



## Major Move

### ABB's new Highland Hills facility makes high-tech hands-on

By Carlo Wolff | Photos by Kyle Hulewat, Richard L. Bowen + Associates, Inc.

The entryway to the new ABB facility in Highland Hills is both prominent and inviting. Stabilized by a double-height entrance and flexible gathering space inside, it's all about transparency. Indeed, openness and collaboration are watchwords throughout the new, 135,430-square-foot facility, which serves as an engineering, R&D and customer care center for ABB, a Swedish-Swiss multinational corporation operating in robotics, power, heavy electrical equipment and automation technology.

In the making for four years, the single-story structure accommodates 425 employees who until the end of 2017 worked at ABB's 525,000-square-foot facility in Wickliffe. Another 25 who worked in Solon, where ABB manufactured low-voltage electrical products, also made the move.

The building was designed by Richard L. Bowen + Associates, of Cleveland, and

built by ARCO National Construction Company, of St. Louis, Missouri. ARCO was design-builder utilizing its designer GMA Architects, Inc., of St. Louis to produce the construction documents. The striking new building, which varies in height with the atrium 35 feet tall and rest of the L-shaped structure 18 feet, was developed and is owned by Weston Inc., of Warrensville Heights.

Executing the building is a testament to right-sizing, accommodating a business operation that employed some 1,600 at its peak in the 1970s, according to Andrew Kovach, ABB's vice president of U.S. Life Cycle Services.

#### Proximity + visibility

In late 2014, ABB engaged CBRE's project management team, led locally by Mike Schumaker, to assist with scope and budget development of the various project components. CBRE's Fred Herrera was the broker charged with finding suitable sites, eventually pinpointing a 16-acre former golf driving range in Highland Hills.

"We brought ABB officials to this site when it was still a driving range and explained that if we overcame many hurdles, 'a hole in one' could be achieved here," says Herrera, who notes the project was a catalyst for bringing Highland Hills together with Cleveland under an income tax-sharing JEDD agreement.

Photo courtesy of Suncrest Gardens

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**MODERN APPROACH** The building is a fitting addition to the Chagrin Highlands neighborhood with its high-tech, modern feel. The exterior is a sleek symphony in greys and blues, underscored by bright red ABB signage.

ABB wanted to stay on the east side of Cleveland, according to Kovach. “We had a lot of people historically who lived in Mentor and the Wickliffe area, but as our workforce became more dispersed in Cuyahoga, Lake and Geauga counties, this location was ideal: right off the interstate, plenty of restaurants and hotels in a very up-and-coming area,” Kovach explains, noting that the site’s proximity to Interstate 271 provides easy access to Lake County, the airport and Cleveland’s west side. “We looked at

modification of some existing buildings [in the area], but there wasn’t anything that fit.”

Erected in less than a year, the nearly \$24 million building runs 565 feet along Harvard Road and 384 feet along Green Road.

“The building is a ‘beta test’ facility for ABB, implementing their latest technology products, including a total building management system that is quite sophisticated,” says Schumaker, who notes that ABB has a 15-year lease

on the property. “They wanted this building to be highly efficient and serve as a model for other offices worldwide, while also attracting top local talent. It’s designed to be flexible for future expansion and development.”

This is ABB’s second-largest center in the U.S., Kovach adds. “It is definitely one of our biggest investments in the U.S.,” he says.

The facility houses 20 conference rooms, 45 huddle rooms, a customer experience center, a demonstration

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**STRONG ADDITION** The \$24 million building is the second-largest center in the U.S. for the Swedish-Swiss tech company.

room for company products, six research and development labs running ABB-designed and -developed equipment, four training centers for customers and ABB employees, a call center, an employee fitness center, traditional shipping and receiving, and staging areas. Behind the atrium is a multi-purpose flexible space that can accommodate company-wide

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**Mike Schumaker**  
CBRE

meetings. All are controlled by five server rooms and six independent networks. There is parking for 600 cars and future plans for an outdoor seating area. As a local touch, all huddle rooms are named after famous Cleveland-area landmarks and destinations.

