

PEOPLE SAVING PLACES

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# preservation

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## CINCINNATI STYLE

Art Deco icon Union Terminal shines again

WOMEN IN HANDS-ON  
PRESERVATION CAREERS

MIDCENTURY MODERN  
IN HOUSTON, AFTER  
HURRICANE HARVEY







# BACK = ON = TRACK

It took a community-wide  
effort to finally return  
Cincinnati Union Terminal  
to its former glory

by Amy Sutherland  
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“It’s like a visual feast. There’s something everywhere you turn.”—Nancy A. Rankin

*Previous pages:* One of the two limestone bas-reliefs carved by Maxfield Keck on either side of Union Terminal’s main entry. *This page:* The building’s soaring rotunda measures 106 feet tall at its highest point.

**At the height of the Great Depression**, the top executives of seven railroad companies decided to build a grand train station together—one that could serve as a stylish hub for all of the railways that passed through Cincinnati. They hired the leading architects, designers, and artists in the country, splurged on high-end materials, and invested in cutting-edge technology.

By the time they were done, the building’s rotunda formed a mammoth half sphere. In front, a tiered fountain worthy of a Hollywood set jetted water. Inside, gigantic glass mosaic murals glimmered, and bands of sunny gold set the ceiling ablaze. No detail was overlooked in the project, which cost \$41 million in 1930s dollars. Even the bird’s-eye maple furniture for the

station president’s office was custom made.

Thanks to their audaciousness, the railroad executives got an audacious building—an Art Deco palace that embodied American optimism at one of the country’s lowest economic points. When Cincinnati Union Terminal opened in 1933, it did not resemble any other station or building in the world. For all these years it has remained a premier example of American Art Deco architecture. But over decades of use, its luster had dimmed.

In December of 2018, a comprehensive restoration of the 500,000-square-foot station, from the glass mosaic murals to the aluminum light fixtures, was completed. The scale of the project, which cost \$228 million and took a total of three years, was almost as ambitious as





the terminal's original construction. Nearly a century without a full-scale renovation had taken its toll on the building. Water had wormed its way deep into the structure, causing major damage. Cracks riddled the limestone-and-brick exterior. Original light fixtures were broken or missing.

"What was unusual was that there were so many of these problems in one project," says preservation architect John G. Waite, whose firm, John G. Waite Associates, worked on the terminal's restoration.

The client for the project was the Union Terminal Corporation (UTC), the entity responsible for the station's upkeep and maintenance. The project team chosen by UTC included John G. Waite Associates, GBBN Architects, and Turner Construction Company. They wrestled not only with the scale of the deterioration but also with the building's unusual architecture and vast number of custom design details. It all made for a project that was part engineering challenge and part treasure hunt for one-of-a-kind materials.

Cincinnati Museum Center, the station's largest tenant and a driving force behind the restoration, also took the opportunity to renovate its three museums in the building—the Cincinnati History Museum, the Museum of Natural History & Science, and the Duke Energy Children's Museum—though that work wasn't part of the

\$228 million restoration. (The renovations also created space for a fourth, independent museum, the Nancy & David Wolf Holocaust & Humanity Center.)

"This is one of the largest preservation projects carried out [in the country] recently, and one of the most complex," Waite says.

**Union Terminal's designers**, Alfred Fellheimer and Steward Wagner, were two of the leading railroad architects of the day. The Art Deco touches, however, were the work of French-born architect Paul Philippe Cret, who was brought in to enliven the staidness of Fellheimer and Wagner's original Gothic Revival design. Cret lent the station its futuristic look, with its giant half dome (the world's second-largest) and endless curving interior lines. He also wove art into the architecture, another hallmark of Art Deco design. Cret selected portraitist Winold Reiss to create the mosaics, artist Pierre Bourdelle to paint murals, and sculptor Maxfield Keck to carve heroic figures into the station's sandstone facade.

"It's like a visual feast," says Nancy A. Rankin, an architect with John G. Waite Associates who oversaw the restoration of the station's interior. "There's something everywhere you turn."

In its prime, Union Terminal was a small city unto itself, with a newsstand, toy shop, newsreel theater, bar-

Union Terminal is still used by Amtrak as a train station, and it also houses some of Cincinnati's top museums.

“To lose that building would be unthinkable.”—Jennifer Sandy



*From left:* Aluminum Art Deco lettering was polished; The entrance to Dinosaur Hall, part of the Museum of Natural History & Science, is located on the building's Concourse Level.

bershop, and charming tearoom lined with whimsical Rookwood tiles. Up to 17,000 people passed through the station per day. To avoid traffic buildups, cars, buses, and taxis entered one side of the building, dropped off their passengers, and then passed under the rotunda to exit from the other side of the terminal. The design worked so well that the station operated at nearly five times its capacity at certain points during World War II, as thousands of GIs crowded the concourse each day on their way to or from deployment. But after the war, those crowds plummeted and then vanished as Americans fell in love with their cars.

