HARVARD Campus Services

GREEN is the new Crimson

Peabody Terrace Graduate Commons
900 Memorial Drive, Bldg E
Project Profile

LEED for Commercial Interiors v 2009
LEED Platinum
2012

The Peabody Terrace dormitory complex, designed in 1963 by Sert, Jackson & Gourley, is a composition of low-rise and high-rise towers that form a series of shared open spaces across from the Charles River. In addition to a separate, ongoing envelope repair, abatement, and waterproofing program to preserve the exterior façade, the Peabody Terrace Graduate Commons project in "Building E" included renovating the common areas and new residential Director's Suite within the existing floor plan.

Photo: Copyright David Kurtis, 2012

Building Owner, Harvard University Housing, tasked the project team with designing the spaces to update HVAC systems, maximize daylighting, reduce utility dependency, and incorporate sustainable materials, while maintaining the integrity of the original exterior design and the character of the interior aesthetic.

Throughout each phase, the project team embraced the challenges of renovating a significant architectural landmark. For example, because of the low ceiling heights and the lack of typical floor and ceiling cavities, the integration of new HVAC systems and ductwork while adhering to current building code proved difficult. Furthermore, the design team took particular care in preserving and re-using acoustical wood paneling that is prevalent in the lobby and Common Room area, recognizing this system as a significant design feature to the building's history.

LEED® Facts

Harvard University
Peabody Graduate Commons

Location	Cambridge, MA
Rating System	LEED-CI v2009
Certification Achieved	Platinum
Total Points Submitted	86/110
Sustainable Sites	17/21
Water Efficiency	8/11
Energy and Atmosphere	30/37
Materials and Resources	8/14
Indoor Environmental Quality	13/17
Innovation and Design	6/6
Regional Priority	4/4

Project Metrics

56% reduction in **lighting power density** (watts/square foot) compared to the baseline standard (ASHRAE 90.1-2007)

36% reduction in **water use** compared to the EPAct 1992 baseline.

27% **regional manufactured** materials value as a percentage of total materials cost

19% **recycled** content value as a percentage of total materials cost

13% **reused** materials value as a percentage of total materials cost

ENERGY EFFICIENCY

Harvard University Housing (HUH) has committed, along with Harvard University as a whole, to reduce greenhouse gas emissions 30% below 2006 levels by 2016, inclusive of growth. Therefore, the following energy conservation measures (ECMs) were implemented as part of the Peabody Terrace Commons project.

HEATING/COOLING SYSTEMS

ECM 1: **Variable Air Volume Control (VAV)** - VAV terminals control the amount of air delivered to each room. The ability for VAV terminals to adjust fan speed reduces the energy consumed by the fans. In addition, VAV systems provide a greater level of dehumidification than a conventional constant volume system, which enhances building occupants' overall thermal comfort.

ECM 2: **Air-Side Economizing** - Air economizing offers free cooling and, in turn, reduces cooling load energy usage when outside air temperatures are ideal. This is achieved by mixing exhaust air with outside air so that the outside air temperature and humidity fall within the desired range.

ECM 3: **Occupancy Sensors** - Occupancy sensors control the operation of the variable air volume terminal units for the first floor Commons room and the surrounding rooms.

ECM 4: **Operable Windows** - Operable windows provide residents with natural ventilation and control over the thermal conditions of their space. In some cases, this alleviates the need to cool spaces and, in turn, reduces energy usage associated with cooling loads.

ECM 5: **Thermostats** - Thermostats provide a high level of thermal comfort system control by building occupants.

Photo: Copyright David Kurtis 2012

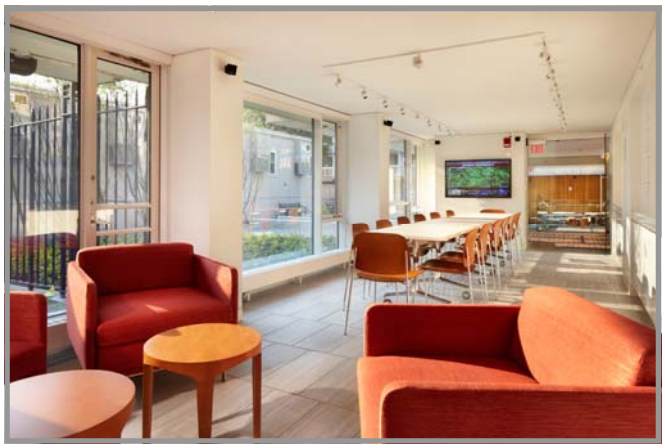

Photo: Copyright David Kurtis, 2012

ELECTRICAL SYSTEMS

ECM 1: **Occupancy Sensors -** Occupancy sensors are installed in all spaces to turn the lights on, or off, based on actual occupancy. A combination of wall-mounted infrared occupancy sensors and dual technology ceiling sensors were installed throughout. These occupancy sensors combine the benefits of passive infrared (PIR) and ultrasonic technologies to detect occupancy. In total, occupancy sensors control 76% of the lighting load.

