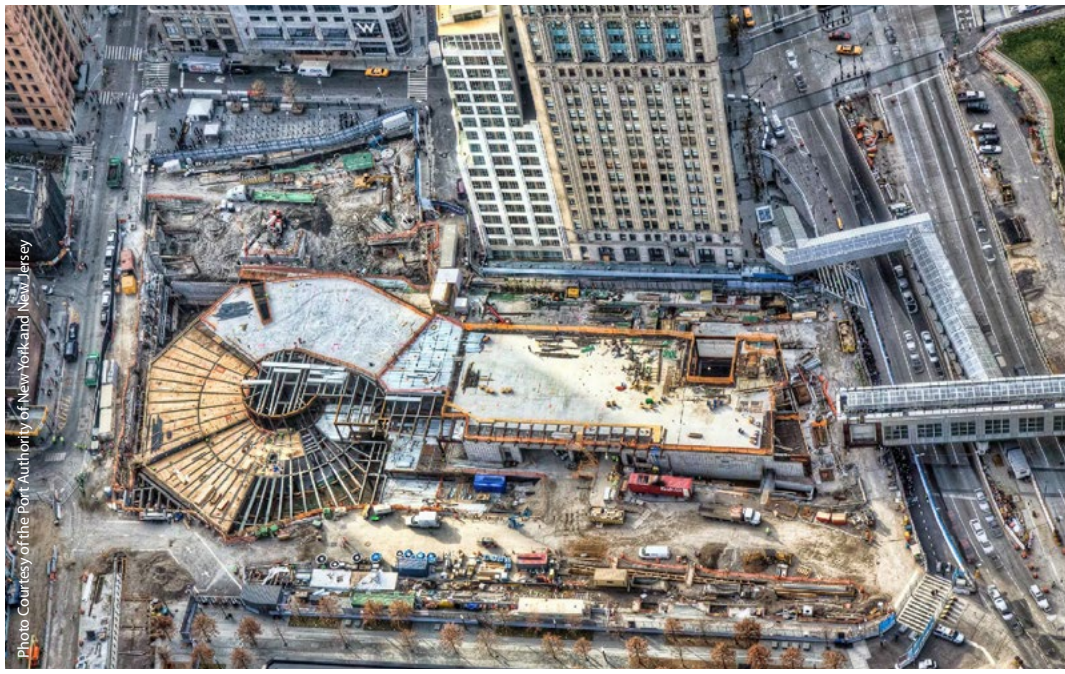
Photo Courtesy of the Port Authority of New York and New Jersey

After opening in late 2014, One World Trade Center is officially the tallest building in North America.



The World Trade Center Vehicle Security Center and the rehabilitation of the adjacent network of roadways are two critical pieces of Lower Manhattan's redevelopment.

Street above its roof and includes two tracks and station platforms.

To build all of the associated structures connecting the PATH station to the balance of the hub and adjacent World Trade Center projects, the construction team excavated below the 1 Line tube and installed a temporary bracing system. To maintain active 1 Line subway service, the design team developed a solution to utilize approximately 500 segmented mini-piles drilled through the top of the reconstructed subway structure to the bedrock below.

"It was such a unique experience," said Kishor Doshi, P.E., STV vice president and co-engineer of record for the DDP. "The fact that we designed and built the underpinning of the 1 line subway structure from the top down, and un-shored the construction of the Oculus with non-prismatic welded steel members, demonstrates the Hub's engineering achievement. We were able to accomplish this project through extraordinary teamwork."

The hub's design and construction also had to accommodate the nearby memorial. There were concerns about light reflecting up from the hub's light wells that could detract from the intended appearance of the plaza and memorial. The hub design was engineered to support the landscaped plaza and use artificial light to evoke the quality of natural daylight in the spaces below.

Once the entire hub complex is completed later this year, commuters and visitors will be treated to an awe-inspiring, exceptionally user-friendly, easy-to-navigate environment.

"I am sure that, in the very near future, the World Trade Center Transportation Hub will be seen a one of the iconic buildings/spaces in New York City, and justifiably so," said Scott McIntyre, P.E., LEED®AP, STV vice president and project director. "But for me, the building will always be about the people – those who lost their lives in the 9/11 attack; the professionals who unwaveringly dedicated a substantial portion of their careers to the rebuilding; and the people who will use this magnificent creation. Of the people, by the people, for the people."

A VISIONARY VEHICLE SECURITY CENTER

While it might be the least publicly visible of any project at the site, the World Trade Center Vehicle Security Center (VSC) is a critical component of the rebuilding effort. STV, as part of the Liberty Security Partners joint venture, which also includes AECOM, is performing a full suite of architectural and engineering design services for a state-of-the-art facility that will help to protect thousands of daily visitors and the public's enormous investment in Lower Manhattan's renewal.

STV's Construction Management Division worked with the owner to control costs and keep the construction of One World Trade Center on schedule.

The progress in Lower Manhattan's redevelopment has revitalized tourism in the neighborhood.

Located below Liberty Park and St. Nicholas' Greek Orthodox Church on the south side of the World Trade Center site, the VSC will feature a series of electronic security systems, vehicle restraint barriers, screening equipment, and other high-tech, antiterrorism subsystems that every car, tour bus, truck, delivery truck or other vehicle must pass through as soon as they enter at Liberty Street. The security center will also have the capacity to store up to 70 buses.

The center's subterranean design will result in a number of benefits, including relegating parked cars to within the complex rather than on city streets. Additionally, the underground security features are out of public view, thereby maintaining the site's inherent sense of tranquility and meaning.

The joint venture mapped out vehicle circulation patterns, which in turn framed the building's layout. The team examined traffic flows through street-level checkpoints and lower-level vehicle inspection areas, simulating vehicular movements to verify that the necessary clearances for buses and security equipment were met. It also studied the nearby street layout to develop appropriate traffic controls within the center's underground roadway network.

AN ENTRANCE TO ETERNITY

In addition to STV's design expertise, the firm's Construction Management Division has also played a critical role in the evolution of the World Trade Center site to support some of Lower Manhattan's most visible new destinations – the National September 11 Memorial & Museum and One World Trade Center.

Set within the footprints of the original Twin Towers, the memorial opened in 2011 with an emotional ceremony on the 10-year anniversary of the World Trade Center attacks. Featuring the two largest engineered waterfalls in the nation, the bronze parapet that encloses the memorial waterfalls is inscribed with the names of the 2,979 men and women who perished in New York City, Washington, D.C., and Shanksville, PA, as well as the victims of the February 1993 bombing at the World Trade Center. During the memorial's opening ceremony, an onlooker told The Washington Post that the pools resembled "an entrance to eternity." The memorial also includes an eight-acre, landscaped plaza with walking paths and more than 300 swamp oak trees, which were freshly planted at the site. There is a pear tree dubbed the "survivor tree" because it managed to survive at the site in the aftermath of September 11.

A state-of-the-art museum, which opened in 2014, complements the memorial. To access the museum, visitors descend below the memorial voids, where they can view the slurry wall and other remaining structures at the foundation of the site of the original buildings.

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One of the defining moments for this project came in 2008, when then-New York City Mayor Michael Bloomberg announced his commitment to have the memorial and plaza substantially completed in honor of the 10-year anniversary of September 11. This publicly established commitment required significant partnering and redevelopment on a fast-track schedule to complete all necessary construction before the ceremony. To achieve this goal, the PANYNJ engaged STV as owner's representative and program manager and contracted Lend Lease as the construction manager.

In this capacity, STV was responsible for supervising the construction manager, which provided oversight of the 46 individual trade contractors working on the site, and monitoring the individual progress of each trade as it correlated to the overall schedule. The firm also collaborated with the World Trade Center Memorial Foundation.

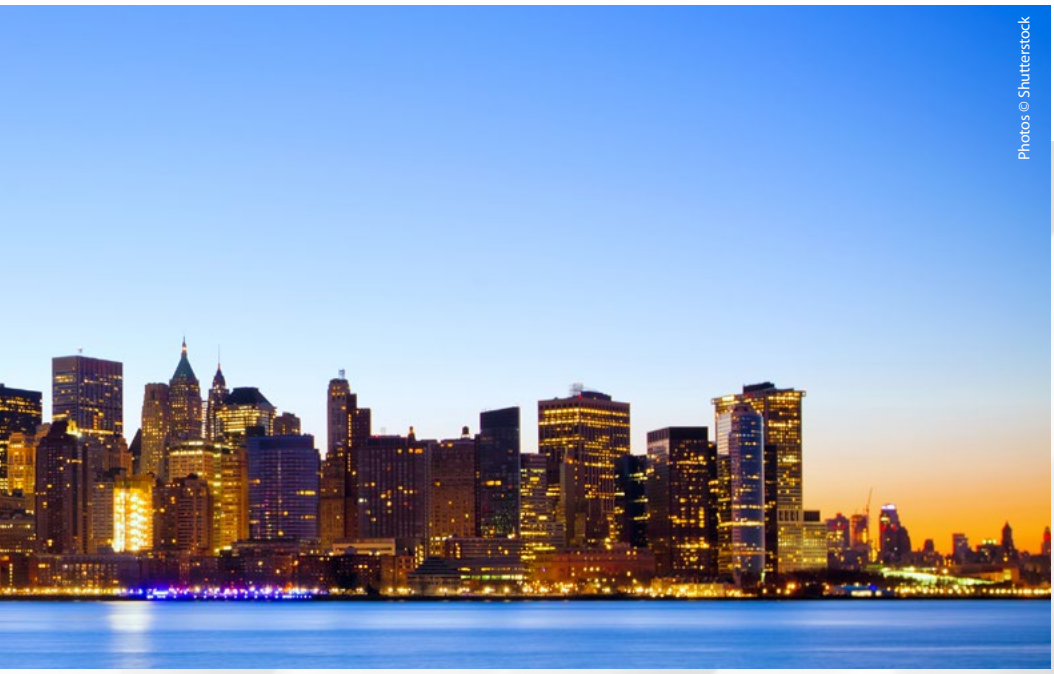
Many challenges needed to be overcome to reach the September 11, 2011, deadline. The World Trade Center construction area is an interconnected site where work on one project can potentially impact another nearby development. In the case of the memorial, the eastern portion of the structure sits on top of the Hub.

