Macallen Building
Condominiums
Boston, Massachusetts
Overview

- Location: Boston, MA
- Building type(s): Multi-unit residential, Retail
- 350,000 sq. feet
- Project scope: a single building
- Completed April 2007
- Rating: U.S. Green Building Council LEED-NC, v.2/v.2.1—Level: Gold (41 Points)
- First Gold L.E.E.D. Certified Building in the U.S.
This 140-unit condominium building in South Boston, was designed to incorporate green design while at the same time increasing revenue.
This market-savvy approach proved that a developer project could reap the benefits of sustainable design, as environmentally friendly urbanites were more attracted to this building than to nearby developments.
Who was behind this project?

- **Architect of record & MEP Engineer**
  - Burt Hill
- **Design Architect:**
  - Monica Ponce de Leon
- **Owner/Developer:**
  - Pappas Properties, Inc., Boston, Massachusetts, USA
- **Contractor:**
  - Bovis Lend Lease, New York, USA
Total project cost (land excluded): $70,000,000

The financing came through loans from private banks that recognized the potential sales premium of green condominiums.
Describe the elements of the topic with emphasis on technologies, magnitudes, costs.

- The building is well insulated and features several energy-saving technologies, including heat-recovery ventilation and water-source heat pumps.

- Each unit has fresh air ducted independently.

- Each residence is warmed by a heat pump that taps the Trigen Energy Corporation steam lines that run underneath the street.
GREEN (1/2)

- Walls contain all-cotton insulation, and interiors are bedecked with wood certified by the Forest Stewardship Council, along with wheatboard-core cabinets and low-volatile organic-compound finishes.

- A covered garage was incorporated in contribution to the urban heat-island effect and storm water runoff.
GREEN (2/2)

- Prominent natural light, and heavily insulated energy-efficient windows and walls.

- A 20,000-ft² outdoor terrace provides similar benefits as the green roof.

- Rainwater and air-conditioner condensate are collected and stored for use.
Renewable resources were used such as bamboo, cork wallpaper, grasscloth wallpaper, wood-fiber ceiling tile, linoleum flooring, wheatboard, and cotton insulation.

Of all the wood used in the project, 75% is certified to Forest Stewardship Council standards.

Several materials used have recycled content; these include concrete, steel, aluminum siding, rigid insulation, carpet, floor underlayment, and bicycle racks.

The cladding on the south side of the building, shown here, is made from recycled aluminum.
This project has a sloped green roof that controls storm water drainage, filters pollutants and carbon dioxide out of the air, reduces heating and cooling loads, reduces the project’s contribution to the urban heat–island effect, and provides an ecosystem for wildlife.

The extensive green roof on the top of the building, shown in this photo, lowers heating and cooling loads in addition to managing storm water.
The planting system on the upper roof holds, absorbs, and slowly evaporates storm water. Any remaining water is directed to holding tanks that store the water to be used for drip irrigation on the lower green roof.

The drought-resistant native sedum plantings on the upper roof require no irrigation.
Prior to construction, the site contained a parking lot of black asphalt.

This was then replaced and soon enough, an industrial area was transformed into a gateway to the neighborhood, complete with green space and street-level shops.
What are its social and economic benefits?

- The Macallen green building features include innovative technologies that will save over 600,000 gallons of water annually while consuming 30% less electricity than a conventional building.

- The total amount of rain harvested in July averages a little over 72,000 gallons, while the required irrigation averages 30,000 gallons.
Land Use & Site Ecology

By using native plants, the design promotes natural wildlife habitat for regional birds and insects. The site is becoming a welcome, thriving oasis in a residential and industrial neighborhood.
Policy Challenges

The site presented challenges in the following areas,

- air and noise pollution,
- the urban heat island effect,
- and creating local green space.
Social Problems (1/2)

The community representatives shared some of their concerns, which included:

- Preserving the historical nature of the building exterior, including the roof
- Preserving the window lines, where windows are present
- Avoiding new windows or glass on the back (East) wall and roof by the abutters’ gardens. The issue of building code, property lines and windows was also raised.
- Addressing the framing and structural challenges of the project and also in the context of the financial viability of the project
- Fear that the building might be torn down if the project viability became questionable after purchase
Social Problems (2/2)

- Understanding the details of some of the plans for the foundation and footings and the plans to mitigate construction impact on adjacent properties
- Understanding more about the number of units, total square footage and pricing
- Having sufficient parking places to accommodate all condo owners, or providing for alternative site parking
- Location of access to the building’s parking spaces
- Impact of the construction process on street parking
- Avoiding additional traffic flow or trash pickup impact on the alleyway
- Questions about the impact of the project on the water table
AWARDS

Awarded LEED innovation point for the use of a system that treats cooling tower blowdown water without the use of chemicals for use in irrigation.

Awarded the prestigious AIA Housing Award for Multifamily Housing and was named one of the Top Ten Green Projects in 2008 by AIA/COTE.
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