

ED PORTAL
224 WESTERN AVE, BOSTON, MA

LEED CI v3.0
LEED SILVER
2016

The Harvard Ed Portal project is a 10,923 square foot renovation of an existing warehouse space in the Allston neighborhood of Boston. The existing space was built in 1975. The renovation was an opportunity to install efficient and effective multi-purpose space, climate control, lighting, acoustics, architectural finishes, daylighting control, audio and visual equipment, and appropriate layouts/furnishings per space type. In setting the sustainability goals to guide the project’s design and operation, the project team utilized the Harvard University Green Building Standards the LEED-CI v2009 Certification requirements. The main sustainability goals for the project include, but are not limited to the following:



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- Maximize HVAC equipment efficiencies
- Minimize the energy demand by choosing high efficiency lighting options and incorporating daylighting.
- Select products that report ingredients, have life-cycle reporting, and have been responsibly sourced.
- Reduce water use by purchasing WaterSense labeled plumbing fixtures.
- Increase the thermal and acoustic performance of the building envelop.
- Purchase Energy Star rated equipment.

The project achieved LEED-CI v3 Silver certification in December 2016.

LEED® Facts

**Harvard University
Ed Portal**



Location.....	Boston, MA
Rating System.....	LEED-CI v3
Certification Achieved.....	Silver
Total Points Achieved.....	55/110
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Sustainable Sites.....	14/21
Water Efficiency.....	8/11
Energy and Atmosphere.....	17/37
Materials and Resources.....	5/14
Indoor Environmental Quality.....	5/17
Innovation and Design.....	4/6
Regional Priority.....	2/4

PROJECT METRICS

- 31%** reduction in water use below code maximum
- 88%** of the eligible equipment and appliances by rated power are ENERGY STAR certified
- 22%** of the total building materials content, by value, has been manufactured using recycled materials
- 29%** reduction in lighting power density
- 60%** of construction waste was diverted from landfills
- 100%** of the project’s adhesives, sealants, paints, and coatings are low-emitting



