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## Project of the Month: Windover Construction completes renovation and expansion of Cabot St. YMCA Housing, Beverly, MA

July 29, 2022 - Spotlights



Photo Credit Marshall Dackert

Beverly, MA Windover Construction completed the gut renovation and vertical expansion of the historic Cabot St. YMCA, to provide additional affordable housing to residents of the North Shore community. Windover partnered with the YMCA of the North Shore and SV Design for the project which transformed 45 single-room occupancies with shared kitchens into 67 studio apartments with individual kitchenettes and bathrooms. To create the additional housing units, Windover expanded vertically and added a fourth floor to the building. Virtual Design & Construction (VDC) technology was employed throughout the project to mitigate risk and inform decision making by providing detailed data in real time.

Photo Credit Marshall Dackert

Located in the center of downtown, the Cabot St. YMCA was built in 1901 and originally included a pool and fitness space, in addition to the housing units. The early phases of construction involved

removing the pool, as well as demolition and installing shear wall around the perimeter of the existing foundation system. For the first two months of construction, the building remained occupied by residential tenants.

The 44,400 s/f renovation and vertical expansion involved adding a new floor built of steel and concrete to the existing three-story building, as well as infill between the wings of the building for additional space at the second and third levels. Residents and staff can now enjoy a community room in the basement level where the pool once was, as well as bike storage and renovated office and meeting spaces.

## Cabot YMCA In Progress - Drone Flyover of Vertical Expansion

Photo Credit: Windover

Significant coordination was required to mitigate risk due to the historical nature of the building and complexity of the renovation and addition. Windover utilized its leading-edge VDC technology to document as-built conditions before construction and after demolition, and this data was then used to create QA/QC overlays that detected any issues combining new steel construction with what was to remain of the existing structure. This data of existing conditions, captured through laser scanning and drone mapping, was combined with 3D models of the new steel elements to create the overlays. Before walls and ceilings were closed in, Windover conducted inwall 3D scans to capture information-rich as-built MEP data to optimize future maintenance of the building.

Windover also laser scanned the exterior and interior of the basement level to create a detailed BIM of existing conditions to support the coordination and design process for the electrical vault. The vault was built with structural steel to support the sidewalk above, and CMU within the basement of the building to house three transformers from National Grid, which can only be accessed from the street via a manhole.

## QA/QC Overlay: Laser Scan of As-built Steel vs 3D Steel Design Model to Detect Conflicts Early and Resolve in Real-time.

This was Windover's fifth project with the YMCA of the North Shore, and second affordable housing project. Chris Lovasco, president and CEO of the YMCA of the North Shore said, "I can't think of anything more important than having a comfortable, welcoming, affordable place to live. It's something too often taken for granted. I'm so proud of our Y's commitment to meeting this need. Everyone involved worked diligently to see that we returned our residents, many of whom have lived

in this Cabot St. location for 15 to 20 years, to this amazing new housing space while also providing 22 additional units to serve even more residents who need affordable housing in Beverly. Projects like this cannot happen without the partnership of the Department of Housing and Community Development (DHCD). Their support enabled us to bring together an all-star team of local, state, and federal partners including Harborlight Community Partners, the city of Beverly, Northeast Arc, Beverly Bank, CEDAC, Eastern Bank, North Shore Home Consortium, FHLB, MassDevelopment and MHIC with a common goal to positively impact the residents and businesses in downtown Beverly for years to come.”

The project team included:

Windover Construction - Construction Manager

Taormina Electrical Inc. - Electrical

Dry Air Systems, Inc. - HVAC

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