

BY GREG READ

# TRANSFORMING HISTORIC BUILDINGS

From streetcar maintenance to police headquarters

One of the most formidable juggling acts in a building's rehabilitation involves combining the preservation of a historic structure with nearly any other goal. With the building shell inviolable, an energy upgrade and an expansion of space are tall orders, or at least expensive ones.

Yet both were achieved during the transformation of the former Monroe Shops building in South Dallas, Texas, into what is now the Dallas Area Rapid Transit (DART) police headquarters. Interior space was almost doubled, from 35,000 to 65,000 square feet, and its LEED Platinum status is a first among publicly owned buildings listed on the National Register of Historic Places.

How this transformation took place is one that also can be replicated in other historic buildings.

Constructed in 1914 as a streetcar maintenance facility for the Texas Interurban Railway, Monroe Shops closed in 1948, leading to decades of intermittent use by businesses as diverse as a paper mill and a U-Haul rental. Purchased by DART in 1991, the derelict building was partially repaired and used as a museum and health center, and the agency sought and attained historic status for the building in 2007.

Without a dedicated headquarters of its own and with a growing workforce, the DART police department saw the building as an opportunity to meet its needs while reclaiming its transit-oriented past.

## Working within Constraints

Whether related to budget, site, code, or other issues, every project forces architects to work within some level of constraints. An adaptive reuse of an older structure already forces the

designer into a box, with a historic structure adding one more aspect of the project that can't be touched.

In this case, the box is a good metaphor for the design solution that was used to solve the problem of preserving a leaky building shell, while meeting the department's sustainability goals for the project. The designers only minimally disturbed the building shell (primarily masonry repair on the interior, as well as the addition of structural support elements), while creating a building-within-a-building concept that includes a glassed-in interior set away from the building shell.

Around the upper two floors inserted into the former central bay (the train maintenance area), the resulting four-foot-wide maintenance access space can be heated using radiant units installed there, leaving the inhabited portion of the interior unheated.

To cool the interior, under-floor air was specified on the upper two floors. This is both more efficient, since the full volume of air needn't be treated, and also allowed the designers to take advantage of a lower floor-to-floor height to get three floors where there ordinarily would have been two.

The central bay's vertical clearance of 30 feet to the bottom of the roof trusses made the insertion of these two floors above the main floor tricky. The under-floor air helped make possible the eventual solution of pushing the third floor up until the trusses aligned with the floor's door frames, limiting the amount of space in the building that is less than standard height.

The combination of unconventional design and efficient mechanical systems mitigates the lack of insulation on the building's brick exterior, but also brings

the historic structure within view of employees and visitors, alleviating the disconnect between modernized interior and classic exterior that sometimes occurs in such projects.

Even more, the effect within is of an almost negative space—the building's feature is its historic shell of brick, steel trusses, and factory-style windows, rather than the modern facility constructed within it. The age and first purpose of the building are showcased beginning in the three-story entry lobby that is the one part of the former central bay kept as it once was, though cleaned up.

Historic materials salvaged during demolition were preserved and original signs and other features reincorporated, while a refurbished streetcar parked on rails is a reminder for anyone unfamiliar with the building's history.

## Ensuring Functionality

As befits a building constructed for the maintenance of train cars, Monroe Shops consists of one long narrow space, one narrow space half that length, and smaller appendages that served as maintenance shops and offices. Despite the narrow footprint, DART headquarters must, like all public safety facilities, remain functional for each specialist group and maintain certain adjacencies.

On the first floor, for example, members of the general public have access to the lobby and a community room, and the records department holds a central position so that it can be accessed by the public on one side and DART police staff on the other.

Beyond the public's reach, accessed by a dedicated staff entry, are such functions as the staff exercise room (in the former paint shop), men's and women's locker rooms, and the IT center. The back end of the first floor is set aside for DART's heavy work: evidence, quartermaster, and armory.

While those detained in criminal inquiries are brought to city lockup in each member city of the DART network, vehicles held for evidence are processed



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here, and a bay for processing vehicles sits next to an evidence drop, evidence storage, evidence processing, and all other ancillary spaces required.

Next door sees a similar grouping of armory and quartermaster receiving, armory, quartermaster storage, and so on.

The second-floor patrol and emergency preparedness zones and the third-floor criminal investigation and internal affairs zones can be accessed by a stairwell located inside

the secured staff entry, as well as a stairwell within the evidence zone and a stairwell and elevator located just off the public lobby.

Natural light floods interior spaces from exterior windows and skylights (located, in some cases, on the other side of the interior glass). In another of the inclusions that earned the facility LEED Platinum, daylight-responsive lighting controls were installed within 15 feet of exterior windows or skylights.

## Two Projects in One

When adaptive reuse is paired with historic preservation, it often helps to think of it as two separate projects. The part that is pure preservation—maintaining a building's original character—stays outside, while the adaptive reuse creates a fully modern and up-to-date space inside.

The building-within-a-building concept used in the DART adaptive reuse maintains the original character of Monroe Shops and, what's more, brings that character into view of the people who come to work in the space on a daily basis. **FM**



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