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Strategic partner during the preconstruction phase: Columbia helps meet sustainable goals

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Early collaboration between Columbia's preconstruction team, the owner, and the A/E team has resulted in many of our clients meeting, and in some cases exceeding, their green design and construction goals. Our involvement as a strategic partner facilitates sound decisions based on our experience as professional planners and cost estimators, as well as our extensive experience with the LEED process. Using three case studies, we will highlight several key instances of how Columbia's expertise in green buildings has helped our clients achieve their LEED goals.

Cell Signaling Technology

Columbia served as LEED project administrator and author of the LEED strategy for Cell Signaling Technology's global headquarters in Danvers, Mass., which received LEED certification from the USGBC. Working in concert with the architect D.F. Trees Assoc., our involvement during the initial planning stage helped facilitate the adaptive reuse of the former King's Grant Inn into a biomedical research facility. 75% of the existing building shell was preserved for reuse which reduced a substantial amount of carbon emissions associated with manufacturing and transporting new building materials.

While excavating for a new elevator pit, the crew hit significant groundwater. Columbia's superintendent suggested capturing the groundwater and pumping it into a new tank which was installed where the hotel's indoor pool was located. The team also decided to capture the Reverse Osmosis Reject Water in the tank. The result...the water in this tank accommodates the irrigation needs of the entire property. Avoiding the use of domestic water for landscape irrigation was an important consideration in the owner's mission to reduce the use of our natural resources.

Martha's Vineyard Hospital

Again serving as LEED project administrator and developing the LEED strategy, Columbia began working with the hospital and the architect, Thomas, Miller & Partners, LLC of Tennessee during preconstruction. Initiated largely by a grassroots effort by the island community, the team is targeting a LEED Silver rating for this 25-bed, 90,000 s/f replacement hospital.

A key feature of this project is the installation of 200 photovoltaic solar panels on roof surfaces of the new hospital with an unobstructed southwestern exposure. Columbia and Solar Design Associates provided the technical expertise to make this a reality for our client by pursuing and receiving a grant from the Mass. Technology Collaborative (MTC). The total cost of the solar project is approximately \$375,000; 53% will be covered by a design and construction grant from the MTC in the amount of \$198,000.

Many of the LEED points we are pursuing are in line with the hospital's mission to ensure indoor air quality for their patients and staff. In the category of indoor environmental quality, we are targeting twelve LEED points, in some cases at little or no cost. For example, indoor air quality management;

thermal comfort; outdoor air delivery monitoring; and low-emitting materials for paints/coatings, adhesives/sealants and carpet systems.

175-185 Wyman St.

Working with Hobbs Brook Management and Margulies Peruzzi Architects since preconstruction, Columbia has been integral in supporting the team's pursuit of a LEED Silver rating for this new 335,000 s/f corporate campus in Waltham, Mass. The use of Revit (BIM) to communicate the architect's intent and design has been an incredibly useful tool for the team. During the preconstruction phase of any project, quantities and take-offs are key to successfully estimating a project. In this case, the Revit model provided instant access to quantities, which saved a significant amount of time in the quantity take-off phase and estimating process. This resulted in more time for planning and for collaborating with the team on sustainable strategies.

One of the key features of this LEED project is the demolition and recycling of the debris of an existing 335,000 s/f building. Columbia was instrumental in working with the team to calculate and manage what material would be available for reuse from the demolition process in addition to how we were going to phase the recycling efforts on the site. We imported the Site design information into InSite SiteWork, a 3-D technology. This exercise allowed us to review and assess several site design options for optimal reuse of the crushed masonry and concrete material as fill in select areas of this site. All steel components of the demolished buildings were hauled off-site for scrap metal reuse.

Conclusion

When Columbia is a strategic partner in the early stages of a project, we have been very effective in leading and contributing to the LEED certification efforts on behalf of our clients. Our expertise as planners, in addition to our experience with the LEED process, Revit (BIM), and unique building and engineering technologies, adds a discipline which is crucial to the success of any project.

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