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**AHEAD OF THE CURVE** Visual focal points of the building's interior include curved walls and soffits, towering ceiling heights and an interior finish palette of white, gray and red consistent with the ABB logo.

red ABB signs on the front and at the entrance. That palette, largely branded by ABB, extends to the interior. Bowen created a unique interior design, but also one that fits in with ABB's global identity.

"We wanted to do something that was more in line with some of the other tech-oriented buildings in Highland Hills," says Kyle Hulewat, director of design

for Bowen. The building is constructed of tilt-up concrete panels, which are typically seven-and-a-half to nine-and-a-quarter inches thick, the thickness increasing with the height. The bigger ones weigh between 100,000 to 125,000 pounds each.

"These form the structural frame of the building, and the exterior skin is a combination of aluminum glass curtain

wall, metal panels and metallic painted concrete," Hulewat says. "Cut-ins were made for all windows, with insulation and primarily white drywall interior finishes. It resulted in a very quick construction method."

Visual focal points of the building's interior include curved walls and soffits, as well as acoustical ceiling clouds – some almost 100 feet long and more than 35 feet in the air – constructed by Expert Construction, of Cleveland.

The roof system is steel frame, topped with a "typical metal deck with rigid insulation on steel joists and girders," and the top is white, 60-millimeter TPO membrane, says Hulewat.

The MBF-HVAC system includes packaged rooftop units – four larger ones to handle big, open areas, plus some smaller units to provide redundancy and dedicated service to specific areas.

### Overcoming challenges

"This has been a four-year-plus project for Bowen," says Hulewat, noting ABB approached Bowen in 2013 for a space identification program, test fit and building design. Bowen was design/criteria architect. Weston Inc. entered the picture in 2016. "At one point, we had to keep the building as efficient as we could," he says. "How do you

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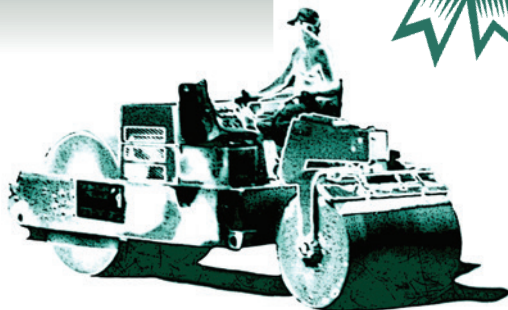
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**FORM + FUNCTION** Irregularly positioned light fixtures and acoustical ceiling clouds – some almost 100 feet long and more than 35 feet in the air – add visual interest while contributing to a comfortable working environment throughout the building.

get everything in there while making it as efficient as possible? Limiting size was our big mandate: how do we reorganize space for maximum efficiency?"

Hulewat was not the only participant in the project to cite challenges.

"To start and finish in a nine- or 10-month process was a challenge in a weather climate that can be pretty nasty

at times," says Michael King, senior project manager for ARCO. "There was a lot of time spent getting to a schematic design that ABB homed in on in negotiations with the landlord. From well before we got to that point, there was a desire for occupancy of this building on January 1, 2018. As that process continued to push, the construction period continued to

compress. When we got to that point, we looked at the construction schedule to try to come up with a plan to get it done in that time frame, and that was one of the challenges of the build."

Among the features that required heavy lifting, according to Kovach: lab areas with a raised-floor system and loaded with electrical cabinets.

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Photo by Ken Krzych

Photo by Ken Keych



**QUIET COMFORT** A white noise/sound masking system is utilized to reduce noise distractions and protect speech privacy.

ARCO spent time at Wickliffe trying to assess what lab users would want in their new facility. “To try to really define what they had and what they needed, it became quite a challenge to get that incorporated into the design documents within a tight time schedule,” says King.

Consultation with employees before the move from Wickliffe was essential, Kovach suggests, noting “we were used to this big building with all kinds of space” and that necessitated “a redesign of the whole.”

Besides the 425 employees it moved from the former Bailey Controls Co. in Wickliffe, where it had been since 1955, ABB also relocated 25 from Thomas & Betts, the 14,000-square-foot Solon facility where it manufactured connectors and other home electrical devices.

