



Urbahn Architects, Citnalta-Forte, HAKS modernize subway stations

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145th Street station - Manhattan, NY

Street level entrance, 145th Street station - Manhattan, NY

New York, NY The Metropolitan Transportation Authority (MTA) and the design-build team of Urbahn Architects, Citnalta-Forte, and HAKS have completed renovations to three subway stations, one in Manhattan and two in the Bronx. The combined \$88 million modernization involved structural, infrastructure, safety, and passenger comfort enhancements to the Number 3 train/IRT Lenox Ave. Line's 145th St. station in Manhattan, and the Bronx's B and D trains/IND-Concourse Line's 167th St. station and the B and D trains/IND-Concourse Line's 174th -175th St. station.

Urbahn served as the lead architect for the first two stations, while engineering firm HAKS was the lead architect for the third station. The design team worked with contractor Citnalta-Forte.

The work improved the street presence of the stations' entrances, modernized the information systems throughout, updated the look of the interiors, and upgraded the lighting and mechanical, electrical, and plumbing (MEP) infrastructure. Much of the work focused on the stations' control areas and platforms, with the team making repairs to walls. The team also renovated items that had deteriorated structurally, repairing structural steel and concrete elements. They also performed waterproofing and made safety improvements. In addition, the team installed artists' glass-and-ceramic mosaics within the platform walls of each station.

Additional team members included CSA Group, Inc., as the mechanical and plumbing engineer; GG Engineering as electrical designer; Domingo Gonzalez Associates as the lighting consultant; and Billings Jackson Design as industrial designer of digital information systems, managed by Urbahn. HAKS also served as communications engineer and structural engineer.

The Manhattan station was completed in four months, while the Bronx stations took 18 weeks each.

NYC transit president Andy Byford said, "Structural fixes as well as modern touches like more real-time service info, energy-efficient lighting, and updated security systems mean safer, easier to use stations for our customers.

Urbahn principal, Natale Barranco, AIA, LEED AP, said, "To get the work done quickly, we issued design submissions on an accelerated schedule, made heavy use of work trains to move materials in and out of the stations, and had the workers on extraordinary schedules. All of this, coupled with the design-build procurement method, allowed MTA to reopen the stations in only a couple of months, despite each station having been in continuous use for about 100 years prior."

"In order to deliver a fast-track, \$88 million design-build project in only 11 months, all parties made great efforts to coordinate and plan the design and construction efforts, so that work could start timely in phases to meet strenuous schedule deadlines and still provide a high standard for quality," said Gary Yerganian, Citnalta Construction COO. "The collaborative relationship and understanding of the project's goals among all parties provided for quick and immediate turnaround on specific submittals and allowed for timely procurement of long lead items. This project showcases how beneficial cooperation between the ownership, designers, and the construction team is on such complex and challenging projects," he said.

The Manhattan station had been in continuous use since it opened in 1904, while the two Bronx stations had been in operation since they opened in 1933.

In addition to structural upgrades, turnstile areas were upgraded, and all three stations were equipped with supplementary security cameras, enhanced LED lighting, and an increased number of Help Points, which allow customers to communicate quickly with staff for assistance. The light

fixtures are not only energy efficient, the LEDs do not need to be replaced as often. Signage and lighting were both upgraded as well. In all three of the stations, the team reconfigured the fare-control areas using glass barriers, removing unsightly metal bars. As a result, sightlines have been exponentially improved.

Customer information screens that provide passengers with status updates and train arrival times were placed at the street entrances and mezzanines as well as on the platforms. In this way, people have information they need prior to paying and entering the turnstiles. Meanwhile, full-height digital screens were installed at the platforms, mezzanines, and control areas. These provide map and route information as well as public service announcements.

Modernizations included electronic charging stations with USB ports and improved station signage. The team installed new station furniture and platform safety enhancements such as tactile edge warning strips.

All staircases were replaced. New treads, stainless steel handrails with support bars, and guardrails with wire mesh were added. In addition, exterior handrails were equipped with LED linear lights embedded underneath.