"There were extensive meetings involving scheduling and coordination, as well as ongoing design review between the owners, the prime contractors and the various subcontractors," said Gus Maimis, LEED® AP, BD+C, STV senior vice president and project executive.

A NEW BEACON FOR THE SKYLINE

Standing tall at a symbolic 1,776 feet, One World Trade Center was another challenging construction endeavor supported by STV. The firm was contracted by the PANYNJ to perform program management and owner's representative services for this skyscraper, which carries the weight of a nation's pride and serves as a beacon of strength and resilience.

The skyscraper – the tallest in the Western Hemisphere – is a combination of modern, innovative architecture and



Photos © Shutterstock

PROGRESS IN LOWER MANHATTAN

> *The National September 11 Memorial & Museum and One World Trade Center are open to the public*

> *23 million people have visited the memorial; 5 million have visited the museum*

> *50,000 new residents in Lower Manhattan in recent years*

sustainable design. The steel-frame and concrete core tower features a one-of-a-kind curtain wall system composed of three wall systems and more than 12,000 low iron glass panels with integral louvers. A podium wall and cable net wall frames building entrances. This curtain wall system, along with advanced building control systems, a fuel cell system, cooling systems using reclaimed water, and many other sustainable design elements, are aimed at meeting LEED® Gold certification requirements.

One World Trade Center includes three million square feet of office space on 71 floors; shopping and parking; an observation deck on the 100th and 101st floors; a skyline restaurant; and broadcast facilities. The skyscraper was recently named a 2015 Best Tall Building Americas by the Council on Tall Buildings and Urban Habitat.

With PANYNJ's budget in excess of $1 billion, STV aggressively controlled costs and mitigated any potential overbilling issues. To keep the project on schedule, STV monitored progress on a regular basis by developing matrices and tracking work in place. Beyond the sheer scale of the project, the construction of One World Trade Center was an extremely complex initiative. It required working in a very confined space adjacent to ongoing construction on Four World Trade Center and the nearby transit hub while maintaining vital transportation links such as PATH trains and 1 and 2 subway lines that were shored up and supported in the middle of the site. Working with other consultants on the site, STV determined that a portion of the original PATH tunnel under the World Trade Center site could remain while the new foundation was built around it, preserving PATH service with no disruption.

The building's successful opening in October 2014 served as a definitive reminder to the world that Lower Manhattan had regained its place as New York City's economic engine.

THE HEALING CONTINUES

It is evident today that despite the host of challenges, the World Trade Center site, with its many elements already in place and still to be constructed, is achieving the goals set by the PANYNJ and the vision set in the Ground Zero Master Plan.

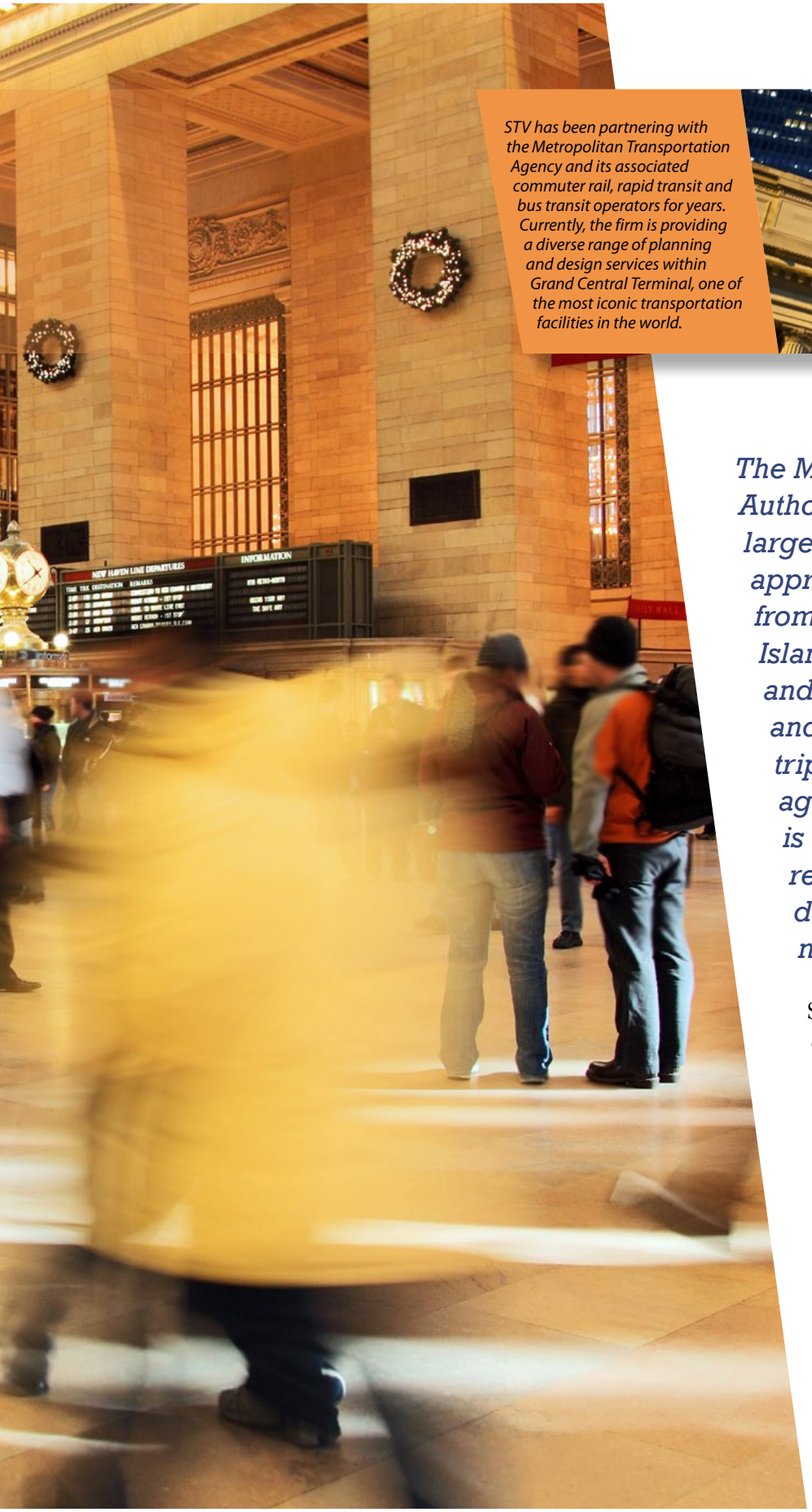
People and businesses have returned in force. Since opening in 2011, more than 23 million people have visited the September 11 Memorial, while more than five million people have passed through the museum since May 2014. Meanwhile, some 50,000 new residents have made Lower Manhattan their home, once again demonstrating how the neighborhood is the city's economic engine.

"Tourists are flocking to Lower Manhattan, and high-class retail and big-name restaurant development is unprecedented," Servedio said. "At the center of this revitalization stands the World Trade Center site, originally conceived and recognized today as a powerful symbol of freedom, honoring the thousands who lost their lives, their families, the survivors and the first responders." ■

FULL STOP

STV Does it All For America's Largest Mass Transportation System

Photos © Shutterstock



STV has been partnering with the Metropolitan Transportation Agency and its associated commuter rail, rapid transit and bus transit operators for years. Currently, the firm is providing a diverse range of planning and design services within Grand Central Terminal, one of the most iconic transportation facilities in the world.

The Metropolitan Transportation Authority (MTA) is North America's largest transportation network, serving approximately 15.2 million people from New York City through Long Island, southeastern New York State, and Connecticut. MTA subways, buses, and railroads provide 2.73 billion trips each year, so supporting the agency, a public-benefit corporation, is a complex, multifaceted effort requiring a breadth of planning, design and construction management services.

STV has been a dedicated partner and collaborator with MTA for more than four decades, working with the authority as it developed its most significant construction programs. During this time, STV built its nationally renowned transportation practice on the foundation of some of the MTA's most transformative initiatives.

Today, ridership throughout the MTA system continues to increase at an exponential rate, necessitating new and rehabilitated transportation infrastructure such as stations, maintenance facilities, power and signaling systems, and line extensions. And the impacts of recent storm events, such as

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Photo © Bob Zucker

The John D. Caemmerer West Side Storage Yard

Photo © Intervision New Media

The Coney Island Yard complex in Brooklyn, NY

> "We began work at the John D. Caemmerer West Side Storage Yard in 1978, and continue to support the site to this day."
>
> **WILLIAM F. MATTS, P.E.**
> *STV executive vice president and chief operating officer of Transportation & Infrastructure Division*

Hurricane Irene in 2011 and Superstorm Sandy in 2012, have caused the MTA to invest heavily in resiliency efforts that strive to protect this vital economic engine from future natural disasters.

In all of these instances, STV has demonstrated its ability to answer the call by thinking quickly and adapting to the MTA's evolving needs, whether keeping its busy transportation network in a state of good repair, or enabling it to expand to service the next generation of users.

BUILDING A RENOWNED RAIL TRANSPORTATION PRACTICE

One of the keys to STV's longstanding success in the passenger rail arena has been its ability to bring in top talent with hands-on expertise in the rail market sector. One of the firm's most significant hires came in the 1970s when Charles Defendorf, former chief engineer of the Penn Central Railroad, was named president of Seelye Stevenson Value and Knecht, an STV predecessor in New York. Defendorf set out to build a national passenger and freight rail practice by assembling a team of experts with decades of passenger rail experience.