ECM 2: **Daylight Sensors -** Daylight sensors adjust artificial lighting levels based on the amount of daylight entering the space. This is ideal over a conventional lighting system that has the inability to dim lighting fixtures.

ECM 3: **Energy Star Equipment -** Energy Star equipment was selected for 100% of Energy Star-eligible equipment in this project. This includes refrigerators, dishwashers, washing machines, and dryers..

PRODUCTS AND MATERIALS

LIGHTING AND CONTROLS

- **56% reduction** in lighting power density (watts/square foot)
- **Daylight sensors** are installed in all spaces within 15 feet of windows

Edge EX44
Pinnacle

✓ Total fixture wattage = 25 Watts
✓ Highly reflective die-formed white painted aluminum reflector.
✓ Die-formed anodized snap-in aluminum semi-specular parabolic louver

Performance Recessed Downlighting
Lightolier

✓ Total fixture wattage = 26 Watts
✓ Compact Fluorescent Lamps
✓ Dimming capabilities

Dual Technology Ceiling Sensors DT-300 Series
WattStopper

✓ Walk-through mode turns lights off after 3 minutes if occupancy not detected.
✓ Passive infrared and ultrasonic sensors.
✓ Integrated daylight sensor

ENERGY EFFICIENT APPLIANCES

100% of the equipment purchased for the project is **ENERGY STAR RATED** (by rated power).

Side by Side Refrigerator
Model #PSDS5YGX
GE Profile

✓ ENERGY STAR®
✓ ClimateKeeper2 System - Keeps food garden fresh longer, while protecting ice from odor transfer, with its unique dual-evaporator system

SmartDispense™ Technology Dishwasher
Model #CDWT980VSS
GE Cafe

✓ ENERGY STAR®
✓ SmartDispense™ - Holds an entire bottle of liquid automatic dishwasher detergent, dispensing the right amount based on water hardness and soil levels to get dishes incredibly clean

Frontload Washer
Model #PFWS4600LWW
GE Profile

✓ ENERGY STAR®
✓ eWash™ option - Energy-saving option uses a cold water wash on select cycles without sacrificing performance

WATER EFFICIENCY

36% reduction in annual water use (35,910 gallons/year projected savings) when compared to EPAct 1992 baseline standard

ECOS® Electronic Dual Flush
Model #8111
Sloan

✓ **1.1/1.6 gallons per flush** (gpf) vs. EPAct baseline of 1.6 gpf.

Lavatory Wideset
Model #20 297
Grohe

✓ **1.0 gallons per minute** (gpm) vs. EPAct baseline of 2.2 gpm.

EcoPower™ System Sensor Faucet
Model #32 216
Grohe

✓ **1.5 gallons per minute** (gpm) vs. EPAct baseline of 2.2 gpm.

Please note that while many products are described in this project profile, these are provided for informational purposes only, to show a representative sample of what was included in this project. Harvard University and its affiliates do not specifically endorse nor recommend any of the products listed in this project profile and this profile may not be used in commercial or political materials, advertisements, emails, products, promotions that in any way suggests approval or endorsement of Harvard University.

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If printing is required, please print double sided and recycle when finished. Thank you!

PRODUCTS AND MATERIALS

REGIONAL, RECYCLED, LOW VOC

19% recycled content value as a percentage of total materials cost
27% regionally manufactured materials value as a percentage of total materials cost
23% regionally wxtracted materials value as a percentage of total materials cost
Only low-VOC, or no-VOC adhesives, sealants, paints and coatings were used.

Kraft Honeycomb door
De la Fontaine
✓ Recycled Content
- 20% Post-consumer
- 25% Pre-consumer

✓ 100% Regionally Manufactured

Durock Cement Board Next Gen
USG
✓ Recycled Content
- 15% Post-consumer

✓ 86.4% Regionally Extracted/Manufactured

253 Gold
Lacrete
✓ VOC Content = 0g/L vs. 65 g/L VOC Limit

PROJECT TEAM

Photo: copyright David Kurtis, 2012

Owner	Harvard University Housing
Project Manager	Northstar Project & Real Estate Services
Architect	Elkus | Manfredi Architects
Landscape Architect	Carol R. Johnson Associates Inc.
MEP Engineer	TMP Consulting Engineers
Construction Manager	Shawmut Design and Construction
Sustainability Consultant & Commissioning Authority	Harvard Green Building Services

MORE INFORMATION

➢Harvard Campus Services: http://campusservices.harvard.edu/

➢Harvard University Housing: http://www.huhousing.harvard.edu/HarvardUniversityHousing/index.aspx

➢Harvard Green Building Services: http://green.harvard.edu/green-building-services

➢Harvard Green Building Resource: http://green.harvard.edu/theresource

➢Follow Green Building Services: http://www.facebook.com/HarvardGBS or @Harvard_GBS

LEED Certification Review Report

This report contains the results of the technical review of an application for LEED® certification submitted for the specified project. LEED certification is an official recognition that a project complies with the requirements prescribed within the LEED rating systems as created and maintained by the U.S. Green Building Council® (USGBC®). The LEED certifcation program is administered by the Green Building Certification Institute (GBCI®).

