

A Pioneering Massachusetts School Is Reimagined as Affordable Housing



Founded in 1947, this complex housed the Northeast's first largescale school for children with intellectual and developmental disabilities.

Located about 30 minutes from Boston in wooded Hanover, Mass., the 175-acre Cardinal Cushing Centers' simple Georgian and Colonial Revival structures belie their innovative past. Founded in 1947 by Cardinal Richard Cushing, Archbishop of Boston, this complex housed the Northeast's first large-scale school for children with intellectual and developmental disabilities. Today, while much of the campus still operates as a specialized school, the Archdiocese of Boston has allocated certain portions for redevelopment, offering a broad range of non-denominational support services for the disabled and the Hanover community at large.

A recent \$8.5 million renovation and adaptive reuse led by Chelsea, Mass.-based The Architectural Team (TAT) Inc. with the creative stewardship of the Planning Office of Urban Affairs (POUA), a nonprofit housing developer affiliated with the Archdiocese of Boston, reimagines this National Historic District's former dormitory building as Bethany Apartments, a 37-unit affordable housing community for area residents.

The historic dormitory building was constructed in 1957 with a grant from U.S. Ambassador Joseph Kennedy, an enthusiastic patron of this pioneering school. Originally named for its eminent donor, the 3-story, red-brick structure once housed 200 students. As the Cardinal Cushing Centers campus evolved to include affordable senior housing and other supportive services, the 58,375-square-foot former Kennedy Building transitioned into administrative use and eventually fell into disrepair. Working through the Archdiocese

and leasing the structure to POUA, which is a mission-driven leader in social justice and affordable housing for families, offered Cardinal Cushing Centers an opportunity to give the building new life as much-needed affordable housing for the Hanover community. Just as important, locating Bethany Apartments on the campus grounds gives students a chance to interact with the development's residents, helping the Cardinal Cushing Centers organization further its mission of integrating children with disabilities into the surrounding community.

Site Work

POUA engaged TAT, a longstanding collaborator, to lead the building's renovation and retrofit into an affordable apartment community. At the project's outset, extensive site work proved to be one of the project team's most significant challenges. Located next to protected wetlands, the large H-shaped structure sits on a significant slope and much of the first floor is below grade. Keeping the existing foundations secure was a major concern, especially as the high water table created difficulties for below-slab trenching needed to install new sanitary and stormwater drainage piping. In fact, at its lowest point where plumbing exits the building, the sanitary trench encroached on the water table.

Working with geotechnical and structural engineers, TAT devised an underpinning for existing footings and foundations, as well as shored up the earth and foundations in particularly vulnerable areas. To solve the piping issue, the project team decided to trench below one of the building footings, run pipes through the space and then pour additional concrete below the trench to maintain structural integrity.

Stormwater drainage presented another challenge. The site's clay-heavy soil does not allow for much surface water percolation, and an existing bioretention area behind the building could not absorb the full amount of stormwater runoff. With help from the civil engineers, TAT designed and installed a new secondary drainage system in the bioretention treatment area that helps accommodate runoff and other surface water.

Accessible and Approachable

TAT embraced the vibrant colors of the community room's large stained-glass windows and reflected them in the space's finishes and furnishings.

Additional site work focused on improving accessibility and wayfinding throughout the property. Concrete walkways form new paths from the street and around the building, as

well as to a new parking lot in the rear, while pavers highlight building entrances. Other less prominent but equally important additions, such as new lamp poles and exterior building-mounted lighting, also aid safety and wayfinding to improve the resident experience and campus safety. Ornate, lantern-like fixtures at the expanded front entrance are designed to match those seen in historic photographs of the building, contributing to the sense of historic character.

When it came to repairing and retrofitting the building itself, a few significant projects were necessary. To create an additional handicap-accessible entrance, for example, the project team carefully demolished a new opening in the rear façade to make space for establishing an entirely new entry sequence. Combined with the new parking lot, the improved accessible access means the primary entrance is now at the building's rear. This led to an unexpected design benefit: Cardinal Cushing Centers had retained the right to use a portion of the building's first floor as a health center for its students, and the project work afforded a good opportunity to design a separate, adjacent entry for this facility that can be used once the allocated space—currently just shelled out—is retrofitted in the future.

Similarly, during their life safety review of building plans, the local fire department requested that the existing elevator be replaced with an elevator system to accommodate 84-inch-long ambulance stretchers. With this in mind, the entire structure needed to be demolished and replaced with a new masonry-lined shaft for the larger-capacity car. The new elevator system that could serve the larger car is a cost-effective low-rise system without a machine room, saving floor space and using an energy-efficient gearless traction motor requiring no hydraulics or oil.

Another crucial building systems upgrade came with the installation of a new mechanical plant. Updated elements include a cooling tower and an energy recovery ventilator (ERV) with each apartment unit using the hybrid heat pumps. The oversized dimensions of the original mechanical room eased the installation process, offering plenty of space for the large ERV unit.

Architectural Rejuvenation

Exterior building elements needed replacement, too. Work on the roof was more substantial than first anticipated with the original slate in poor condition because of decades of exposure to moisture infiltration and related water damage. Although a restoration ini-

tially seemed possible, a complete replacement was ultimately necessary, leading to critical decisions about material choice and color for the historic structure.

The building's classic, Colonial Revival style presents a distinctive profile where the roof has significant visual impact and a major role in the renovation's ultimate curb appeal. With this in mind, the TAT design team chose a blue-green slate that offers an attractive and historically sensitive contrast with the red brick construction. The new roof was installed in combination with copper gutters and downspouts, offering a new highlight for the complex. Behind the historic envelope, spray foam insulation was applied to the roof structure and dormers through the attic space. Spray foam was chosen because it creates a better seal for the building envelope and reduces moisture and air infiltration for structural longevity.