The team's vast knowledge of New York rail served as the catalyst for the firm to successfully secure a number of high-profile commissions serving the MTA system in the 1970s and 80s, such as designing the rehabilitation of the paint shop and car wash at MTA New York City Transit's (NYC Transit) massive Coney Island complex in Brooklyn, one of the largest rapid transit yards in the world, and analysis and design services for the reconstruction of Long Island Rail Road's (LIRR) Flatbush Avenue Terminal, also in Brooklyn.

These early contracts set the stage for one of the seminal rail transportation commissions in the firm's history: providing planning, design and construction-phase services at the John D. Caemmerer West Side Storage Yard and Maintenance Facility in Manhattan.

State Senator John Caemmerer, the project's namesake, called the facility "the single most important capital project on the LIRR." By being able to store up to 320 commuter cars, the new storage yard, which was adjacent to Pennsylvania Station, promised to increase LIRR service by more than 30 percent.

STV's initial feasibility study for the yard grew into a number of different initiatives that still affect LIRR service and passenger rail in New York today. STV provided design and construction supervision services for the North

Access Connection Tunnel under the yard complex, allowing for future routing of Albany-bound Amtrak trains into Pennsylvania Station.

"We began work at the John D. Caemmerer West Side Storage Yard in 1978, and continue to support the site to this day," said William F. Matts, P.E., STV executive vice president and chief operating officer of the firm's Transportation & Infrastructure Division.

STV soon earned a number of contracts that supported the rehabilitation of other critical LIRR structures, most notably shops and yards. The firm, as a subconsultant, was contracted to provide planning and design services for the 68.4-acre Holban Yard/Hillside maintenance complex in Hollis, NY, one of the railroad's largest maintenance facilities. The firm also performed a range of services for an 11-phase, 10-year LIRR program to replace all of the railroad's major repair facilities, including Long Island City Yard, Port Jefferson Yard, Montauk Yard, Richmond Hill Yard, Speonk Yard and Oyster Bay Yard.

STV's ability to support the MTA again and again, with a vast array of services, proved critical as the LIRR readied itself for a next wave of expansion in the early 1990s.

EAST SIDE ACCESS AND BEYOND

One of the most groundbreaking initiatives currently under construction within the MTA network is LIRR's East Side Access, which will connect the commuter rail to Grand Central Terminal and the east side of Manhattan. STV was first brought in to support East Side Access early on when the firm performed an operational study that analyzed locations for a new terminal, potential property acquisitions, and track alignments and interlockings that could impact existing services. The firm was then retained by LIRR to perform a major investment study to obtain Federal Transit Administration funding, which ultimately advanced the initiative to the design and construction phases.

Today, STV, in joint venture, is providing tunnel engineering and other design services that are critical to East Side Access's development between Queens and Manhattan. That includes conceptual designs for the new line's signals, communications, central control and traction power systems; and the design of infrastructure improvements at the Harold Interlocking in Queens – the busiest rail interlocking in North America as it marks the convergence of LIRR, NJ TRANSIT and Amtrak operations. One of STV's recommendations for Harold Interlocking was the addition of new bypass tracks for Amtrak, which separated the interstate railroad's operations from LIRR, thereby eliminating at-grade conflicts that had existed at the site.

Demonstrating its planning prowess and vast knowledge of pedestrian modeling software, the firm is also developing access and egress solutions within Grand Central Terminal that will help manage the anticipated increased flow of pedestrians within the national landmark.

Because East Side Access's impacts will likely ripple through the entire LIRR system, STV is currently supporting the railroad on other projects that will help the agency meet anticipated increases in ridership. One of the key areas in these efforts is along LIRR's Ronkonkoma Main Line Branch – an extension STV knows well. In the 1980s, the firm, as a subconsultant, performed design services for the electrification of nearly 25 miles of track between Hicksville and Ronkonkoma, including the design of an electrified third rail and some 20 substations. More than 30 years later, STV, in joint venture, is now performing environmental planning and design services for a $435 million initiative that will add a second track and spur transit-oriented development between Farmingdale and Ronkonkoma.

Once the line is complete, it will allow for four additional half-hourly off-peak trains, while also increasing on-time performance and schedule reliability

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East Side Access will connect the LIRR to Grand Central Terminal and the east side of Manhattan.

along the Ronkonkoma Branch line. The LIRR is eyeing future transit-oriented development at key areas such as Wyandanch Rising in the Town of Babylon, the Ronkonkoma Hub in the Town of Brookhaven, and a proposed Republic Station adjacent to the Republic Airport and the vital Route 110 corridor in Suffolk County.

"There are a lot of moving pieces for this one project, and we've had to coordinate with the client, our joint venture partner, other subconsultants and the community to map this all out," said Richard Hanington, an STV senior transportation planner in New York. "The enhancements being developed for this initiative also tie in to a number of other projects along the LIRR main line that STV is supporting."

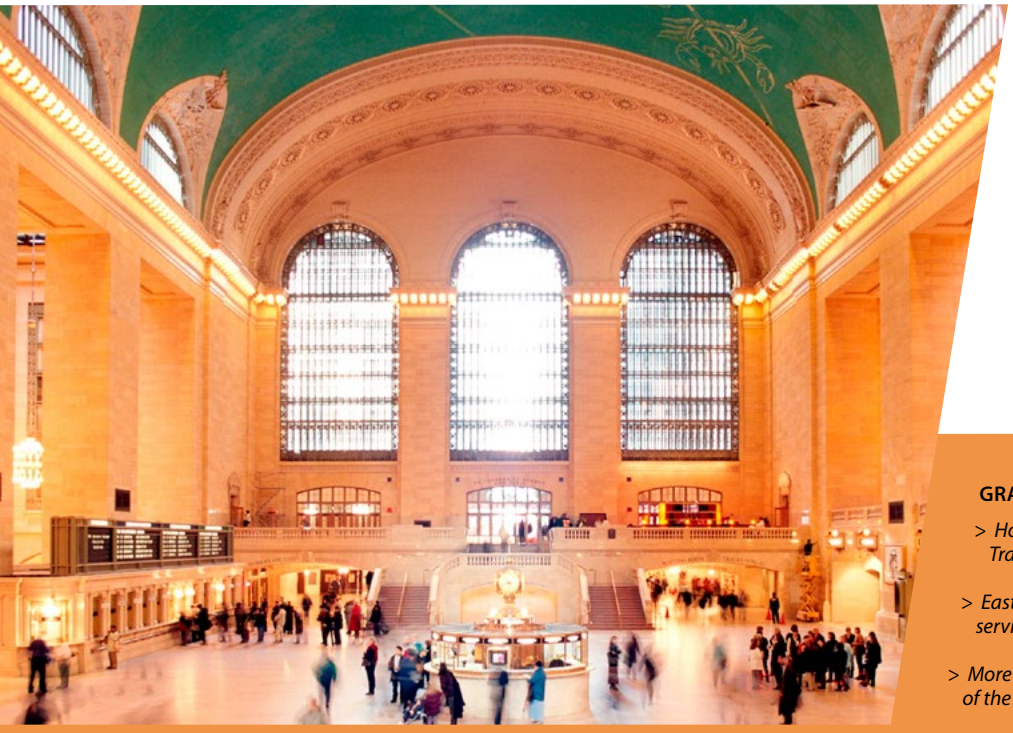
One of those projects is the expansion of the Mid-Suffolk Yard in Ronkonkoma. STV designed the original yard in the 1980s. However, with the construction of East Side Access and the main line second track project underway, it is imperative for the MTA to upgrade some of its key storage and maintenance facilities to keep the system operating at an optimal level once these other major capital programs are complete. STV is preparing 30-percent design documents to be used during the design-build procurement process. The firm is also performing an environmental assessment and providing engineering design services for the yard.

KEEPING LIRR VEHICLES ROLLING

Beyond its history of providing an array of planning and design services in support of LIRR infrastructure such as line segments, shops, yards, signals and power systems and stations, STV has also played a critical role in the design, inspection and procurement of vehicles utilized by LIRR, and other MTA properties such as Metro-North Railroad.

In the 1990s, STV was selected to review and evaluate proposals from potential suppliers of stainless steel bi-level commuter coaches and diesel locomotives for the LIRR. This program evolved into one of the largest and most complex rolling stock procurements the firm ever undertook. After this very successful program, STV was awarded additional work in the vehicle arena. In the late 1990s/early 2000s, STV, as a subconsultant to LTK, oversaw procurement management activities for LIRR/Metro-North's acquisition of more than 1,110 electrical multiple-unit commuter rail cars. These vehicles, known as M-7s, marked a huge upgrade over their predecessors, featuring advanced amenities like the extensive use of microprocessor controls, unitized rooftop air conditioning and an automatic passenger announcement/information system.

With the last of the M-7s entering revenue service in 2010, the firm is now assisting LIRR as it looks further into the future. STV is performing a similar role once again as a subconsultant to LTK in support of LIRR's acquisition of 92 M-9 vehicles. The first pilot car is expected to start testing in late 2016. In the interim, the MTA is exploring options for hundreds of additional M-9s to accommodate anticipated ridership increases.



GRAND CENTRAL TERMINAL FAST FACTS

> *Home to Metro-North Railroad and New York City Transit subway.*

> *East Side Access will bring Long Island Rail Road service to a new station underneath the terminal.*

> *More than 21.6 million annual visitors make it one of the 10 busiest tourist destinations in the world.*

"STV has been a proud partner with the MTA for their various commuter rail car procurement programs for nearly 20 years," said Gary Bartholomaus, an STV associate and vehicles specialist in the firm's New York office. "Our long-term support on the vehicle side mirrors all of our various contributions to the expansion efforts of the LIRR, and other MTA properties, dating back to some of the firm's earliest commissions in the passenger rail market sector more than 40 years ago."