PROJECT HIGHLIGHTS

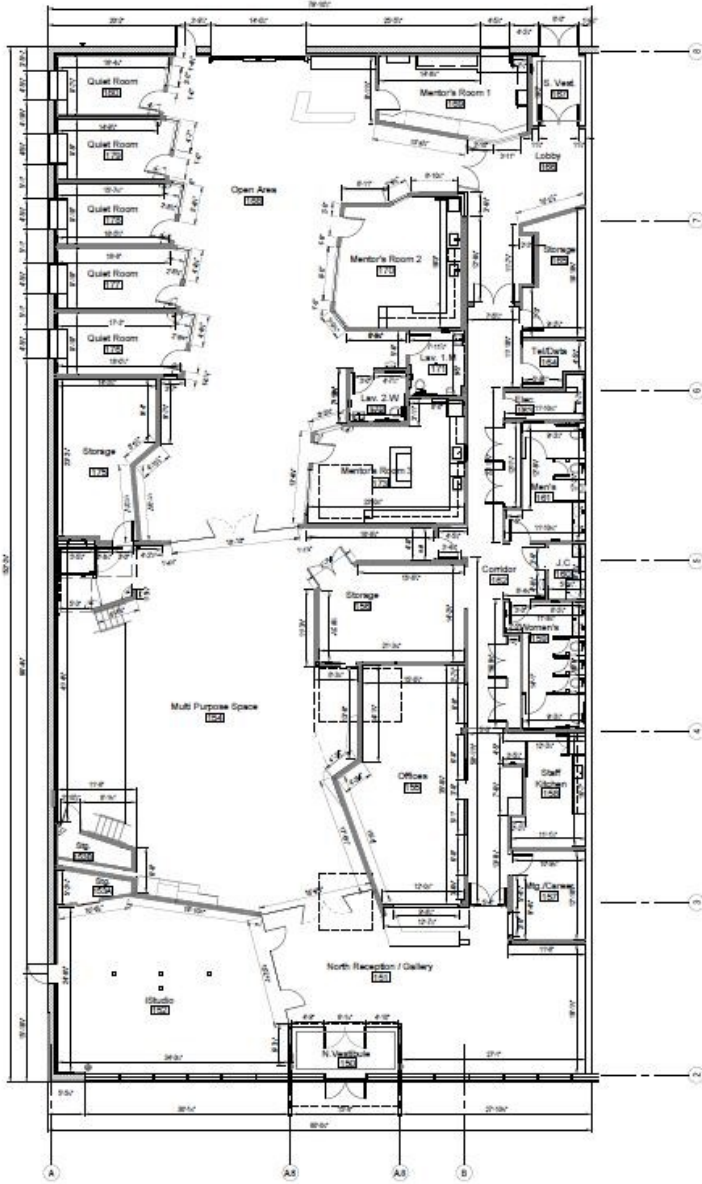


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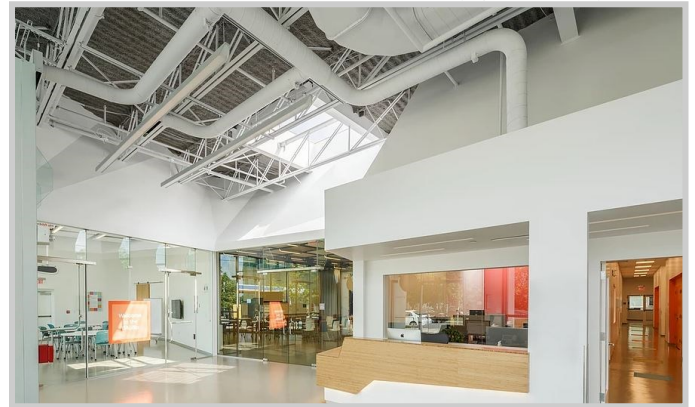


Photo: copyright: James Leynse, 2015

Key Sustainability Features:

- Revitalizing an existing space
- Energy efficient HVAC systems
- Extensive energy efficient lighting and daylighting design strategy with occupancy sensors, efficient fixtures, and controls

PROJECT TEAM

Owner	Harvard Real Estate
Project Manager	Harvard Planning and Project Management
Architect	The Galante Architecture Studio
MEP Engineer	Crossfield Engineering
Contractor	Shawmut Design and Construction
Commissioning Authority	Harvard Green Building Services
Sustainability Consultant	Harvard Green Building Services



Photo: copyright: James Leynse, 2015



ENERGY EFFICIENCY AND INDOOR ENVIRONMENTAL QUALITY

MECHANICAL SYSTEMS

ECM 1: High Efficiency Roof Top Units

ECM 2: Occupancy Sensors

ECM 3: High Efficiency Exhaust Systems

ECM 4: Thermostat Controls

ECM 5: Operable Windows

The overall strategy of the HVAC system design was to reduce energy use through the installation of high efficiency equipment and controls. The new high efficiency roof top units have been installed with comparative enthalpy economizers, hot gas reheat, integral smoke detectors, MERV 13 air filters, and demand control ventilation. Additionally, the newly installed exhaust system incorporates an energy recovery ventilator to temper fresh air intake, occupancy sensors in the girls and boys bathrooms, and operates on a signal from a reverse acting thermostat in the Tel/Data and Storage room. Thermostat controls and operable windows also add an extra thermal comfort aspect to the Ed Portal project space.



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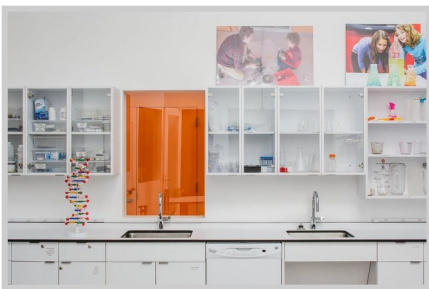


Photo: copyright: James Leynse, 2015

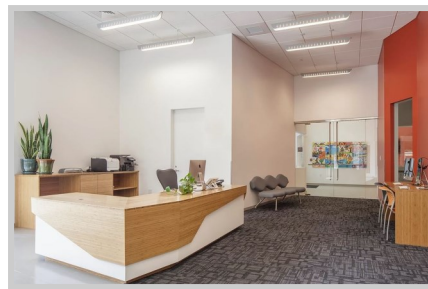


Photo: copyright: James Leynse, 2015



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INDOOR ENVIRONMENTAL QUALITY

The high indoor environmental quality of the Ed Portal renovation was a significant focus of the project. An indoor Quality Management Plan was enacted to ensure the protection of building systems, building occupants, construction related occupants, and interior building materials from air pollutants, excessive moisture exposure, and moisture damage during construction.

The selection of low chemical-emitting construction and finish materials was an important driving force in the design phase. The project includes low VOC adhesives, sealants, paints, coatings, primers, and flooring systems. All wood and agrifiber products are also free of urea-formaldehyde.

In addition, to reduce contaminants brought in from the outdoors, all main entryways have floor mats laid out.

ENERGY EFFICIENCY AND INDOOR ENVIRONMENTAL QUALITY

LIGHTING AND ELECTRICAL SYSTEMS

The Ed Portal space is expected to be occupied for different periods through-out the day, therefore, it is crucial that the energy reduction strategies focus on shutting off when areas are sufficiently day lit or unoccupied. The lighting system was designed to not only reduce energy use, but also to improve in the indoor environmental quality of the space and provide optimal lighting. Some of the strategies employed include:

- Reduce lighting power density by 29% below the ASHRAE 90.1 baseline standard
- High performance LEDs & T5 fixtures installed throughout the project space
- Ceiling mounted occupancy sensors capable of managing lighting setbacks for all occupied rooms
- Lighting controls with occupancy and daylight sensors to provide adequate illumination for a higher indoor environmental quality



Photo: copyright: James Leynse, 2015



Photo: copyright: James Leynse, 2015

PLUMBING SYSTEMS AND POTABLE WATER USE REDUCTION



Photo: copyright: James Leynse, 2015

Decreasing the demand for potable water is the first step towards sustainable water management. Therefore, the plumbing system for the Ed Portal was designed to reduce resource consumption, specifically potable water use. Potable water use was reduced by incorporating the following:

- Water closets with an installed gpf of 1.28, reducing water use by 20% when compared to code
- Urinals with an installed gpf of 0.13, reducing water use by 87% when compared to code
- Kitchen sinks with an installed gpm of 1.5, reducing water use by 31.82% when compared to code
- Lavatory faucets with an installed gpm of 0.5, the same flow rate required by code

With the installation of these fixtures, the overall percent reduction of water use is just over 31%.