In addition to the roof, all the existing wood window frames had to be replaced. For cost and performance considerations, retrofit aluminum replicas of the original window profiles were considered as a possible, value-oriented solution. Yet, in this case, working with a custom fabricator, provided a highly cost-effective opportunity to use wood replacement windows. As a result, new double-hung wood window frames closely replicate the originals in look and feel. In concert with the building's repointed brickwork, the radiant white color of the new window frames offers a fresh, crisp aesthetic for the Bethany Apartments façades.

Inside, the project team found significant mold and moisture encroachment on first-floor spaces because of the site's high water table, and leaks from the roof had damaged much of the fourth floor. As a result, the most extensive repair work took place on these two floors; many spaces were stripped down to the exterior masonry walls and then entirely rebuilt. The second and third floors, infrequently used after the building's shift to administrative duty, were in need of significantly less repair.

Photos: JOEL HOWE



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Landmark Opportunities

Because POUA funded much of the renovation and conversion with historic tax credits, in addition to federal and private bank loans, state housing subsidies and local municipal funding, certain elements of the interiors work were bound to exacting National Park Service guidelines. Restoring the large interior chapel space, for example, required preserving the integrity of its large stained-glass windows, which were carefully de-lead, along with the dentil cornice and paneled wainscoting. Similar historic trim work was restored at the main lobby entrance and along each floor's primary corridor, where original wooden classroom doors were sanded and refinished in place to meet National Park Service requirements.

The largest programmatic challenge was in the adaptation of the original, 2,000-square-foot, double-height chapel space as a community room and lounge. Effectively programming such a large interior area for multiple uses demanded a thoughtful approach. The interiors team chose to employ furnishings as the main element for delineating space and breaking up the large community room into varied and enticing zones. A variety of different seating options, from inviting sectional sofas and individual lounge chairs to

shuffleboard-game surfaces and clusters of tables near the included community kitchen, create configurable niches for different forms of interaction and activity while maintaining the grandeur of the historic space.

Using furnishings as an organizing element also helped the design team solve a secondary challenge created by the community room's former life as a chapel: how best to make a space with built-in religious aspects work for a nondenominational community of diverse residents. By embracing the large stained-glass windows' vibrant colors and reflecting them in the finishes and furnishings, TAT transformed the windows into individual artworks and elements of the décor, rather than as religious objects. Bright pops of yellow, red, and orange form a cohesive and fun palette, offering the kind of lively atmosphere befitting a space meant for resident engagement.

Clustered on the first floor along with the community room, other amenity spaces, including a laundry room and fitness center, reflect an equally deft programmatic solution. Because of the topography of the site, the second floor is effectively the main floor. The design team was challenged to think of ways to integrate the five units located on the first floor so they would not seem remote or less connected to the rest of the building. Locating much of the amenity space at this level and providing access to views across the site, the design team preserved a sense of interaction for residents of first-floor units, allowing these apartments to feel fully connected to the broader Bethany Apartment community.

The rest of the former dormitory building's floor plan lent itself well to an apartment conversion, and the design team emphasized bringing natural light and design energy into the interior spaces. Bringing a more residential flavor to the long corridors, for example, a blend of crisp white and blue hues energizes the formerly drab walls, and carefully restored original 2-inch square tiles are painted into the color scheme so they blend into the space. Below residents' feet, carpet tiles with cross-banded colors also visually break up corridor lengths. Throughout the building, artwork by former students graces the walls, providing a connection to the past that respects the Cardinal Cushing Centers' innovative heritage and offering further visual interest.

The unit mix comprises eight one-bedroom apartments, 25 two-bedroom apartments and four three-bedroom apartments with a majority of units leased at affordable rates to serve households with incomes ranging from 50 to 60 percent of area median income. The four lowest-income units are rented with a preference for state Department of Men-

tal Health clients. Individual units range in size from an average of around 710 square feet for a one-bedroom home to 885 square feet for a two-bedroom space and up to nearly 1,100 square feet for a three-bedroom unit.

All 37 apartments feature a durable and attractive mix of materials, including vinyl plank flooring that resembles wood, Shaker-style cabinetry with wood blocking and planking, high-quality appliances, LED lighting throughout, and a full array of innovative bathroom accessories and fixtures. The building's numerous large windows ensure each home receives abundant natural illumination.

As the project team worked through final punch-list items in July 2018, the property was already two-thirds leased with 85 percent of those units occupied. Cardinal Cushing Centers' officials noted that Bethany Apartments received several hundred applications for its 37 homes, reinforcing the reality that more developments of its kind are needed in the Hanover area.

At the groundbreaking nearly nine months prior, Cardinal Seán P. O'Malley reflected on POUA's goals for Bethany Apartments. O'Malley remarked that Bethany Apartments, which is named for the biblical village signifying refuge, highlights a "commitment to develop true communities where people with a wide range of incomes and abilities can live together with dignity and respect." For TAT and the rest of the project team, meeting that objective represents adaptive reuse at its best.

Retrofit Team

ARCHITECT AND INTERIOR DESIGNER: [The Architectural Team Inc.](#), Chelsea, Mass.

CLIENT: [Planning Office for Urban Affairs \(POUA\)](#), Boston

GENERAL CONTRACTOR: [NEI General Contracting](#), Randolph, Mass.

CIVIL ENGINEER: [Horsley Witten Group](#), Boston

STRUCTURAL ENGINEER: [Odeh Engineers](#), Boston

MEP ENGINEER: [Wozny/Barbar & Associates Inc.](#), Hanover, Mass.

ROOFING CONTRACTOR: [Mahan Slate Roofing Co.](#), Springfield, Mass.

LANDSCAPE: CC Consult Group, North Andover, Mass., (617) 997-3646

Materials

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