MAKING NEW HISTORY WITH METRO-NORTH

Similar to its longstanding relationship with LIRR, STV has demonstrated a track record of assisting the MTA's other major commuter system – Metro-North, which services parts of New York and Connecticut north of New York City – via the design and construction management of various structures and facilities that play a critical part in the railroad's operations.

One of the firm's first commissions for Metro-North was the design of a new maintenance facility in Brewster, NY, that was developed to service the railroad's newest fleet of electrified passenger rail cars, the M-3s. The Brewster Shop and Yard supplemented existing repair services that were being provided by Metro-North's Harmon Shop in Croton-on-Hudson, NY, and the New Haven Maintenance Complex in New Haven, CT. As Metro-North's ridership continued to grow, STV would later be commissioned to provide design services for expansion efforts at Harmon and New Haven.

Additionally, STV demonstrated its ability to design rehabilitations for vital rail structures when the firm, in

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A GREENER BUS DEPOT A BOON FOR COMMUNITY

In an instance where a recent Metropolitan Transportation Authority (MTA) initiative also functioned as an example of urban renewal, STV, as part of a design-build team led by Silverite Construction, served as the architect- and engineer-of-record for the development of the new Mother Clara Hale Bus Depot. Located in New York's historic Harlem neighborhood, the green bus depot received rave reviews from public officials and the community alike after opening in late 2014.

The original bus depot was built in 1890 as a trolley barn and underwent two rehabilitations before it was renamed in 1993 to honor Harlem-based humanitarian Mother Clara Hale. The facility was finally demolished in 2009 to make way for the new bus depot.

Developing a new depot was critical for MTA New York City Transit's (NYC Transit) bus operations as it plays a part in the agency's larger initiative to integrate new hybrid-electric and ultra-low-emission bus vehicles into its fleet.

The finished facility demonstrates the full gamut of STV's design expertise. As the first certified LEED® Gold bus depot in the MTA system, the building uses sustainable design elements such as a carbon-footprint-reducing green roof and a rainwater collection system that allows storm water to be used for bus washing – reducing operation costs for the owner. The building's south façade acts as a passive heating device. A dark green wall finish material has tiny perforations that allow outdoor air ventilation to be pulled in and preheated in the space between the façade and masonry. The warmer air is then drawn in by HVAC units, which reduces the natural gas heating load. The depot's façade features an original mosaic and laminated glass artwork geared toward beautifying the neighborhood. Additionally, the new structure accommodates more space and parking for the buses, reducing local street congestion around the depot.

"By working closely with the contractor and the community, we were able to help create something that benefits many people many different ways," said Joseph Lucca, P.E., LEED® AP, STV vice president and senior project manager in the New York office. "Mother Clara Hale Bus Depot is a great demonstration of the range of design services STV can provide while developing a first-of-a-kind facility."

Photo © Chris Cooper

A second track is currently under construction for LIRR's Ronkonkoma Main Line Branch.

STV provided design services for the electrification of LIRR's Ronkonkoma Main Line Branch in the 1980s.

joint venture, performed a full suite of design and construction support services for the replacement of the Peck Drawbridge and the 3,000-foot-long Bridgeport Railroad Viaduct, which is used by Metro-North's New Haven Line in Connecticut, as well as Amtrak. A staged construction plan successfully maintained a normal train timetable while a new structure was put into place.

However, the firm's most notable commission in support of Metro-North came at one of the nation's most famous rail terminals. As a subconsultant to Beyer Blinder Belle, STV was the lead engineer during the oft-celebrated restoration of Grand Central Terminal. The project team won the prestigious Presidential Award for Design Excellence in 2000.

After the bulk of restoration was completed, STV continued to play a pivotal role in making a visit to Grand Central a commuter- and tourist-friendly experience. The North End Access Improvement Project provided new entrances and passageways so that visitors could exit north of the terminal for the first time. STV provided architectural and engineering design services for this initiative.

STV's work at Grand Central paved the way for the firm to play a part in future Metro-North initiatives that allowed the railroad to expand its service offerings or keep its current infrastructure in a state of good repair. In recent years, STV was contracted by the Connecticut Department of Transportation to perform resident engineering inspection (REI) and construction engineering inspection (CEI) services for two new stations along Metro-North's New Haven Line in Fairfield and West Haven, CT.

Within the same timeframe, STV provided inspections, designed repairs and conducted REI services for the rehabilitation of the 108-year-old Woodbury Viaduct in Highland Mills, NY, along Metro-North's Port Jervis Line. The firm's oversight was critical to two particularly challenging tasks: the accelerated installation of a new precast concrete abutment backwall and wingwall on the viaduct's east end, and the emergency restoration of Pier 2S, which started to crumble and jeopardized public safety during construction.

NEW AND IMPROVED NEW YORK CITY SUBWAY INFRASTRUCTURE

New York City's subway, operated by NYC Transit, is among the oldest, largest and busiest rapid transit systems in the world. With more than 6 million riders using the subway every day, the system is under constant strain

> "There are a lot of moving pieces for this one project, and we've had to coordinate with the client, our joint venture partner, other subconsultants and the community to map this all out. The enhancements being developed for this initiative also tie in to a number of other projects along the LIRR main line that STV is supporting."
>
> **RICHARD HANINGTON**
> *STV senior transportation planner*

necessitating regular rehabilitations and upgrades as well as new infrastructure.

STV's earliest commissions in the passenger rail market sector supported keeping the city's subways in a state of good repair. During the 1970s and early 1980s the firm was contracted by NYC Transit to provide vehicle engineering services for the purchase of thousands of new subway transit cars that were used along the system's 1, 2, 3, 4, 5, 7, A, C, D, E, F, G, M, N, D and R lines. The firm worked on this program for more than two decades, helping STV to grow its vehicles group into the nationally renowned practice it is today.

Upon that foundation, STV would go on to provide planning, design and construction support services for the rehabilitation of many of the subway system's largest and most historic facilities. In the late 1980s, STV performed engineering design services at the Fulton Street Station in Lower Manhattan, which had just been designated a historic landmark. The firm also supported design modifications that improved conditions at the Fifth Avenue/53rd Street Station; the 66th Street Lincoln Center Station; the Grand Central Subway Station complex; and the Union Square complex, all in Manhattan. During this period, STV also helped preserve subway services along the 1.8-mile Franklin Avenue Shuttle Line in Brooklyn – another national landmark – as part of an enormously successful restoration and renovation program.

STV's support of the subway system's rehabilitation and expansion continues to this day. In 2015, NYC Transit opened its first new subway station in nearly 25 years at the 34th Street – Hudson Yards stop, a key component of the $2.42 billion initiative to extend the No. 7 subway line from Times Square to Manhattan's far West Side. STV was involved in the planning and design of the new station since the earliest phases of the project in 2002 and has overseen the design and provided construction-phase services for nearly every aspect of its power and communications systems.

"This project has been in the making for more than a decade and represents thousands of hours of hard work and determination," said Yayu Choy, P.E., STV project manager and senior communications engineer in New York. "We are proud to have played an integral role in bringing this to fruition for the benefit of our great city and the people who will live and work in this new neighborhood for generations to come."

In the aftermath of Superstorm Sandy in 2012, the firm has been playing a key role in NYC Transit's flood resiliency efforts at subway tunnels, stations, maintenance shops and yards, substations and other traction power infrastructure in Manhattan, Queens and Brooklyn.

In one instance, STV has returned to the site of one of its very first passenger rail transportation commissions – the Coney Island Yard complex – to study and design a whole host of upgrades that strive to keep the subway system running after a future storm or flood event.

"Sandy's flooding damaged duct banks, cables, and other critical traction power equipment. We found that a bridge structure for cables, which will run the entire length of the yard, was the ideal way to keep the complex's systems operational in case of a future incident," said Earl Fish, P.E., an STV systems engineer in the New York office. "The size and scope of what we're designing for Coney Island Yard's traction power system is without precedent." ■

VERSATILE VISIONARIES

Photo © Paul Warchol Photography

The Science Building at Kutztown University

STV HELPS HIGHER EDUCATION CLIENTS ACHIEVE GOALS WITH DESIGN, CONSTRUCTION MANAGEMENT OR BOTH

As a full-service firm specializing in architectural, engineering, planning, environmental and construction management services, STV can truly do it all. And on college campuses across the United States, the firm's clients often ask STV to do it all – sometimes within the same project.

STV's versatility within the higher education market sector can best be demonstrated with its recent work in support of two clients: the City University of New York (CUNY) public university system and Kutztown University in Kutztown, PA. The firm has a long history of providing an array of design and construction management services for both clients and, in a few recent renovations and new facility projects, has been called upon to perform as both the lead designer and construction manager.

BUILDING A FULL-SERVICE PORTFOLIO AT CUNY

Consisting of 24 institutions and some 300 buildings located throughout New York City's five boroughs, CUNY is the third-largest university system and the largest urban university in the country.

But beyond the size of its system, in recent years, CUNY officials have also had to consider the age of its infrastructure – the average age of its buildings is more than 50 years old. As a result, since 2011, CUNY has been in the midst of a transformative capital improvement program, investing more than $3.8 billion in new construction and renovation projects.

With so many schools featuring a broad scope of specialties and focuses – from the hard sciences to communications and performing arts – STV's work in support of CUNY has offered the opportunity to design and construct a variety of building types as part of this capital improvement program.

Queens College, a part of CUNY

Roosevelt House Public Policy Institute at Hunter College

STV provided design and construction management services for a new science lab at Queens College.

A highlight of the firm's current CUNY portfolio includes the renovation of multiple laboratories in the new Science Building at Queens College. STV was contracted to perform design and construction management services for this project, which was procured using the design-build delivery method.

A critical challenge for this initiative was that all improvements needed to be completed with minimal disruption to students and staff occupying the building. However, by providing both design and construction management services, STV's project team was able to collaborate closely from preliminary through final design to overcome this challenge, while also developing time- and money-saving opportunities for the client.

