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CELEBRATING 55 YEARS

Windover Construction recognized as a Global Leader in Construction Innovation by Autodesk

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Beverly, MA Windover Construction has won an Autodesk AEC Excellence Award, one of the most prestigious honors for innovation in architecture, engineering, and construction (AEC). This is the company's second time winning the international award for transforming construction with their use of leading-edge technology and it is precedent setting that the same company has won the award multiple years.

Windover won the "Accelerating Transformation" award from Autodesk for their groundbreaking use of technology on the Cabot St. YMCA affordable housing project in Beverly. For the complex 44,000 s/f renovation and vertical expansion of the hundred-year-old Cabot St. YMCA, Windover combined technology such as laser scanning, drone surveys, BIM, and 4D planning to mitigate risk and inform decision-making in real time. Through the project, the building was transformed to provide additional

units of affordable housing for the community by expanding from 45 single-room occupancies to 67 studio apartments.

The project was also the first to use a pioneering construction solution – the prefabrication of telescopic fit-out studs, produced through collaboration between teams across the globe and leveraging the cutting-edge capabilities at the Autodesk Technology Center in Boston, where Windover is an Outsight Network resident developing tech-first solutions to transform the future of construction.

“Windover is a team that invests in learning, resulting in more efficient projects that reduce waste and increase productivity,” said Joe Aronis, manager, Technology Center Workshop. “They are utilizing advanced technology like mobile robotics, augmented reality, additive and subtractive manufacturing, 3D scanning, and new digital workflows. Additionally, as part of the Outsight Network Windover has collaborated with several other teams who are passionate about research and accelerating innovation.”

As part of Autodesk Research, the Technology Centers bring together a global network of innovation leaders, data-enabled fabrication workshops, curated experiences, and forward-thinking ideas to empower innovators in achieving the new possible, together. The Outsight Network is the Technology Centers’ global innovation network.

It includes resident teams from industry, academic, and entrepreneurial sectors.

Windover collaborated with Autodesk, New Zealand-based cold-form steel machinery company Howick Ltd, and Canadian software company StrucSoft to utilize the adaptive industrial construction technique to fabricate telescopic panels for the Cabot Street YMCA from a digital model where they were then easily transported and adapted to fit the unique dimensions of the space.

Part of the project 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. Significant coordination was required to mitigate risk due to the historical nature of the building and the complexity of the work. Windover utilized their virtual design and construction (VDC) technologies 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 the existing structure to remain. This data of existing conditions, captured through laser scanning and drone lidar, 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.

“The Cabot Street YMCA project is a prime example of what can be achieved by using today’s state-of-the-art technology with tomorrow’s vision,” said Amr Raafat, Windover’s Vice President of VDC & Technology and the 2019 Autodesk Innovator of the Year. “Our team’s construction

expertise paired with advanced QA/QC BIM workflows has indeed transformed the way we build and is redefining the approach to historic preservation and renovation.”

In 2019, Windover won the Autodesk AEC Excellence Award for their groundbreaking combination of modular construction techniques with novel BIM, laser scanning, and drone technologies on CANVAS, a 153,000 square-foot mixed-use apartment community in Beverly, Massachusetts. The same year, Mr. Raafat was named the Innovator of the Year, an international recognition awarded to an individual leading, changing, and transforming the design and/or construction process in a positive way.

This year, Windover’s team accepted the award during the Autodesk Excellence Awards, part of the Autodesk University conference, in New Orleans, Louisiana on September 27, 2022.