



President and Fellows of Harvard College
Harvard Management Company, Inc.
600 Atlantic Avenue, Boston, MA

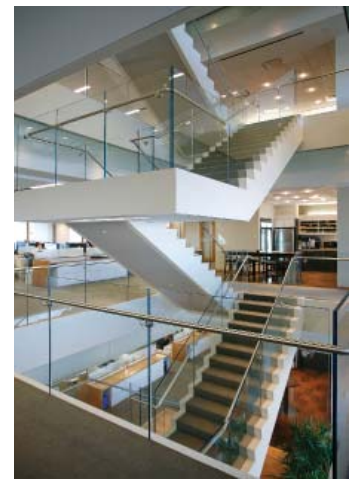
LEED CI 2009
GOLD

Formed in 1974, Harvard Management Company, Inc. (HMC) manages Harvard University’s endowment and related financial assets. HMC’s singular mission is to produce long-term investment results to support the educational and research goals of the University. Returns from the endowment support academic programs, provide financial aid, and fund science and medical research.

Project History

The offices of HMC previously occupied the 13th, 15th and 16th floors at the Federal Reserve Bank of Boston (FRB). The building is located at 600 Atlantic Avenue in Boston, MA. The project consisted of approximately 51,700 SF of interior renovation on floors 13, 14, 15 and 16. The multi-phased project started with the construction of a new data center on floor 13. Floors 13 and 14 were finished and occupied during the first phase of construction. The 25th floor served as swing space during the renovation. The existing trade desks on the 16th floor remained in full operation throughout the entire construction period.

The goal of the project was to develop and implement new office standards to support HMC’s dynamic and collaborative organizational model. The space layout effectively and efficiently enabled integration of support functions with investment personnel, achieved optimal flexibility and ensured that the physical working environment promotes an open, collaborative organizational culture. Harvard University’s commitment to the challenges of climate change and environmental stewardship are well documented. HMC’s commitment to achieving LEED certification supports the University wide effort to address this issue and was carried out with a significant focus on sustainability.




four-story communicating stair

The program consisted of private and open offices. Support spaces included conference and quiet rooms, cafes, copy rooms, a new and relocated reception area, a new, state of the art data center, a learning center and a new and relocated boardroom. The scope of work also included new HVAC systems, restrooms, lighting and lighting controls, an open four-story communicating stair and new finishes.

PROJECT HIGHLIGHTS

LEED® Facts
 Harvard Management Company
 2010 Interior Renovation



Location Boston, MA
 Rating System LEED 2009 for Commercial Interiors
 Months Completed 6 months

GOLD 62*

Sustainable Sites	19/21
Water Efficiency	6/11
Energy and Atmosphere	13/37
Materials and Resources	8/14
Indoor Environmental Quality	8/17
Innovation in Design	6/6
Regional Priority	2/4

*Out of a possible 110 points

“Green, or sustainable, building is the practice of creating and using healthier and more resource-efficient models of construction, renovation, operation, maintenance and demolition.”

www.epa.gov/greenbuilding/

34% water reduction
137,000 gallons of potable water saved annually

21.8% electricity reduction
efficient lighting fixtures & smart controls

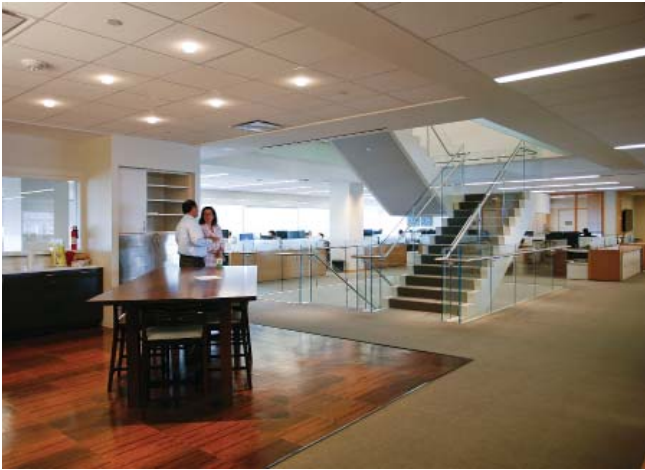
90% views to the outside
for regularly occupied spaces

349 tons of construction waste diverted
from landfills

5,348 square yards of climate neutral carpet



PROJECT TEAM



Applicant Project Team

Owner	President and Fellows of Harvard College
Project Manager	Harvard Management Company, Inc.
Architect	Bargmann Hendrie + Archetype, Inc. (BH+A)
MEP/FP Engineers	R.G. Vanderweil Engineers LLP
Lighting Design	Sladen Feinstein Integrated Lighting, Inc.
Structural Engineer	Weidlinger Associates, Inc.
Commissioning Agent	Harvard University Campus Services, Green Building Services
General Contractor	Skanska USA Building