"Working with our own, in-house design team offered us un-paralleled transparency," said Matthew Nolty, senior associate and project manager in STV's Construction Management Division in New York. "As the construction manager, we have almost immediate access to our design team over the duration of the project. It is truly a team effort, where the depth of the STV bench can be quickly called upon and efficiently used to overcome challenges that may develop during the construction process."

Following on the heels of the Queens College laboratory renovations, the firm was asked to provide design and construction management services for the replacement of a 40,000-square-foot wood floor in the school's Fitzgerald Gymnasium. Work is being completed in two phases, allowing the college to maintain its athletic and community activities including NCAA (National Collegiate Athletic Association) sports.

Additionally, STV is performing architectural and engineering design for the reconstruction of Baskerville Hall at City College of New York – a landmark building originally constructed in 1906 that for years housed one of the largest original lecture halls on the campus. This $4 million initiative entails renovating the lecture hall, as well as new second floor bathrooms, new multipurpose rooms, and renovating bathrooms.

Based on STV's success within the CUNY system, the firm has recently been awarded new contracts for engineering design and construction management services on behalf of the City University Construction Fund.

"Our recent experience with CUNY has been very rewarding as it has allowed us to play a key part in a successful improvement program through both our design and construction management expertise," said Sandra Benjamin, AIA, LEED® AP, BD+C, NCARB, senior associate and senior project manager in STV's Buildings & Facilities Division in New

Kutztown's Academic Forum is one of many campus facilities STV has supported over the years.

The Sharadin Arts Building at Kutztown University

York. "The client has expressed satisfaction with our performance, which is evidenced by repeat awards for new work throughout the system."

A FIRM THAT LISTENS AT KUTZTOWN

After providing a variety of planning, design and construction management services for more than 60 projects at Kutztown University, a piece of STV can be found on nearly every bit of the school's Pennsylvania campus.

STV is currently providing construction management services for the renovation of the Cub Café in Kutztown's McFarland Student Union Building. But the firm's support of the 325-acre campus dates back to 1998 when STV was tapped to oversee a $1.6 million roof replacement at Keystone Hall.

"We never took anything for granted, but they have been very good to us over the years," said Jeff Mosser, a project director and associate in the firm's Construction Management Division in Douglassville, PA. "I think they recognized that we've performed very well as a team. We have a broad range of technical expertise with our planners, engineers, architects and construction managers, and we've always been able to use those resources to provide a quality job for this client."

STV's commitment to collaboration and client services has yielded a number of standout projects at Kutztown. The firm performed design and construction management services for the $15.7 million Academic Forum. The facility opened to rave reviews in 2007 and included smart classrooms, a food court and a student lounge.

Six years later, the firm was honored by a number of industry organizations for its role in the renovation and expansion of the $16.8 million Schaeffer Auditorium, Kutztown's premiere concert and performance hall. STV received a Project Achievement Award in 2014 from the Construction Management Association of America's Mid-Atlantic Chapter.

"What did STV do that was so special? In a single word, they listened," wrote Willis Rapp, a professor emeritus and chair of the university's music department, in a testimonial letter. "They paid close attention to the important aspects of the project and made sure they were not ignored."

By providing such exemplary work, STV has earned Kutztown's trust, Mosser said. "They can assign us a project and not have to worry about our performance or dedication. It provides us all with a sense of pride as we walk around the campus and see all the different ways we've contributed to the growth of this university." ■

All Photos © Alan Blakely Photography

A NEW FACILITY FROM DESIGN TO STARTUP

STV Flexes Full-Service Muscles for Gas Plant and Gathering System

Thanks to the full-service capabilities of STV's Energy Services Division, a project that was initially projected to be a small natural gas compressor station evolved into one of the largest energy systems initiatives the division ever supported in the Rocky Mountain Region.

Since 2013, STV has provided a range of design, procurement, start-up and commissioning services for a 45 million standard cubic feet per day gas plant in North Dakota, along with a 55-mile gas gathering system pipeline and a 55-mile gas lift distribution pipeline on behalf of Flatirons Field Services, LLC, a privately owned energy company that operates primarily out of North Dakota, Wyoming and Colorado.

The facility became operational last year, and STV continues to support Flatirons by providing field services such as on-site engineering, construction management, instrumentation, controls and programming, wellhead hoop-up support, contract operations, and pipeline inspections.

"Having a full suite of project services helped set STV apart from other energy service firms in the region, allowing us to have this successful partnership with Flatirons," said Duane Compton, PMP, a senior project manager in STV's Denver office. "Our project team offered a personal touch for this client, and supported them every step of the way during this ambitious initiative."

Flatirons was founded in 2013 by a trio of energy service veterans and

> "Flatirons and its partnering oil company decided that using a processed pipeline-quality gas would be a better option for gas life operations. Based on that philosophy, and several other factors, Flatirons decided to move forward with the development of a large gas plant."
>
> **DUANE COMPTON, PMP**
> *STV senior project manager*

within months of its start-up, STV was helping it develop a small gas gathering system pipeline and compressor station that would enhance the company's oil recovery methods. Asked to provide procurement services, document control, cost tracking, cost forecasting and various other services, STV's responsibilities continued to grow as Flatirons expanded its program.

"Flatirons and its partnering oil company decided that using a processed pipeline-quality gas would be a better option for gas life operations," Compton said. "Based on that philosophy, and several other factors, Flatirons decided to move forward with the development of a large gas plant."

STV performed process engineering; piping design; electrical, instrumentation and controls engineering; and design and civil/structural engineering and design for the facility. Now, just months after the facility opened, Flatirons is already contemplating doubling its size in order to handle 90 million standard cubic feet of gas per day.

"This is a program that just keeps growing and growing," Compton said. "Fortunately, it plays to the strengths of our design and engineering teams. Prior to this, STV had never designed something of this size and scope, but we have the proper technical expertise, especially as it relates to process engineering, and piping and electrical/instrumentation design to help make this initiative a reality for Flatirons."

Since the plant opened, STV startup staff have been at the site 24 hours a day working alongside Flatirons staff providing operations maintenance. For the gas-gathering pipeline system, the firm performed automation and calibration services for all of the gas metering systems, as well as collected data on behalf of the client.

CONTINUED ON NEXT PAGE

STV's field services capabilities allow us to augment our design and construction management teams by performing specialized support services. For example, to help keep the opening of the Flatirons plant on schedule, STV provided commissioning services at an earlier point in construction than what's traditionally done. As a result, all commissioning was completed about a month ahead of schedule.

"There are not a lot of other firms that do what we do," said Chris Anderson, STV field services manager in the Bismarck, ND, office. "Often, once the project is designed and constructed, the facility is handed off to a third party to provide start-up and commissioning. Offering these services has allowed us to augment our design team while also developing some key relationships of our own." ■

Photo © J. Alex Lang

THE RAILROAD TIES THAT BIND

Long Relationships with Norfolk Southern Built on Deep Understanding of Railroad's Culture

STV's relationship with Norfolk Southern (NS) goes back more than 50 years. So it's not surprising that when the railroad took on some of its most ambitious expansion plans over the past decade, it turned to a trusted partner – STV.

Serving as construction manager, STV and its predecessor, Ralph Whitehead Associates (RWA), have overseen more than $350 million of work over the past 10 years for the nation's fourth-largest railroad as the freight hauler positions itself for continued growth throughout its 22-state territory.

To facilitate much of the growth, NS recently looked to STV to help double the size of its Bellevue Yard sorting and classification facility located about 50 miles outside Toledo, OH, and nearly midway between Chicago and New York along the railroad's busiest freight line. That project, which wrapped in 2014, followed the completion of the Heartland Corridor and a series of other projects that allowed the railroad to increase capacity while also improving efficiency.

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Norfolk Southern's Bellevue Yard

Situated at the crossroads of five of the railroad's lines, Bellevue Yard needed to expand to meet growing demand for freight rail transportation. Bellevue was built in 1967 and serves as NS's largest hump yard – facilities that feature a lead track on a hill, or hump, over which an engine pushes cars so they can be sorted and classified according to destination – and the second largest classification facility in North America.

STV's $40 million portion of the project entailed providing oversight for the construction of 38 new tracks, which nearly doubled the yard's capacity from 1,800 to 3,000 cars a day. To increase efficiency, the three-year project required 145 miles of new underground cable for communication and signal systems to direct train traffic along 162 new automated switches and 11 upgraded control points.

"It involved a lot of new construction and detailed planning and coordination between the railroad's transportation, mechanical, communications, signal and maintenance-of-way departments and the contractor," said Bobby Phillips, P.E., STV vice president and project manager for the rail division in Charlotte, NC.

The project also included a new pedestrian tunnel under the existing tracks, a new vehicle access road bridge, along with associated drainage, lighting and road improvements.

INCREASING EFFICIENCY

The need to upgrade Bellevue became more urgent after NS took on one of its largest expansion projects along the Heartland Corridor. The massive $191 million public-private partnership was considered one of the most extensive railroad engineering projects in modern times. It increased the height clearances of 28 tunnels and seven bridges while removing 24 overhead obstacles along a nearly 380-mile stretch across Virginia, West Virginia, Kentucky and Ohio, allowing the railroad to run double-stacked container cars through the corridor.

STV was contracted to perform construction management and civil and structural engineering along with rail design and inspection services to modify 5.7 miles of tunnels and lower the tracks at three overhead bridges. In addition, three sets of overhead wires were raised to allow for the taller trains. Consequently, NS shaved 250 miles off the mid-Atlantic to Midwest route and saved about a day's travel time.

"It was the first public-private partnership of its kind and highlighted the benefits of public funding for a more energy-efficient form of transportation that is also greener with fewer carbon emissions," Phillips said. "And it keeps trucks off public highways, which saves tax dollars as far as road maintenance is concerned."