“All three stations are now much more intuitive for riders, and they’re brighter and safer, as well,” said Urbahn’s associate principal, Ranabir Sengupta, AIA, LEED AP, who acted as visual quality manager on the projects.

145th St. Station

This Harlem station, at the intersection of 145th St. and Lenox Ave., is on the National Register of Historic Places. Therefore, the team had the additional challenge of working with MTA’s historic preservation group and New York’s State Historic Preservation Office (SHPO) to get approval for the work. For example, Larry Gutterman, AIA, LEED AP, Urbahn’s design manager on the project, said, “We used an older glass tile to match what was used in the station’s original construction. Getting that sourced, replicated, and delivered on time was a logistical challenge. We had similar issues to overcome with the selective mosaic repair we had to do, as well as the restoration of the terracotta cartouches that marked the station number.” Urbahn worked with Jablonski Building Conservation, Inc., the conservator and historic preservation expert on the project.

Reconstructing the street stairs at this location was more involved than at the other locations, due to the fact that the stairs at this station had been equipped with flood-mitigation devices. The team had to perform a selective removal of the sidewalk and, during the installation, carefully integrate waterproofing around the entrances.

Custom-designed information display fixtures, or “totems,” were installed at the street level to provide real-time service information before riders enter the station. The team also installed customer information systems on platforms. The totems were custom-fabricated by Boyce Technologies, Inc. of Long Island City, using a design developed by Grimshaw, Arup, and Billings

Jackson Design. Each totem features a digital screen with changing subway and neighborhood information, and a green acrylic dome at the top indicating the entrance's 24/7 operation. Solari Corp., an affiliate of Italy-based Solari di Udine, Spa., manufactured the customer information systems installed on platforms. They feature LED screens with upcoming train information, status announcements, and neighborhood maps.

New glass and ceramic mosaic artwork by artist Derek Fordjour appears throughout the 145th Street station. It pays homage to Harlem's African-American parade tradition and its pageantry. Miotto Mosaic Art Studios translated Fordjour's layered surfaces, based on his richly textured paintings – created with humble materials such as newspaper, oil pastels, and charcoal – into mosaics of lines of drum majors, majorettes, dancers, and drummers joyfully parading along the platforms, accompanied by crowds of people and flags.

From his historic research into the neighborhood, Fordjour touches on the legacy of Harlem parades, starting with the Harlem Hellfighters 369th Regiment in 1919 after WWI, through to the African American Day Parade founded during the Civil Rights movement of the 1960s and continuing today. Fordjour's artwork provides riders with a chance to encounter a celebration of community, history, and identity in the colorful art that complements the station's improvements and reinforces the historic fabric of the station.

167th St. Station

This station is located in the Highbridge and Concourse sections of the Bronx, at 167th St. and Grand Concourse. The station's two side platforms were overhauled and upgraded. One of the challenges involved coordinating all of the signage and the lighting, but the team managed to create a much-enhanced station that includes fixes to the electrical and communications systems.

Another challenge involved integrating the new artwork into the space, but this was accomplished with great skill. The artist, Brooklyn-based Rico Gatson, created "Beacons," a series of mosaics that depict prominent figures from history and culture who have been influential in the Bronx and beyond. The southbound platform features mosaics of Gil Scott-Heron, Audre Lorde, Celia Cruz, and James Baldwin. The northbound platform has been graced by Justice Sonia Sotomayor, Reggie Jackson, Tito Puente, and Maya Angelou.

174th-175th St. Station

This station, too, is located at the Grand Concourse and has three tracks and two side platforms. However, here the Grand Concourse is raised above the surrounding street grid, while the Cross-Bronx Expressway crosses in tunnels beneath the station, creating an unusual elevation in relation to the surrounding neighborhood and, as a result, a rather unorthodox station layout. At the south end of the station, riders must exit out to the street from underneath the station, via a lower mezzanine below the platforms. "We introduced a canopy here to create a more welcoming entrance at the lower level," said Urbahn's project architect, Ijeoma Iheanacho. She said that this canopy is used to "announce" the station entrance as well as provide much-improved, more visible

service information. Urbahn worked with Grimshaw to develop the final design of the canopy. It is made with two structural-steel columns that support a roof frame with a cantilevered glass panel over the entrance and clad in black-metal panels for drama.