LEED PROCESS PREPARATION



Process for Preparing the LEED Certification Application

From the beginning of the project BH+A worked closely with HMC to set goals and to incorporate as many sustainable design principles as possible. These goals were communicated early on to the engineering team and to the construction manager. During the design phase, regular meetings with the owner and design team were held to coordinate efforts and check the applicability of each LEED credit. It was helpful that each firm on the project team had a dedicated staff member working on the project who was also a LEED accredited professional. The commissioning agent was brought in early to provide Enhanced Commissioning services. He offered many excellent comments through the design and documentation phase and effectively helped ensure that all energy-related systems were installed as designed.

During construction, every submittal was required to be accompanied by a Materials Documentation Submittal cover sheet. This helped to streamline the product data review and documentation process.



Project Registration Date 2/23/10
Project Certification Date 9/6/12

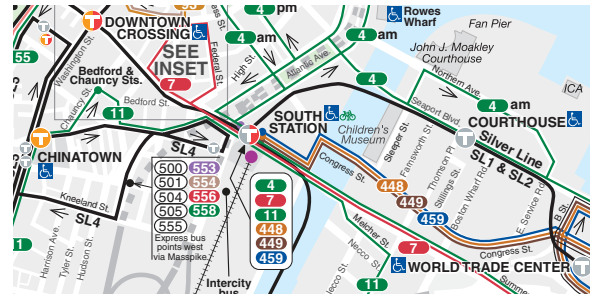




SUSTAINABLE SITE

The Federal Reserve Bank building was certified under LEED for Existing Building: Operations & Maintenance and has many green practices in place such as indoor air quality management, reduced mercury lamp purchasing, green cleaning as well as a tenant education program. The location afforded excellent **public transportation access**. South Station is next to the building and is a major transportation hub for the local subway and bus systems as well as for commuter and Amtrak rail services and regional bus services. The commuter boat service is located at Rowes Wharf which is also within walking distance to the building.

The building is at Dewey Square with **pedestrian access to many basic services** in downtown Boston, Chinatown and the waterfront district.



WATER EFFICIENCY

Through the use of high-efficiency plumbing fixtures, we projected a 34% water reduction over FIXTURES standard EPA 1992 fixtures. This is equivalent to a savings of about 137,000 gallons of potable water every year.

FIXTURES

TOTO Sensor Faucet
Self Generating
EcoPower System



GROHE Ladylux Pro
30% Water Savings
IAPMO Green Certified

Fixture Type

Installed Fixture Flush & Flow Rate

EPA 1992 Standard Flush & Flow Rate

Toilet	1.28 gpf	1.6 gpf
Urinal	0.125 gpf	1.0 gpf
Lavatory facet (metering)	0.17 gpm	0.25 gpm
Shower head	1.5 gpm	2.5 gpm
Kitchen faucet	1.5 gpm	2.2 gpm

gpf gallons per flush
gpm gallons per minute



ENERGY & ATMOSPHERE

The project achieved a **21.8% reduction in connected lighting power density** below that allowed by ASHRAE Standard 90.1-2007. This was achieved through careful attention to the lighting design and specifying efficient light fixtures with LED or high output fluorescent lamps. Automatic controls help to turn off lights when natural light is available or when there is no one in the room. Daylight sensors were installed within 15 feet of perimeter windows and provide full dimming capability. The lighting control system integrates time-based, occupancy-based, daylight-based and manual controls and can be controlled locally and/or remotely.

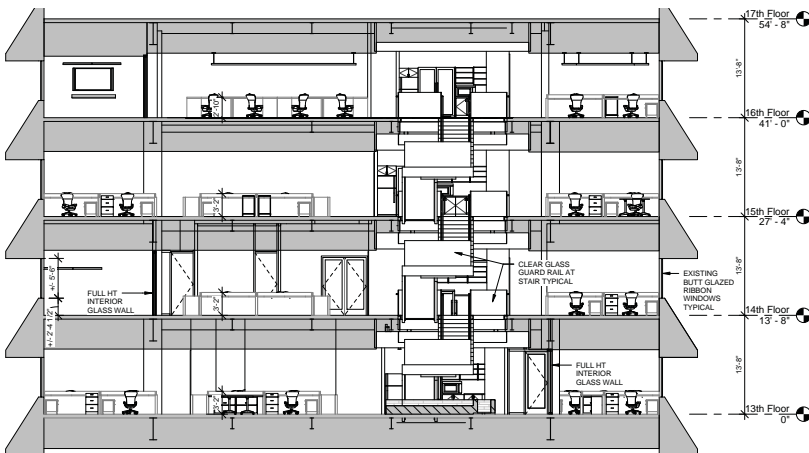
Energy Star® equipment including appliances, computers, monitors and televisions provided a 70% reduction in electricity use compared to non-Energy Star® equipment.