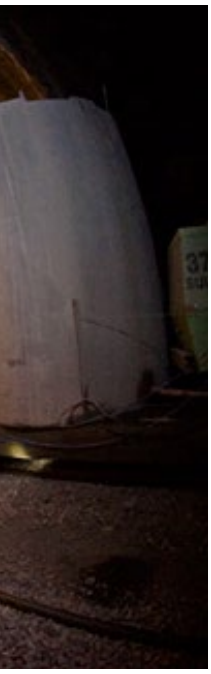

Photo left and above: The Heartland Corridor initiative helped make Norfolk Southern's mid-Atlantic to Midwest route far more efficient for the railroad by increasing clearances at a number of tunnels and bridges.

In its more than 50-year relationship with Norfolk Southern, STV has provided a broad range of services including:

- *Bridge Design*
- *Bridge Inspection*
- *Emergency Services*
- *Environmental Engineering*
- *Track Design*
- *Track Inspection and Assessment*
- *Railroad Planning*
- *Cost Estimating*
- *Scheduling*
- *Construction/Program Management*
- *Third Party Project Management*
- *Safety Compliance Training*

> *"It's important in railroading to understand the culture, urgency and value of clear communications between the client and the project manager."*
>
> **BOBBY PHILLIPS, P.E.**
> *STV vice president and project manager for rail division in Charlotte, NC*

After completing the project four months ahead of schedule, Jim Carter, NS's chief engineer of bridges and structures, praised STV in a letter of commendation.

"STV/RWA performed its services professionally and with high regard to the project objectives," Carter said. "We at Norfolk Southern are appreciative of our longstanding relationship with STV/RWA and are proud to recognize its railroad capabilities."

CULTURAL UNDERSTANDING

STV's close ties with Norfolk Southern are part of a shared culture dating back to the early 1960s when RWA recruited former railroad engineers who did not relocate after Southern Railroad centralized its engineering office in Atlanta. The outcome was a staff with a solid understanding of the railroad's priorities and business practices.

"It's important in railroading to understand the culture, urgency and value of clear communications between the client and the project manager," said Phillips. "There's also an understanding of how to do things the railroad way when it comes to design criteria for bridges because there's so much more steel and concrete due to the sheer weight of the trains."

A clear understanding of safety factors and the inherent limitations of designing projects on or near active railways have also been an important aspect of doing business with NS.

"It really all comes down to two things: institutional knowledge and safety," said David Wyatt, a special projects manager in STV's Atlanta office who has more than 30 years of experience in the freight railroad industry. "STV not only has a knowledge of the industry on a superior level, but it is also very committed to safety."

Since 1997, the firm has worked alongside NS and its contractors and consultants, conducting railway worker protection training to improve safety.

"STV understands the operation of the railroad and that train service has to run without being delayed or interrupted," Wyatt said. "The people we have are

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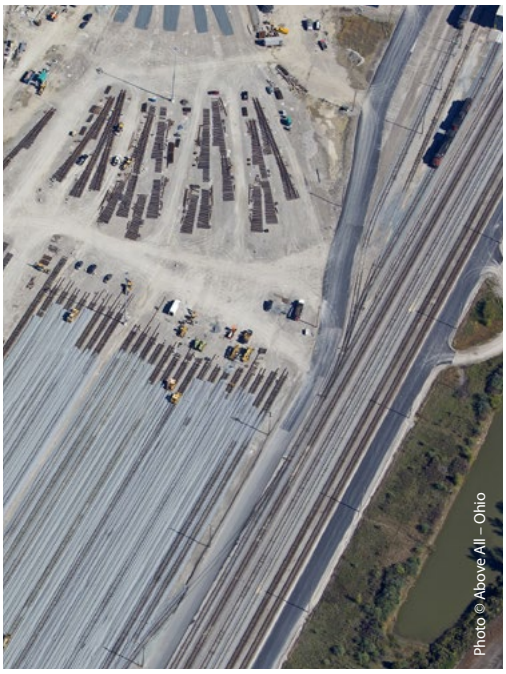


Photo right and above: The Bellevue Yard is NS's largest hump yard and the second largest classification facility in North America.

very astute and knowledgeable and really understand how the railroad works."

BUILDING CAPACITY

In addition to the Heartland Corridor and Bellevue initiatives, NS recently contracted STV to oversee the construction of the new 175-acre Rickenbacker Intermodal Yard – centrally located along the Heartland Corridor in Columbus, OH – to distribute freight to major markets throughout Ohio, western Pennsylvania and Indiana without disrupting existing freight traffic on an active rail line.

The Rickenbacker Intermodal facility was built on former farmland and STV engineers were faced with difficult drainage and poor soil conditions to develop a stormwater management design. To stabilize the surface for additional storage and loading tracks, STV undertook the largest soil lime drying project ever conducted in Ohio. Once the drainage, grading and utility issues were addressed, the firm oversaw the largest roller compacted concrete paving project that NS had ever undertaken, producing a facility capable of holding up to 2,000 intermodal trailers with the capacity to handle more than 250,000 shipping containers annually. It was a major public-private partnership and STV's team oversaw all document control to make sure all records and documents were maintained to support the project.

In recent years, STV has provided construction management support services for similar new NS regional intermodal facilities in Birmingham, AL, Charlotte, NC, Memphis, TN, Titusville, FL, and Chicago.

STAYING ON TRACK

Overseeing major capital projects for one of the nation's largest railroads is a familiar role for STV, but it's not the firm's only role. A number of niche services, such as assisting in construction cost estimates and scheduling assessments on assets and infrastructure along NS's vast network to support Surface Transportation Board rate cases and providing Federal Railroad Administration safety and compliance training for consultants and contractors working on the railroad's right of way.

The railroad also uses STV's expertise for bridge design and construction observation services. Often, when there is a third-party proposal to build a new road, bridge or other structure that encroaches on railroad right-of-way STV reviews the plans for compliance with railroad standards and then make sure the railroad is protected while construction is performed by a third-party contractor.

"That's the meat of what we do for the railroad right now and it continues to grow," Phillips said. ■

WHAT'S NEW AT STV

A TOP DESIGN FIRM

ENR

New York

News, Data and Analysis for the Construction Industry in New York and New Jersey

COURTESY OF THE PORT AUTHORITY OF NEW YORK & NEW JERSEY

NEW YORK DESIGN FIRM OF THE YEAR: STV

STV Revenue Takes Off With Resiliency and More Rebuilding

TOP DESIGN FIRMS • COLUMBIA U.'S MANHATTANVILLE CAMPUS

enr.com/newyork

May 25/June 1, 2015 ■ ENRNewYork NY1

Based on the company's strong performance over the past year, Engineering News-Record New York named STV its 2015 Designer of the Year in the New York region.

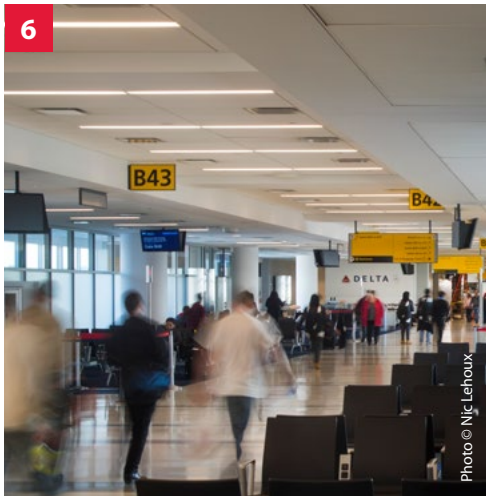
A nearly 60 percent jump in revenues over the past year helped propel the firm from 7th on the magazine's list of designers in 2014 to 4th this year. Some of the key initiatives that boosted STV's ranking included the firm's support of resiliency efforts at the 75-acre Coney Island Yard complex for MTA New York City Transit (NYC Transit). STV was also contracted by NYC Transit to perform structural repair and communications and traction power designs for the 53rd Street tunnel.

Beyond Sandy recovery and resiliency projects, the firm is providing design services as part of the Downtown Design Partnership joint venture for the new World Trade Center Transportation Hub in Lower Manhattan on behalf of the Port Authority of New York and New Jersey (see pages 2-9 for more information). In the Bronx, STV was contracted by the New York State Dormitory Authority to perform similar services for the Bronx Psychiatric Center Adult Behavioral Health Center and Campus. That project should be completed later this year.

AWARD-WINNING PROJECTS

For years, STV has played a key role in designing and overseeing the construction of iconic structures and transportation systems that have shaped communities and enhanced the quality of life for users. Here are some recent award-winning initiatives:

1 The I-85/I-485 interchange in Charlotte, NC, dubbed the "turbine interchange," received the prestigious Grand Conceptor Award and Honor Award from the American Council of Engineering Companies (ACEC) of North Carolina's 2016 Engineering Excellence Awards (EEA); the 2015 Excellence in Design (Engineering) Award, one of the Design-Build Institute of America's (DBIA) highest honors; and was named the 2015 Best Project in the Highway/Bridge Category by Engineering News-Record's Southeast magazine. The Lane Construction Corporation/STV design-build team was contracted by the North Carolina Department of Transportation to create this iconic interchange, which is a first-of-a-kind structure in the state.



2 The Anaheim Regional Transportation Intermodal Center, better known as ARTIC, was named Project of the Year in Southern California by ENR California magazine. The LEED® (Leadership in Energy and Environmental Design) Platinum facility, which brings together 10 modes of transportation, also received an Honorable Mention from Building Design + Construction (BD+C) Magazine in its Building Team Awards program. STV performed program management services for this 67,880-square-foot facility.

3 One of the first LEED® Gold-certified bus facilities in the country, the Mother Clara Hale Bus Depot in New York City received a Silver Award in BD+C's Building Team Awards program; an ACEC New York 2016 EEA Diamond Award, qualifying it as a finalist in ACEC EEA's national competition; and was named a 2015 Project of the Year by Energy Manager Today magazine. STV provided architectural and engineering design for the 390,000-square-foot facility, which is owned by MTA NYC Transit. Silverite Construction served as the builder (for more details, see article on page 15).