Peabody Terrace Graduate Commons

Project ID	1000021039
Rating system & version	LEED-CI v2009
Project registration date	12/20/2011

Certified (Platinum)

CERTIFIED: 40-49, SILVER: 50-59, GOLD: 60-79, PLATINUM: 80+

LEED FOR COMMERCIAL INTERIORS (V2009)

ATTEMPTED: 87, DENIED: 1, PENDING: 0, AWARDED: 86 OF 110 POINTS

SUSTAINABLE SITES	17 OF 21
SSc1 Site Selection	3 / 5
SSc2 Development Density and Community Connectivity	6 / 6
SSc3.1Alternative Transportation-Public Transportation Access	6 / 6
SSc3.2Alternative Transportation-Bicycle Storage and Changing Rooms	0 / 2
SSc3.3Alternative Transportation-Parking Availability	2 / 2

WATER EFFICIENCY	8 OF 11
WEp1 Water Use Reduction-20% Reduction	Y
WEc1 Water Use Reduction	8 / 11

ENERGY AND ATMOSPHERE	30 OF 37
EAp1 Fundamental Commissioning of the Building Energy Systems	Y
EAp2 Minimum Energy Performance	Y
EAp3 Fundamental Refrigerant Mgmt	Y
EAc1.1Optimize Energy Performance-Lighting Power	5 / 5
EAc1.2Optimize Energy Performance-Lighting Controls	1 / 3
EAc1.3Optimize Energy Performance-HVAC	10 / 10
EAc1.4Optimize Energy Performance-Equipment and Appliances	4 / 4
EAc2 Enhanced Commissioning	5 / 5
EAc3 Measurement and Verification	0 / 5
EAc4 Green Power	5 / 5

MATERIALS AND RESOURCES	8 OF 14
MRp1 Storage and Collection of Recyclables	Y
MRc1.1Tenant Space-Long-Term Commitment	1 / 1
MRc1.2Building Reuse	0 / 2
MRc2 Construction Waste Mgmt	2 / 2
MRc3.1Materials Reuse	2 / 2
MRc3.2Materials Reuse-Furniture and Furnishings	0 / 1
MRc4 Recycled Content	1 / 2
MRc5 Regional Materials	2 / 2
MRc6 Rapidly Renewable Materials	0 / 1
MRc7 Certified Wood	0 / 1

INDOOR ENVIRONMENTAL QUALITY	13 OF 17
IEQp1 Minimum IAQ Performance	Y
IEQp2 Environmental Tobacco Smoke (ETS) Control	Y
IEQc1 Outdoor Air Delivery Monitoring	1 / 1
IEQc2 Increased Ventilation	0 / 1
IEQc3.1Construction IAQ Mgmt Plan-During Construction	1 / 1
IEQc3.2Construction IAQ Mgmt Plan-Before Occupancy	1 / 1
IEQc4.1Low-Emitting Materials-Adhesives and Sealants	1 / 1
IEQc4.2Low-Emitting Materials-Paints and Coatings	1 / 1
IEQc4.3Low-Emitting Materials-Flooring Systems	0 / 1
IEQc4.4Low-Emitting Materials-Composite Wood and Agrifiber Products	1 / 1
IEQc4.5Low-Emitting Materials-Systems Furniture and Seating	1 / 1
IEQc5 Indoor Chemical and Pollutant Source Control	0 / 1
IEQc6.1Controllability of Systems-Lighting	1 / 1
IEQc6.2Controllability of Systems-Thermal Comfort	1 / 1
IEQc7.1Thermal Comfort-Design	1 / 1
IEQc7.2Thermal Comfort-Verification	1 / 1
IEQc8.1Daylight and Views-Daylight	1 / 2
IEQc8.2Daylight and Views-Views for Seated Spaces	1 / 1

INNOVATION IN DESIGN	6 OF 6
IDc1.1 Innovation in Design	1 / 1
IDc1.2 Innovation in Design	1 / 1
IDc1.3 Innovation in Design	1 / 1
IDc1.4 Innovation in Design	1 / 1
IDc1.5 Innovation in Design	1 / 1
IDc2 LEED® Accredited Professional	1 / 1

REGIONAL PRIORITY CREDITS	4 OF 4
SSc3.2 Alternative Transportation-Bicycle Storage and Changing Rooms	0 / 1
WEc1 Water Use Reduction	0 / 1
EAc1.1 Optimize Energy Performance-Lighting Power	1 / 1
EAc1.3 Optimize Energy Performance-HVAC	1 / 1
MRc3.1Materials Reuse	1 / 1
MRc5 Regional Materials	1 / 1

TOTAL	86 OF 110