### A building with brains

The building is not only multi-functional. It’s also highly technological. In addition to a sophisticated AV communications system in conference and huddle rooms, “a white noise/sound masking system has done a really nice job of knocking down the echo and providing a level of background noise so when people are talking it’s not disruptive to those around,” says Todd Weber, IT business engagement manager with ABB North America.

There are plans to manufacture a solar canopy panel in the parking lot



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## Landing on the Green

By Dan Van Voorhis  
Suncrest Gardens

In 2015, Peninsula-based landscape contractor Suncrest Gardens was enlisted to transform an existing golf driving range into a suitable site for ABB's new Highland Hills facility. Previously, the 16-acre corner-intersection site was consistently sloped from west to east. This existing slope is still visible along the main thoroughfare to the north, but has been completely altered to suit ABB.

To build this project, a "cut-and-fill" method was used where the west of the property was excavated out, while the east of the property was raised up with the excavated soil. This effort was to accommodate the level building pad and surrounding parking areas. Where the building and parking meet the property edges, there are steep slopes back to existing grades as well as steep slopes to accommodate the large storm-water storage area for 650 parking spaces and access driveways.

Installation required three acres of the site to be outfitted with erosion-control matting, in order to stabilize steep perimeter slopes.

The landscape plan reflects ABB's desire to make the property look as attractive as possible while reflecting the high-class profile of the building and the business. The landscape is adorned with 350 trees, 420 shrubs and 600 grasses/perennials, which provide screening as well as foundation landscaping. Six acres of lawn provide groundcover in the level and sloped areas, while large landscape beds adorn driveway entrances.

Work will be completed this spring with placement of lush green grass atop the existing bare soil, providing the final touch of the initial landscape installation and ensuring that the property can serve ABB for many years to come.

Dan Van Voorhis is landscape design associate with Suncrest Gardens. For more info, visit [www.suncrestgardens.com](http://www.suncrestgardens.com)



Photo by Ken Krych

**REVEALING SPACE** To maximize the natural light and underscore an open atmosphere, ABB used as much glass as possible – even in huddle rooms.

that at peak could meet 45% to 50% of the building's power needs, and ABB hopes to open up its high-efficiency EV charging stations to the public, according to Kovach.

Bill Kern, the facilities manager, says ABB is creating a building management system that can zone in on a specific fixture like one of the LED lights, adjusting radiance strength to meet users' needs. That web-based system also will sense temperature and carbon monoxide levels, adjusting to human presence.

To maximize the natural light and underscore an open atmosphere, ABB used as much glass as possible – even in huddle rooms, Kern says. There are several kinds of huddle rooms, from relatively casual ones with more rounded furniture to more formal ones with straight-backed seating. Nearly all offer the same functionality, equipped with Skype-enabled and VOIP speaker phones with integrated cameras and large-format displays, or Microsoft Surface Hubs, which are essentially wall-mounted big brothers to the Microsoft Surface tablet.

Overhead lighting is angular and irregularly positioned by design. It is prominent, as are the cable trays that wind their way across the ceilings. There are six independent networks in the building, each with a different purpose and color code.

In addition, according to Weston Director of Development Kurt Updegraff, ABB-manufactured drivers that control

the light fixtures "tie into the building management system. They send messages back there, the system thinks about it for a while, then sends messages back – and controls everything."

An early plan called for 4,000-amp service, but the decision to go with all-LED lighting reduced the power demand, says Weber, "which created some space for future needs."

At the same time, he adds, "every area of the building is built out for its intended purpose, with some thought given to expansion of labs, which are the highest-in-demand rooms."

### A culture change

The new ABB facility is a school in itself. Not only does it represent an unusual style of management, but it also provides clues to the future of work.

"ABB's Workplace 2020 is an initiative to redefine our workspaces to deliver work environments that best suit the way we work and make best use of latest building and office technology," Kovach says. "Locally, we were able to design the workspaces best suited for our many businesses in the Highland Hills location. The office design allows people to come together or work independently as tasks require. Having no traditional offices in the building allows our teams to work together in a modern, healthy and safe workplace. We use the latest in technology and have created a digital environment that drives 24/7 collaboration with ABB colleagues and customers around the world." **P**