4 The $43 million Clark-LaSalle/Division Station Rehabilitation in Chicago received an ACEC Illionis 2016 EEA Special Achievement Award in the Special Projects Category. STV managed the construction of this station upgrade, which is a part of the Chicago Transit Authority's Red Line, on behalf of the Chicago Department of Transportation.

5 For its role in the resiliency efforts at the Coney Island Yard in Brooklyn, STV was honored with an ACEC NY 2016 EEA Platinum Award in the Studies, Research and Consulting Engineering Services category. As contracted by MTA NYC Transit, STV performed a range of design services for a flood protection feasibility study at one of the largest rapid transit maintenance yards in the world, which had flooded during Superstorm Sandy in 2012.

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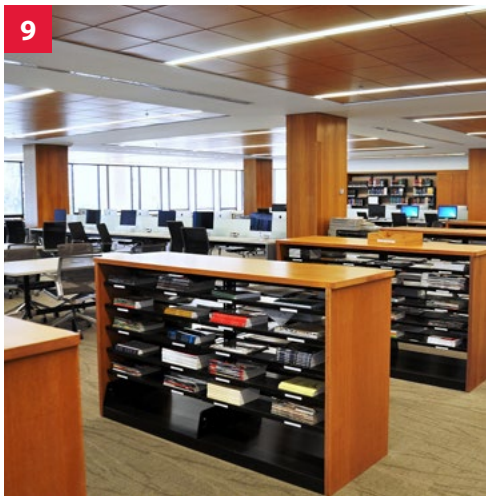


Photo © Chris Cooper


Photo © Jeff Goldberg/Esto

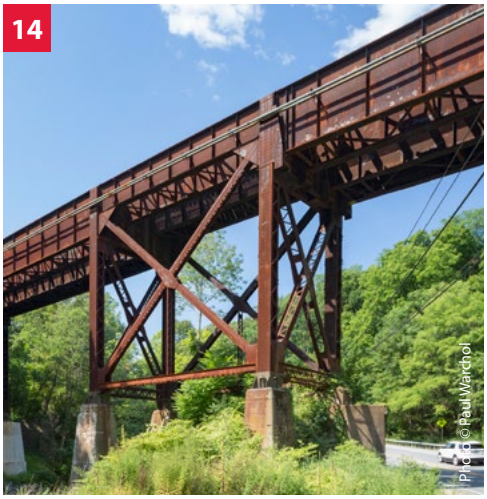
6 The STV/Satterfield & Pontikes (S&P) joint venture received an ACEC NY 2016 EEA Platinum Award in the Special Projects Category for the Delta Air Lines Terminal 4 Redevelopment Phase II at John F. Kennedy International Airport in Jamaica. STV/S&P provided construction management services for this transformative program, which added gates and improved access for customers at the terminal.

7 The Fort Mill Southern Bypass project team in York County, SC, received a Project of the Year Award from the American Society of Civil Engineers South Carolina Section Board. The bypass is a new, 4.3-mile-long, four-lane roadway in southeastern Fort Mill that improves connectivity and accessibility in eastern York County and around Fort Mill. STV performed a variety of services for the bypass, including project management, roadway and bridge design, development of environmental documentation, public involvement, biological assessments, natural resource investigations, and traffic analyses.

8 The New York Police Academy in Queens was honored by ENR New York as part of its 2015 Best Projects in the Public/Government Buildings Category and also received an ACEC NY 2016 EEA Silver Award in the Building/Technology Systems Category. The Turner Construction Company/STV joint venture provided construction management services for this massive new complex, which unites all of New York City's Police Department's training facilities onto one central campus. The New York City Department of Design and Construction was the client.

9 The newly renovated Shain Library at Connecticut College in New London, CT, was a recipient of an Award of Merit in the Renovation/Restoration category from ENR New England's 2015 Best Projects competition. STV/DPM performed owner's project management services for this initiative, which opened a few months ahead of schedule.

10 As part of the design-build team led by Whiting-Turner Contracting Company, STV provided architectural and engineering design services for the South Bay Bus



ENDURING.
DRIVEN.
VISIONARY.

1 **I-85/I-485 INTERCHANGE**
Charlotte, NC

2 **ANAHEIM REGIONAL TRANSPORTATION INTERMODAL CENTER**
Anaheim, CA

3 **MOTHER CLARA HALE BUS DEPOT**
New York, NY

4 **CLARK-LASALLE/DIVISION STATION REHABILITATION**
Chicago, IL

5 **RESILIENCY EFFORTS AT THE CONEY ISLAND YARD**
Brooklyn, NY

6 **DELTA AIR LINES TERMINAL 4 REDEVELOPMENT PHASE II AT JFK AIRPORT**
Jamaica, NY

7 **FORT MILL SOUTHERN BYPASS BETWEEN I-77 AND SC 160**
York County, SC

8 **NEW YORK POLICE ACADEMY**
Queens, NY

9 **SHAIN LIBRARY RENOVATION AT CONNECTICUT COLLEGE**
New London, CT

10 **SOUTH BAY BUS MAINTENANCE FACILITY EXPANSION**
Chula Vista, CA

11 **34TH STREET SELECT BUS SERVICE**
New York, NY

12 **U.S. COAST GUARD HOUSTON-GALVESTON SECTOR BUILDING**
Houston, TX

13 **THE MOSS ARTS CENTER AT VIRGINIA TECH UNIVERSITY**
Blacksburg, VA

14 **METRO-NORTH RAILROAD WOODBURY VIADUCT**
Orange County, NY

Maintenance Facility expansion in Chula Vista, CA, a recipient of the ACEC California 2016 Honor Award in the Building/Technology Systems category. This sustainable maintenance complex, which is owned by the San Diego Association of Governments, includes a highly efficient bus wash and other features not typically found in bus maintenance facilities.

11 The 34th Street Select Bus Service received an ACEC New York 2016 EEA Gold Award in the Transportation Category. On behalf of the New York City Department of Transportation, STV was the lead designer and provided construction support for this bus service improvement initiative in one of the busiest corridors in Manhattan.

12 The U.S. Coast Guard (USCG) Houston-Galveston Sector Building in Texas received a National Award of Merit from DBIA in the Civic/Assembly Category. STV was the architect-of-record as a subconsultant to Mortenson Construction on this design-build effort, which included a new, 111,500-square-foot USCG facility in Houston with offices and training spaces, commanding centers, medical and dental facilities, shops, a cafeteria and other support spaces. This facility replaced a previous USCG sector field office that was badly damaged by Hurricane Ike in 2008.

13 Virginia Tech's Moss Arts Center is the ninth building on Virginia Tech's Blacksburg campus to be LEED® certified, and its fourth LEED® Gold. BD+C presented it with a Bronze Award in its Building Team Awards program. STV teamed as executive architect with Snøhetta for this 150,000-square-foot project and provided project management; mechanical, electrical, plumbing and structural engineering; and sustainable design services.

14 STV performed inspections, designed repairs and conducted resident engineering services for the 108-year-old Metro-North Railroad Woodbury Viaduct in Orange County, NY – a recipient of the ACEC NY 2016 EEA Silver Award in the Structural Systems category.

STV GIVES BACK

A Look at STV and the Communities We Serve

From left to right: Bob Keeley, Jen Murphy, Mark Pelletier and Paul Tyrell.

STV/DPM LEADS FIGHT AGAINST MS

STV/DPM recently held its 22nd annual Golf Classic to benefit the National Multiple Sclerosis (MS) Society. The sellout tournament, which also included a dinner, took place at the Hopkinton Country Club in Hopkinton, MA, and raised more than $80,000, bringing the total of funds raised in the tournament's history to $895,000.

"We have led this event for 22 years and I am proud that our new STV/DPM family continues to support the MS Society and the great work they do," said Bob Keeley, STV/DPM senior vice president, and member of the Board of Trustees of the MS Society, Greater New England Chapter.

"Bob Keeley brings the same leadership skills and attention to detail to the MS Golf Classic that he uses to drive STV|DPM's success," said Lori Espino, National MS Society, Greater New England Chapter president. "The Society is so grateful for people like Bob, because it makes it possible for us to help people with MS live their best lives."

STRUCTURAL ENGINEER BRINGS HELP TO FLOOD-RAVAGED COLORADO

Flood mitigation and resiliency are hot topics throughout the design and construction industry, and Chris Cerino, P.E., SECB, vice president and director of structural engineering in the Buildings & Facilities Division in New York, has found a way to combine his knowledge of this subject area with his profound spirit of volunteerism.

For the past 15 years, Cerino and his church have made it an annual practice to seek out communities in need – especially those that have been impacted by natural disasters like floods and tornadoes. Cerino's most recent volunteer effort was in Estes Park, CO, where he helped support clean-up efforts in an area that is still reeling from a historic flood in 2013.

"In Estes Park, there are still a number of people out of homes and many roads are in poor shape," Cerino said. "Going to these communities that have been so badly damaged by natural disasters is personally very affecting."

ENGINEER EXHIBITS GIRL POWER AT ELEMENTARY SCHOOL

Katie Bordner, P.E., a civil engineer in our Harrisburg office, recently volunteered at a local elementary school so she could inspire a group of second graders to "be an engineer like a girl."

Bordner read to a group of eager students at Bellaire Elementary School in Carlisle,

Estes Park, CO, is still reeling from a historic flood in 2013.

Katie Bordner (right) with Bellaire Elementary School students.

From left to right: Kenneth Kelley, Jenifer Peters and Mike Clark.

PA, as part of the Women's Transportation Seminar (WTS) Central Pennsylvania Chapter's Girl Day 2016 festivities. Girl Day is geared towards encouraging diversity in STEM (science, technology, engineering and math) fields by educating children at a young age about careers in these areas.