Union Terminal closed to passenger train service in 1972. Two years later, the concourse and 14 of the 15 platforms were torn down to make way for double-decker freight trains. The grand rotunda was saved—but for what, nobody knew.

In 1975 the city of Cincinnati bought the empty station, which would later be designated a National Historic Landmark, for \$1 million and offered it for rent for \$1. No one bit until 1980, when a short-lived shopping center opened in the rotunda. At last the Museum of Natural History & Science and the Cincinnati History Museum moved into Union Terminal in 1990, taking over the parking lots on the station's lower level. The two museums built the Robert D. Lindner Family Omnimax Theater, and the Duke Energy Children's Museum joined them in the building in 1998. The nonprofits, together with the Cincinnati History Library & Archives, consolidated into the Cincinnati Museum Center (CMC), now

one of the city's largest cultural institutions. Amtrak resumed service through the station in 1991, using it as a stop on its Cardinal train from New York to Chicago. Union Terminal had a much-needed new purpose, but years of neglect had taken a toll.

“You could see these dark marks, almost like cavities, zigzagging across the facade,” says Elizabeth Pierce, president and CEO of CMC. “Water was getting in everywhere.”

Pierce kept a bucket in her office to catch rain coming in around the window frame, as it did throughout Union Terminal. What really worried her, though, was the inside of the drum wall, the curved exterior wall beneath the rotunda dome. “You could put your hand up against it and feel the moisture coming through,” she says.

In 2006 the building was scanned and evaluated using thermal imaging technology. The places where water had corroded the steel superstructure showed up as hot spots on the report, and much of the station lit up. The scale of the restoration was far beyond what any of Union Terminal's tenants could afford or privately fundraise. CMC asked the Hamilton County Board of Commissioners to put a sales tax levy on the ballot to raise funds for the project. The county commissioners said no four years running. So CMC teamed up with Cincinnati's Music Hall, which also needed a major restoration, in late 2013 to ask for a levy on the ballot that would raise funds for both projects.

As the commissioners reconsidered the request in





2014, the National Trust for Historic Preservation announced its annual list of America's 11 Most Endangered Historic Places. Both Cincinnati structures made the list. They were also jointly named to the National Trust's National Treasures program as "Cincinnati's Icons." Finally, the commissioners agreed to put a five-year, 0.25 percent increase in the county sales tax on the ballot, but only for Union Terminal. Music Hall would have to find its own funding (which it ultimately did, through historic tax credits and private donations).

Cincinnati's may love the train station, but they do not love tax levies, says Pierce. So she began to campaign in earnest. The National Trust went to work, too. Focusing on grassroots efforts in coordination with CMC, it opened a downtown pop-up location called the Yes on 8 Action Center, which served as a base for nearly four weeks as Trust staff members rallied voters. They asked people to sign pledges to support the levy. They collaborated with partners such as the Cincinnati Preservation Collective and the Cincinnati Preservation Association on evening events like concerts and meetups, usually

featuring locally brewed beer. They organized lectures and panel discussions, and they took turns walking around downtown in a Union Terminal costume. Ultimately, the National Trust engaged with 14,000 of the county's voters.

"Given the large funding needs there, we believed it could be a model for projects across the nation," says Jennifer Sandy, associate field director for the National Trust. "To lose that building would be unthinkable."

In November of 2014, Hamilton County voters approved the levy with 61.4 percent in favor. By April of 2020, it will have raised an estimated \$175.7 million for the restoration. (The other \$50 million or so is coming from federal and state historic tax credits, as well as private fundraising.)

Now that the money was finally available, work could begin. The question was where to start on such an enormous project.

**Cranes began to surround** Union Terminal in July of 2016. Brick by brick, the drum wall came down. The

Artist Winold Reiss chose durable glass tiles as the medium for the original mosaic murals at Union Terminal. Bands of colored terrazzo underfoot echo the pattern of the ceiling's golden rings.

“When you walk into the building, the colors of the mosaics jump off the wall at you.”—Elizabeth Pierce

panes of all 1,200 windows in the huge arched facade were removed and replaced with plywood. The workings of the station’s signature clock were whisked away. The fountain and surrounding plaza were removed. Only the Children’s Museum remained open during most of the construction, but to get to it, visitors walked through a small temporary lobby that partially obstructed views of the magnificent rotunda.

“It was horribly upsetting [to the public]. People would ask what we were doing,” says architect Nick Cates of GBBN Architects. “Without the fountain and plaza, the place looked like a war zone.”

For the past three years, Cates has served as the lead project architect for the massive restoration. Like many

From their own observation, as well as the 2006 thermal imaging scan, the architects and engineers knew the exterior drum wall was peeling away from the steel superstructure. They could see the fountain’s concrete crumbling from decades of exposure to rain and snow, and the lead pan meant to keep water from draining to the floors below, where the Children’s Museum is housed, had begun to fail. Water had damaged major structural girders, which meant temporarily closing the Children’s Museum while new girders were installed.