Another challenge with this station was assessing and then selectively replacing the platform walls. They had been subjected to a great deal of structural deterioration and water infiltration, so repairs were extensive. Once this was remedied, the team found they had a great deal more replacement tile work than anticipated. “Much of the original tile and glazed bricks had to be replaced. Marrying the new tile with the existing tile – getting it to match and complement each other – took some painstaking work,” said Urbahn’s Ryan Bieber, assistant visual quality manager on the project. Similarly, the team had some selective replacement of the floors on the mezzanines, which meant they needed to tint the new concrete to match the existing color.

In addition, the team installed artist Roy Secord’s mosaics in this station. Called “Bronx Seasons Everchanging,” the murals consist of complex compositions that express seasonal periods using a wide array of colored tiles.

Urbahn Architects is a full-service planning and design firm based in New York City. Since its founding in 1945, Urbahn has designed projects for organizations and institutions that operate in the residential, healthcare, education, justice, science, transportation, and infrastructure sectors. The firm served as the architect for some of the nation’s most iconic structures, including the Vehicle Assembly Building and Launch Control at Kennedy Space Center in Cape Canaveral, FL, and the Fermi National Accelerator Lab in Batavia, IL. Urbahn’s annual domestic and international project workload exceeds \$500 million in construction value. Five principals lead the firm: Donald Henry, Jr., AIA, LEED AP; Natale Barranco, AIA, LEED AP; Martin Stein, AIA; Rafael Stein, AIA; and Ranabir Sengupta, AIA, LEED AP.

The firm’s transportation project portfolio includes the New York City Transit subway station flood mitigation resiliency program; renovations to multiple MTA subway stations in New York City; numerous projects for the Long Island Rail Road and New Jersey Transit; Newark City Subway Improvements in Newark, NJ; and rehabilitation of six train stations on the IRT White Plains Road line in the Bronx, NY. Urbahn’s other educational, commercial, and institutional work includes the \$70 million Tides North residential development in Arverne, NY; New York City Hall Mayoral Offices and Emergency Situation Center and Public Health Lab Redevelopment Master Plans in New York, NY; Centro Medico Correccional in Bayamon, PR; and Jersey City Municipal Services Complex, Jersey City, NJ; the SUNY New Paltz Engineering Innovation Hub in New Paltz, NY; Lehman College School of Nursing in the Bronx, NY; Usha Martin University Master Plan in Ranchi, India; Columbia University Baker Field Facilities Master Plan in New York, NY; P.S. 253Q Elementary School in Queens, NY; and P.S. 144Q addition in Forest Hills, NY.

Established in 1974 and headquartered in Bohemia, Citnalta Construction Corp. is one of the leading general contracting and design build firms in the New York Metropolitan region. Employing the construction industry’s best practices, Citnalta works with clients and design teams to build high quality, environmentally sound, and safe projects. The firm is currently operating throughout the

Greater New York area and directly employs over 300 professionals and tradesmen. Citnalta's primary market presence is in the transportation, educational, and mid-rise residential sectors. Over the past decade, it has completed numerous projects for the MTA, including rehabilitation of more than 20 subway stations, and more than a dozen public schools for the New York City School Construction Authority.

Forte Construction Corp., established in 2010, is a general contractor performing public works in the New York Metropolitan area. It serves various governmental agencies, including the New York City Transit, Long Island Rail Rd., NYC School Construction Authority, NYC Housing Authority, and Dormitory Authority of the State of New York. Headquartered in Holbrook, Forte works in all five boroughs of New York City, and Nassau and Suffolk Counties. Forte handles a wide range of projects, from mid-size interior rehabilitations to large-scale infrastructure construction. The organization is uniquely suited to manage and oversee large-scale union and prevailing wage projects, where the company has a track record of delivering quality projects on time and within budget.

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