

CONSTRUCTION TODAY

Profile

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Any knowledgeable contractor knows that earning repeat business depends not only on building quality projects, but also on building relationships with its clients. This is something **Columbia Construction Co.** understands and has practiced for years.

Boston-based Columbia Construction Co. has an 80-year history of providing construction management and related services to academic, corporate, life sciences, healthcare and hospitality sectors. The firm has worked with high-profile clients such as Bristol-Myers Squibb, Harvard University and Siemens Healthcare Diagnostics.

So when Hobbs Brook Management put two new office buildings in its company-owned office park out to bid, it selected Columbia based on its work on four other corporate projects previously managed by Hobbs Brook, explains Sam Dettore, senior project manager for Columbia.

"We have an excellent rapport with the Hobbs Brook Management team; they have an excellent group of people there that we've worked with," Dettore notes. "We were one of four general contractors shortlisted to bid on the work based on the preliminary drawings. We provided consulting to the owner and architect and engineers throughout the preconstruction process."



The offices at 175 and 185 Wyman Street in the Hobbs Brook office park in Waltham, Mass., are aiming for LEED gold certification.

Columbia was awarded the contract for the two office buildings – 175 and 185 Wyman in Waltham, Mass. – in April 2007, and broke ground on the buildings the following year. 175 Wyman is the larger of the two buildings at 225,000 rentable square feet, and 185 Wyman is 110,000 square feet. Each building is two stories, although 175 contains two levels of below-grade parking and facilities, while 185 has one level of below-grade parking. The buildings' exterior will include metal panels, areas of full-height curtain walls, low-emission windows with sunscreens and a terra cotta rainscreen wall panel system. The office campus will include a full-service cafeteria, fitness center and both covered and open parking.

Working with Hobbs Brook Management, Columbia became involved with the project's development in the preconstruction phase. Columbia performed extensive site work, including reconfiguration of the site to turn parking lots into expansive green courtyards and the demolition of a 335,000-square-foot building.

Columbia consistently takes the guesswork out of many projects through its involvement during preconstruction. Its skilled staff can analyze details, challenge assumptions and provide the accurate data needed to make critical decisions, it says. It also utilizes the latest analytical tools, such as Revit and NavisWorks (BIM), InSite SiteWork and On-Screen Takeoff.

Despite having 26 acres to work with, Columbia still had to work around powerlines and other site restrictions during the construction process. To mitigate site congestion, Hobbs Brook allowed payment for offsite storage where the rooftop mechanical units and exterior materials and steel were kept.

Reaching the Goal

Building Information Modeling (BIM) had the greatest impact in maintaining the overall schedule and budget, Dettore says. Columbia commissioned Microdesk to provide comprehensive on-site training and help Columbia's staff embrace BIM tools. The goals were to enable Columbia to streamline its workflow by increasing collaboration with design teams and deliver more informative models to the owner, which, in turn, resulted in a decrease in change-orders and reduced costs for the client.

"From what we have seen, we were able to get on the floor with the program and see where the ductwork was and how the installation was going to work," Dettore says. "Even with the exterior where there are some tricky parapets and overhangs, we could see the conflicts with the steel framing in the steel shop drawings."

Utilizing Revit and NavisWorks, Columbia applied Microdesk's training software to develop its first full BIM project at 175 and 185 Wyman. Using BIM, Columbia provided a more detailed vision of the full scope the project; helped the subcontractors visualize details and design impacts; and allowed the construction team to drill down into the model to detect clash issues and achieve more accurate estimates early on in the process. Integration and model collaboration also dramatically decreased change-orders and schedule delays. As a result, the owner realized maximum efficiency in project delivery with minimal change-orders and, in turn, a significant cost savings.

"Working with the various subcontractors, we've had various items fabricated off-site which has made the installation more efficient," Dettore notes.

BIM has also enhanced safety on the job site – an impressive feat considering roughly 200 employees were on-site at the project's peak. With subcontractors understanding the exact role on the job and with the proper scheduling to deliver the materials, Columbia has been able to boast a clean safety record.

Dettore also credits Project Superintendent Greg Keuer for diligently managing the site safety program together with Columbia's safety director, earning it high ratings during an April OSHA inspection. In addition, he says, "We make sure that every single employee that enters the site understands everything from where to park to how they will be performing their job."

Gold Standard

Designed by Margulies Perruzzi Architects, both offices buildings are on track to earn LEED gold certification. Most notably, Columbia recycled 90 percent of the steel, concrete and masonry from the demolished building. "We probably saved the owner a quarter-of-a-million dollars in reusing this material for fill," Dettore notes.

The two new office buildings will utilize an existing 250,000-gallon underground water storage tank to capture stormwater runoff for reuse in irrigation. The facility will also integrate energy-efficient building controls and accommodate green lifestyle choices such as bike stalls and preferred parking for employees who carpool.

Although most of the points to hit the gold certification level were worked into the design, Columbia is responsible for adhering to the design and documenting the elements to earn LEED points. "We are implementing a lot of the requirements, but with LEED, you are only as good as the documentation you submit for points," Dettore notes. "We have a project manager checking to make sure the submittals are all meeting LEED requirements. It's very intricate. We have to have the right documentation in place. The best way to handle it is to have one of our people really involved in the submittal process.

"We've done six projects that are LEED-certified, but we were most prepared for this one," Dettore maintains. "We have Neil Lemieux in charge of preconstruction services and he is our No. 1 LEED AP on the project. He saw that [LEED] was growing and took advantage of making that work for us."

Right on Track

In late April, Columbia completed the roof on 175 Wyman and was on track to finish installing the roof on 185 by late May. The two-building project is on track to be completed in January 2010. Dettore says the next major milestone will be completing the interior core-and-shell of the buildings this summer.

"The fact that we need to have the buildings done next January really requires that we have the site work done by October," Dettore notes. "We are still working on that, obviously, but we have a good site contractor, and they have the manpower to man the job properly."