To repair the building, the team essentially updated it using modern construction techniques. Multiple layers of waterproofing now protect the fountain’s concrete. The drum wall has been stabilized with a layer of concrete blocks tied to the steel frame with rebar, and then re-covered with more than 17,000 historic bricks, in addition to matching non-historic ones. “The good news is, that wall is never going to move again,” says Pierce.

The hodgepodge heating system, which had limped along for decades, was revamped with new boilers and miles of ductwork squeezed through the structure. A mammoth crane lifted six air-handling units onto the roof, and many more were added throughout the station.

As construction crews modernized the building, they also restored its original look. They covered the fountain with a terrazzo matched to the same green as the original. They pulled out miles of failing silicone caulking. They re-pointed many of the brick walls with a mortar that matched the original compound, which was made with local sand. Centennial Preservation Group cleaned the aluminum window frames with dry ice pellets and baking soda, and the glazing was reinstalled.

“There were things done here that don’t get done in construction anymore,” says Michael Burson, the owner’s representative for the restoration project. “Outdoor terrazzo, using putty around the glass. You won’t get to see that anywhere else.”

**While the cranes** and cement trucks went to work outside, art conservators brought back the interior’s gleam. Historic lighting fixtures were repaired or replaced. A mishmash of incandescent and fluorescent bulbs was replaced mostly with LED bulbs that would increase energy efficiency and lend a uniform tone. The red Verona marble walls were polished.

Conservators from EverGreene Architectural Arts began to clean the many artworks around the station that years of cigarette smoke and grime had darkened.



The railyard behind Union Terminal is now owned and operated by CSX Transportation.

people who grew up in Cincinnati, he has a few personal stories about the station, beginning with a high school trip there that helped inspire him to become an architect. After working on major projects in New York City for 15 years, including the redesign of Lincoln Center’s public spaces, he decided to move back home shortly after the levy passed. When he showed up for his interview at GBBN, he learned they had just won the Union Terminal commission a few days before.

The team started with a 3D laser scan of the entire structure, conducted by Truescan3D. The company set up two Leica P40 scanners at 2,500 locations around the property, collecting millions of data points. The results were translated into a Revit computer model and then a new set of drawings.





As they swabbed a mud-red blob on the ceiling of the Losantiville Dining Room (a former lunch counter now used as a daily dining space) they revealed a fanciful organic pattern in creams, yellows, and greens.

In the rotunda, EverGreene’s conservators climbed scaffolding to reach Reiss’ two panoramic mosaic murals, which cover 4,200 square feet. Across them parade riverboat captains, dockworkers, pioneers, and Native Americans, all rendered in brilliantly colored glass tiles. EverGreene found that, structurally, the mosaics had held up well. Team members cleaned them, filled cracks by injecting a stabilizing compound, and then cleaned the mosaics again. Missing tiles were replaced with close matches from Orsoni, a Venetian company.

Other items were much harder to track down; many of the experimental materials used in the station’s construction were only produced for a few years. For example, it took architect Nancy Rankin some time to find an artisan who could refinish Flexwood, a fragile, wood-vener wallpaper used in some of the station’s rooms. In the end, she used a local company, Riverside Architectural Millwork, for the finicky job.

The team found other artisans in their backyard, as well, such as Cincinnati’s Siemering Tile Co., which created terrazzo for the Losantiville Dining Room floor. Neonworks of Cincinnati remade the long red neon tubing for the arms of the iconic clock on the facade. The clock’s 800-pound workings were carefully removed, hauled by hand down four stories, and taken to The Verdin Company (also local) to be cleaned, balanced, and repaired. That done, the workings were carefully carried four stories up again and reassembled.

**The day before** the opening gala in November of 2018, a few technicians huddle around the clock, adjusting gears. Downstairs in the rotunda, the drone of tools echoes as workers in hard hats dart around, finishing punch lists. Despite appearances, the project is on schedule.

The exterior wall at the back of the station has been rebuilt, the grounds landscaped, and the restored murals returned to the dining room. The gold bands on the ceiling have been stripped of an acoustic material that darkened them, and repainted.

“People have been asking us forever when they can get back in here,” says Nick Cates amid the last-minute scramble. The temporary lobby has been dismantled, and the full rotunda is visible once again. “When you walk into the building, the colors of the mosaics jump off the wall at you,” says Elizabeth Pierce.

The following night, as guests in black tie and evening gowns push their way through the front doors, they do exactly what thousands have done before them. They stop in their tracks, as if ordered to, and look wide-eyed around the rotunda, trying to take in all its grandeur. Some gasp. Others point.

It seems an appropriate response to the restoration, which essentially makes Union Terminal look like a much brighter, polished version of the same grand Art Deco beauty it’s always been. The difference is that now, there’s no doubt about the station’s future: It will continue to wow people for generations to come. **P**

A restored green terrazzo surface surrounds the limestone fountain in front of Union Terminal. The building contains the largest half dome in the Western Hemisphere.

**AMY SUTHERLAND** is a frequent contributor to *Preservation*. She grew up in Cincinnati and visits the city regularly, often making a stop at Union Terminal.