

The Macallen Building South Boston, Massachusetts



Constructed Value
\$73 Million

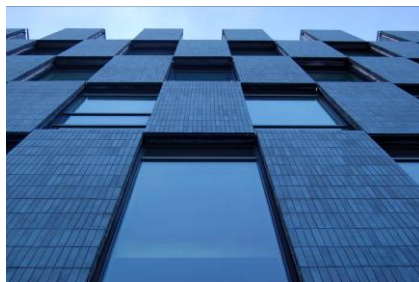
Building Size
354,000 sf

Completion
2007

Assignment
Construction Management, GMP

Client
Pappas Properties, Inc.

Architect
Office dA Associates
Burt Hill Kosar Rittelmann Associates



"The social, economic and ecological advantages of green development are significant. At Macallen we've merged environmental sensitivity and resource efficiency with great design and understated elegance." – Tim Pappas, Pappas Properties, Inc.

Bovis Lend Lease was selected to provide Construction Management services on The Macallen Building, a 14-story, 354,000 SF, high end condominium building. The 139-unit building provides tenants with a private, half-acre terrace with pool and barbeques, gym, screening room, dog run, and 3-levels of below grade parking.

The building has a staggered truss structural framing system with a specialized metal deck and concrete topping. Staggered truss structural framing was invented about 50 years ago by Bill LeMessurier, a Cambridge engineer. This system does not necessitate structural columns; there are none in the building. This facilitates high ceilings in units providing an abundance of

light. The building's eastern side slopes steeply with a green roof, which includes 17 south balconies. The building has an additional 11 hung balconies on the north side and 6 private terraces on the 5th floor. All tenants have access to a large green roof, pool and terrace, all on top of the garage, which encourages community living and socialization. The first floor terrace sits on a cast-in-place three-level parking garage which sits partially below grade.

Built on the site of the former W.J.C. Macallen Company factory, the Macallen Building is a distinctive yet natural addition to the historic South Boston neighborhood. Its modern steel and glass north façade reflects downtown Boston's office towers, while the southern brick façade bows to the City's more historic architecture.

LEED

Upon completion, the Macallen Building is expected to earn the unique distinction of being Boston's first LEED residential property. The project is targeting a LEED Gold rating. Bovis was involved early in the job, and instrumental in helping Pappas Properties achieve their sustainable design goals for the building, without exceeding the project budget.

The project will achieve this prestigious LEED rating as a result of the following green building elements:

Water Conservation and Reuse

- The building is anticipated to save about 600,000 gallons of water annually by not installing a permanent irrigation system and the use of dual flush toilets.
- The dual flush toilets will reduce use of potable water for toilet flushing by about 60%.

High Performance Design

- An energy model indicates the building will use 30% less electricity than a conventional building.
- The building achieves significant energy savings by having a central HVAC plant, rather than individual packaged units in each apartment.
- The plant's cooling tower make-up water is treated without chemicals, but ultrasonically, through the new award-winning Dolphin System.
- The HVAC plant includes heat recovery, which captures heat from the building's exhaust air in the winter to preheat supply air.
- Heat is also recovered from the HVAC condensate loop to preheat the building's domestic water.
- The parking garage is naturally ventilated.
- All of the HVAC systems are "ozone friendly".
- The 20 degree pitched roof is planted with vegetation to slow the flow of storm water. The vegetation also

reduces the amount of heat the roof reflects (compared to a black roof), without the glare of a white roof.

- The project has specially designed exterior light fixtures to focus light where it is needed, and minimize light pollution.

Resource Conservation

- The building uses a rich palette of natural and recycled materials, including cotton insulation, bamboo flooring, cork (applied to walls and ceilings as an aesthetic treatment), linoleum, grass cloth wall covering and wheat board core cabinet and doors.
- Scraps of blue jeans, donated by Patagonia and from other sources, were used as insulation.
- The quartz countertops and carpeting have recycled content. The carpet padding is actually made from recycled tires.
- The Tectum acoustical ceiling tiles are made of shavings from fast growing Aspen trees.
- 75% of the wood used in the building is certified as sustainably harvested by the Forest Stewardship Council.
- To date, 90% of the construction and demolition waste generated by the project has been recycled. Drywall scraps were segregated from other waste and returned to USG, the manufacturer, for specialized recycling.

Indoor Environmental Quality

- Outside air ventilation is ducted to each residential unit for optimal indoor air quality.
- The entire building, including private residences, is non-smoking. The prohibition is included in the condo agreements. Smoking was also prohibited on site during the building's construction, which was a real challenge for many!
- Low-VOC adhesives, sealants, paints and coatings were used throughout. Bovis had to police subcontractors closely, to prevent them from using whatever they had on hand from their last project!

Sensitivity to the Community During Construction

- During construction, the site enclosed with a silt fence to keep construction dust confined to the site. Further, storm sewers were covered with filter fabric and surrounded with hay bales.
- Trucks' wheels were washed before they left the site.
- Work began after 8am, rather than the more conventional 7am, so as not to disrupt the neighborhood.
- The project team gave several tours to local university students studying architecture. The students were particularly interested in learning about LEED and how to incorporate sustainable elements into the design and construction of a building. The team also led tours for other BLL staff pursuing LEED Accreditation!

Challenges and Lessons Learned

- Atop twenty-degree sloped Green Roof, Bovis Lend Lease faced the challenge of ensuring the dirt and grass didn't slide off the building. A new product called Gardnet, a perforated mesh net, was used to stabilize the dirt and keeps it in place.
- As mentioned under *Indoor environmental quality*, Bovis had to police the tradesmen closely, to confirm they used only the approved no- and low-VOC products. In one case, the Owner directed Bovis to knock down whole areas of the building in which high VOC products had been used.
- Meeting the project's green performance specifications sometimes meant using new products. Bovis found some of these products, particularly adhesives, did not perform as they claimed. Also, the lack of familiarity with Cumaru, a new FSC-certified wood roof decking, meant installing portions of it twice. Several areas of the initial installation cupped, because it expanded more than anticipated. More room was left between boards in the second installation.