

## Lost & Found

by Michael Burns

Monica Moreira LEED AP

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*Building-recycling project saves time, money and peace of mind.*

What would you do with 65,000 tons of old concrete, masonry block, steel and glass? You might find ways to reuse some of it; still many would load it into a dump truck and haul it off to another state that would accept the construction debris.

What if, however, you found a way to reuse nearly all of the material on-site without having to involve trucks, fuel, noise, other states and their regulations, and the time to orchestrate the transfer? You might save nearly \$500,000, make up time on your schedule, and rest easy at the end of the day knowing that you helped to minimize the carbon footprint of your project. The best part of all is that it wasn't very difficult to achieve. This is exactly what happened this past summer in Waltham, Mass.

Through careful coordination between Hobbs Brook Management, the developer/owner, and Margulies Perruzzi Architects, a 330,000-square-foot Class A office-space project consisting of two buildings in Waltham is being considered for LEED Gold certification and innovation credits. The original building, a former computer-manufacturing facility, was constructed almost entirely of concrete and masonry block — providing an ideal project in which to recycle so much material.



Very large stockpiles of the 2-inch crushed concrete, courtesy of Columbia Construction Company.



Granite curbing to be reused and asphalt to be crushed and reused, courtesy of Columbia Construction Company.

Although the challenges of crushing such a large amount of material on-site involved dust control, stringent safety precautions and strict DEP approval, the benefits far outweighed any evident restrictions. Of the 65,000 tons of material, which comprised the actual weight of the demolished building, 61,000 tons of concrete and masonry block was crushed on-site and used as structural fill. Another 2,000 tons of steel was sent off-site, recycled, and the equivalent re-purchased for reuse in the new buildings. And 2,000 tons of glass and other fine debris was crushed and transported off-site to serve as a fine-particulate cap to a landfill. The result of recycling these 63,000 tons of material on-site resulted in the prevention of 2,100 trips by truck to disposal facilities and a cost savings of nearly \$500,000. In addition to the elimination of fuel pollution, carbon emissions, noise pollution, waste management and the obvious public safety savings of not having 2,100 trucks on area highways, the project savings was recognized in budget and scheduling surpluses.

Due to favorable site conditions and logistics on this site outside Boston, staging areas on-site were utilized to crush and pile the recycled material — something highly unlikely to occur in a dense urban setting. The designers took grading opportunities into consideration when putting together the building program to utilize as much material on-site as efficiently as possible.

In an effort to achieve LEED Gold certification, the project was able to reuse more than 75 percent of the existing materials and capture both points in the Materials & Resources category under Credit 4.1 Construction Waste Management of LEED requirements. Typical construction projects are estimated to recycle, on average, approximately 60 percent of the material. Therefore, recycling 75 percent is considered to be unusual and challenging. This two-building, sustainable-minded project has recycled 97 percent of the existing materials. Due to achieving such a high percentage versus the established requirement, the buildings are also being considered for a third innovation credit under Credit 4.2.



Existing concrete building being demolished with large excavators, courtesy of Columbia Construction Company.

With a little design ingenuity, green compliance, and favorable site conditions, seemingly useless construction debris can get another chance at utility.

### **Sidebar: 175/185 Wyman Street**

Location: Waltham, Mass.

Owner: Hobbs Brook Management

Developer: Hobbs Brook Management

Architect: Margulies Perruzzi Architects

Contractor: Columbia Construction Company

Completion Date: Estimated for June 2009

Green Building Materials: Roofing System, Recycled Products and Regional Products

#### *Michael Burns*

*Michael Burns is an assistant manager for Real Estate Construction and Leasing with Hobbs Brook Management, a Class A office-space owner and developer in Waltham, Mass. Hobbs Brook Management was founded in 1957 and has operated with green sensibilities for several decades. The firm intends to pursue LEED EB O&M credits for many of its existing buildings.*

#### *Monica Moreira LEED AP*

*Monica Moreira, LEED AP, is an associate at Margulies Perruzzi Architects (formerly Margulies & Associates), one of Boston's most innovative architectural and interior design firms. With 14 years of experience as a project architect, project manager and detail designer, Monica is currently the project manager for the LEED-Gold office building campus project now under development for Hobbs Brook Management.*