TRUE FOOD SERVICE EQUIPMENT: Swing Door Refrigerator
Entire cabinet structure is foamed in-place using Ecomate. A high density, polyurethane insulation that has zero ozone depletion potential (ODP) and zero global warming potential (GWP).



ENERGY STAR EQUIPMENT: computers, monitors & televisions



Building Section: IEQ Credit B.2, Views for Seated Spaces



Low partitions at workstations maximize views on both sides of the building.



MATERIALS & RESOURCES

- Diverted 349 tons of construction waste from landfill
- Salvaged and reused in new locations:
 - 66 wood doors, frames and hardware
 - 1,620 SF of veneered wood paneling
 - 1,710 SF of stone wall paneling
- Reused 72% of existing furniture (by materials cost)
- 5,349 square yards of “climate neutral” carpet was installed. As a result, 107 tons of certified carbon dioxide credits offset the greenhouse gas (GHG) emissions associated with the carpet’s life cycle, including extraction and processing of raw materials, manufacturing, transportation, use, maintenance and end-of-life. The certified carbon offsets came from a regionally diverse portfolio of emission reduction projects that include a wind energy project in a tsunami damaged area of India, a small hydropower project in Brazil and biomass fuel source project in India.
<http://www.bentleyprincestreet.com/Sustainability/CoolCarpet.aspx>
- The recycling storage at each kitchenette/café location was clad with Bio-Luminum™ tiles which are made from 100% post-consumer recycled aluminum from reclaimed aircraft parts.
<http://www.coveringsetc.com/>
- The oak floor in the reception area and at the base of the communicating stair looked antique because they are milled from beams that were reclaimed from a 100-year-old barn in Wasuau, Wisconsin. This salvaged wood was certified “FSC Recycled”.
<http://www.elmwoodreclaimedtimber.com/>
- In the restrooms and café the counter tops were made of IceStone™, which is certified to Cradle to Cradle® Gold level. IceStone is regionally manufactured in Brooklyn, NY (228 miles from Boston) and contained 63% pre-consumer and 7% post-consumer recycled content glass and cement. <http://icestoneusa.com/>
- Floor and wall tiles used in the restrooms have 40% pre-consumer recycled content.
<http://www.refin-ceramic-tiles.com/series/stone-leader/>
- Linoleum flooring has 45% pre consumer recycled content and 33% (by weight) rapidly renewable content. <http://www.forboflooringna.com/Commercial-Flooring/Products/Marmoleum/>



72% existing furniture was reused



FSC recycled oak floor in reception



5,439 sq yds climate neutral carpet



tile: 100% recycled airplane fuselage



INDOOR ENVIRONMENT QUALITY



To meet the goal to improve indoor air quality in the renovated space, every product was scrutinized for their volatile organic compounds (VOCs) content.

- Lowest emitting carpet, adhesives and seam sealer available on the market. Product: Bentley Prince Street Urban Scene and Kings Road
- Cork floor in the cafe contained no urea formaldehyde. Product: USF Cork Decor
- Kitchen cabinets used no urea formaldehyde composite wood and laminate adhesives. Product: Vesta Particleboard
- Zero VOC Paint. Product: Benjamin Moore ECO SPEC®

The design also allowed 90% of the regularly occupied spaces to have views to the outside.



ADDITIONAL RESOURCES

Harvard Management Company, Inc.: <http://www.hmc.harvard.edu/>

Sustainability at Harvard: <http://www.green.harvard.edu/>

U.S. Green Building Council: <http://www.usgbc.org/>

EPA Energy Star: <http://www.energystar.gov>

EPA WaterSense: <http://www.epa.gov/watersense/>

Introduction to Indoor Air Quality (IAQ): <http://www.epa/iaq/voc.html>

MBTA, Greater Boston's Public Transportation System: <http://www.mbta.com>

Cradle to Cradle Certification®: <http://www.mbdc.com/c2c>

Forest Stewardship Council: <http://www.fsc.org>

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Federal Reserve Bank of Boston exterior photograph, [boston-fed.jpg](#), Accessed 123011, <<http://www.financialregulationforum.com/wpmember/wp-content/uploads/2011/04/boston-fed.jpg>>