In addition to reading to the students, Bordner also introduced them to engineering by having the second graders design and build towers out of marshmallows and spaghetti.

JACKSONVILLE TRIO SINK A HOLE-IN-ONE WITH ANNUAL GOLF TOURNEY SUPPORT

For a number of STV employees in the Jacksonville office, the American Society of Highway Engineers (ASHE) Northeast Florida Chapter's annual golf outing, which benefits engineering and construction students at the University of Northern Florida (UNF), has become a ritual – an event they all look forward to supporting year after year.

Kenneth Kelley, P.E., senior associate and director for highway bridges in Jacksonville, is the current president of ASHE's Northeast Florida Chapter, has been on the golf tournament committee since 2005, and has served as event chairman since 2010. And Kelley receives invaluable support from Mike Clark, design technician, and Jenifer Peters, administrative assistant, in the organization and operation of the event, which brings together more than 140 design and construction professionals every fall from throughout the Jacksonville area.

The outing is the chapter's signature event and supports ASHE's scholarship endowment fund at UNF. Thanks to ASHE's contributions, UNF provides two annual $1,000 scholarships for engineering and construction engineering students. With the endowment fund just surpassing the goal of $100,000, Kelley and the ASHE Board recently increased the annual scholarships to $2,500 each, while a third award representing construction management will also be added to the mix at a future date.

SUPPORTING WOMEN AND CHILDREN IN BANGLADESH

For Shamarukh (Sham) Billah, P.E., LEED® AP, BD+C, an associate and civil engineering manager in STV's Buildings & Facilities Division in Douglassville, involvement in the nonprofit Samhati is personal on a number of levels.

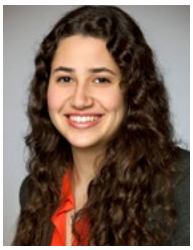
Founded in 1984, Samhati – which means "solidarity" in Bangla – works to empower Bangladeshi women and children by supporting small projects geared toward improving social and economic conditions in the country. Based in Washington, D.C., Samhati is the only organization of its kind in the United States.

Billah, who was born in Bangladesh, currently sits on Samhati's board of directors, and her aunt and cousin have played key roles in the group's growth and evolution over the past 30 years.

Since its inception, Samhati has produced a number of success stories for the poor and disadvantaged in Bangladesh. For many years, the organization supported local nonprofits within the country to build the first women's shelter in Bangladesh, and Samhati has continued to support the facility over the years by raising more than $160,000 for the center. More recently, Samhati has helped organize adult literacy classes and other educational opportunities that have helped transform entire communities.

Each year, Samhati holds an annual dinner and auction at the Embassy of Bangladesh in Washington, D.C. It functions as the organization's primary fundraiser. ■

STV'S YOUNG PROFESSIONALS HONORED



Dareen Salama

Malory Nguyen

Amanda Jones

STV's top young talent was recently recognized for their individual achievements by some of the design and construction industry's most prestigious publications.

Dareen Salama, assistant project controls manager/BIM manager, and Malory Nguyen, assistant project manager, both in our Construction Management Division in New York, were selected by Engineering News-Record New York magazine for its Top 20 Under 40 competition. Salama, was also named to Consulting-Specifying Engineer's 40 Under 40 list.

Salama, who joined STV in 2012, plays a major role in the application of virtual design and construction platforms, linking multiple aspects of project/construction management including cost, schedule and facility information using Building Information Management (BIM) technologies. She is currently assigned to the STV|Tishman joint venture team for the LaGuardia Airport Redevelopment Program, leading the team in the application of BIM, project management information systems and asset management applications. She is also an active member of the Construction Management Association of America (CMAA), and sits on the board of its national Emerging Technologies Committee, where she teaches educational sessions about emerging technologies. She was recently honored by the organization for her efforts with the "Distinguished Young Professional Award" at CMAA's national conference.

Nguyen joined STV in 2007. Since then, she has taken on increasingly larger projects and additional responsibilities. Currently, she is the assistant resident engineer/project manager for a critical and complex portion of the LaGuardia Airport Redevelopment project.

To increase awareness for the construction management profession, in 2009, Nguyen co-created the CMAA Student Chapter at her alma mater, Manhattan College. Already an active member of CMAA, she wanted to open doors for students and to teach them how to grow. She is also the chair for the CMAA's Construction Managers in Training National Committee and serves on CMAA's board of directors.

In the firm's Transportation & Infrastructure Division, Amanda Jones, P.E., associate, and director of railroad engineering in our Southeast region, was selected by Progressive Railroading magazine as one of its 20 "Rising Stars" in the North American railroad industry.

Jones performed design calculations and quality assurance/control reviews for bridge designs as part of STV's various general engineering consultant (GEC) task order contracts with CSX Transportation (CSXT) and other railroads. In 2015, she was promoted to railroad bridge group leader in Jacksonville, overseeing a team that supports freight clients on the East Coast. As a result of her leadership, last year, CSXT renewed STV's GEC services contract overseeing track and bridge design and construction, plan review, construction management and inspection/rating services on an on-call basis throughout the Southeastern U.S.

In addition to her project work, Jones supports the freight railroad industry through her involvement in the American Railway Engineering and Maintenance-of-Way Association's Committee 10 – Structures, Maintenance & Construction. This committee is responsible for the development and publication of recommended practices and information relating to railroad bridge inspection and maintenance.

NEW PERSONNEL

PHILIP CREMIN, P.E.

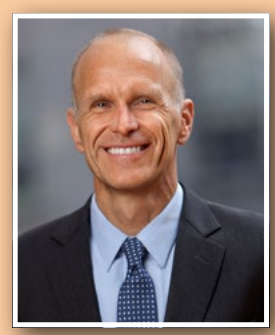
STV continues to make key hires that enhance the firm's overall leadership and vision across many industry areas.

Philip Cremin, P.E., has joined STV as vice president and chief civil engineer for the New York metropolitan area. In this role, Cremin is responsible for the management and oversight of the Transportation & Infrastructure Division's civil engineering practice in New York, providing leadership and technical guidance for his team. With more than 30 years of experience in civil engineering design, specializing in transportation infrastructure, Cremin has worked on the design and construction of a number of significant transportation hubs and systems around the New York City metropolitan area. These include Newark Liberty International Airport, LaGuardia Airport, JFK International Airport, the Holland and Lincoln tunnels, the George Washington Bridge, port facilities, and the Port Authority Trans-Hudson rail system. His experience also covers heavy and light rail, highways and bridges, airfield design and utility systems.

James Kramer, P.E., joined STV as a vice president and is a principal project manager in the Denver office for the Transportation & Infrastructure Division. He is overseeing and assisting in the planning and design of major highway and light rail transit projects, along with other transportation-related initiatives.

JAMES KRAMER, P.E.

DARKO HRELJANOVIC, AIA



JOHN KUPRENAS, D.ENG., P.E., CCM

TODD STORY

WILL FLORES

Kramer has nearly 35 years of experience in civil engineering, having played a leading role in the design and construction of a number of significant highway and transit projects throughout the Western United States. These include the complete reconstruction of Interstate 25 and the implementation of a new light rail project in Denver under a massive initiative dubbed T-REX; as well as the redevelopment and expansion of Denver International Airport's terminal and landside operations to incorporate commuter rail and roadway improvements.

Renowned architect **Darko Hreljanovic, AIA,** has joined STV's Buildings & Facilities Division in New York as a vice president and director of design. Hreljanovic brings his vision of clean, simple and streamlined modern architecture to STV's portfolio of government, institutional, academic and transportation projects. Throughout his nearly 40-year career, Hreljanovic has worked on a number of award-winning projects, including Terminal One at JFK International Airport, New York City Transit's Times Square Subway Complex, the West Midtown Ferry Terminal, and Cornell University's Human Ecology Building. Hreljanovic began his career with modern architectural pioneers Gordon Bunshaft, Michael McCarthy and Roy Allen at Skidmore, Owings & Merrill. He went on to specialize in transportation architecture at William Nicholas Bodouva + Associates and rounded out his experience working on residential and academic buildings with IBI Group - Gruzen Samton.

As a new senior vice president and deputy director of the Construction Management Division in New York, **John Kuprenas, D.Eng., P.E., CCM,** brings to the firm more than 25 years of international experience overseeing large-scale projects in both the public and private sectors. He provided program management services for $20 billion of new construction and modernization for more than 130 schools in the Los Angeles Unified School District; oversaw the construction of the $1.2 billion King Khalid Medical City in Dammam, Saudi Arabia; and managed a $6 billion airport capital improvement program for Los Angeles World Airports. Prior to joining STV, Kuprenas served as president of a Sacramento-based construction management firm which experienced unprecedented growth during his tenure. Kuprenas co-authored the book, "101 Things I Learned in Engineering School" as part of the "101 Things I Learned …" series, and has published several trade articles.

Todd Story, an engineer with more than 20 years of experience in technical management, project management, operations and business development, joined STV as vice president and operations manager in the firm's Energy Services Division. He will oversee the division's operations in Denver and Bismarck, ND, and will lead the expansion of the STV's presence in the Rocky Mountain region. With experience leading teams in extremely challenging environments, Story brings to the firm an outstanding record of overseeing the engineering, procurement and construction of multi-million dollar projects in support of the oil and gas industrial process industries. He is a member of the American Society of Civil Engineers and Engineers Without Borders.

An experienced project executive who has overseen the development of a number of transportation initiatives in New York, **Will Flores** has joined STV as a vice president in its Transportation & Infrastructure Division. Flores's multi-faceted project management background runs the gamut of infrastructure improvement projects, signals and systems design, and resiliency initiatives. He has an established track record in developing detailed design drawings, specifications and procurement packages for stations and facilities, tunnels, yards, systems, viaduct structures and bridges. Flores also has experience working with key public regulatory agencies, landmark commissions and community boards. He is a member of the American Council of Engineering Companies' New York Chapter and the New York Building Congress.

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