PRODUCTS AND MATERIALS

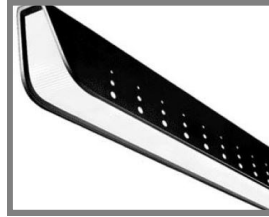
LIGHTING AND CONTROLS

- 29% reduction in lighting power density (watts/square foot)



T5 TuffGuard
Philips

- ✓ Total fixture wattage = 28 watts
- ✓ Meet sustainability requirements by having low mercury, energy efficiency, a long life, and a thick coating for protection.



Jump Suspended LED
Philips Ledalite

- ✓ Total fixture wattage = 27.5 watts
- ✓ Total light output = 2315 lumens
- ✓ Total lifetime = 50,000 hours
- ✓ LED Fixture



Dual Technology Ceiling Sensors
DT-300 Series
Watt Stopper

- ✓ Walk-through mode available
- ✓ Passive infrared and ultrasonic sensors.
- ✓ Auto set automatically selects optimal settings for each space

ENERGY EFFICIENT APPLIANCES & WATER EFFICIENCY

- 88% of the equipment purchased for the project is **ENERGY STAR RATED** (by rated power).
- 31% reduction in annual water use when compared to EPA 1992 baseline standard.



Side-By-Side Refrigerator
Model #GSH22JGD
GE

- ✓ ENERGY STAR®
- ✓ Auto Energy Saver
- ✓ Total capacity of 22.1 cubic feet and a freezer volume of 7.1 cubic feet



ED-D Series 55" Direct-Lit LED Display-
Model #ED55D
Samsung

- ✓ ENERGY STAR®
- ✓ Direct-Lit LED Display
- ✓ Enhanced Connectivity Options
- ✓ Maintains simplicity and ease of use while performing efficiently



E-Tronic® 40 Traditional sink Faucet with
Dual Beam Infrared Sensor
Model # 116.706.AB.1
Chicago Faucets

- ✓ 0.5 gallons per minute (gpm)
- ✓ ECAST® construction with equal to or less than 0.25% lead content

LOW-EMITTING MATERIALS

- 100% of the project's adhesives, sealants, paints, and coatings are **low-emitting**.



Carpet/Resilient Adhesive
Model # Ultrabond Eco 575
Maipeli

- ✓ Low VOC content
- ✓ GEV-Emicode certified



Ceramic Tile Flooring
Model #Parkway
Daltile

- ✓ No VOCs
- ✓ Meets ANSI A137.1 standards



Interior Water-based Primer
Model #NXT Primer
Laticrete

- ✓ Low VOC content
- ✓ Greenguard Certified

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.

PROJECT SCORECARD

Harvard Ed Portal

Project ID 1000055428
Rating system & version LEED-CI v2009
Project registration date 02/26/2015



D and C Application Decision

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

LEED FOR COMMERCIAL INTERIORS (V2009)

ATTEMPTED: 53, DENIED: 3, PENDING: 1, AWARDED: 55 OF 110 POINTS

SUSTAINABLE SITES 14 OF 21	
SSc1 Site Selection	2 / 5
SSc2 Development Density and Community Connectivity	6 / 6
SSc3.1 Alternative Transportation-Public Transportation Access	6 / 6
SSc3.2 Alternative Transportation-Bicycle Storage and Changing Room	0 / 2
SSc3.3 Alternative Transportation-Parking Availability	0 / 2

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

ENERGY AND ATMOSPHERE 17 OF 37	
EAp1 Fundamental Commissioning of the Building Energy Systems	Y
EAp2 Minimum Energy Performance	Y
EAp3 Fundamental Refrigerant Mgmt	Y
EAc1.1 Optimize Energy Performance-Lighting Power	3 / 5
EAc1.2 Optimize Energy Performance-Lighting Controls	1 / 3
EAc1.3 Optimize Energy Performance-HVAC	0 / 10
EAc1.4 Optimize Energy Performance-Equipment and Appliances	3 / 4
EAc2 Enhanced Commissioning	5 / 5
EAc3 Measurement and Verification	0 / 5
EAc4 Green Power	5 / 5

MATERIALS AND RESOURCES 5 OF 14	
MRp1 Storage and Collection of Recyclables	Y
MRc1.1 Tenant Space-Long-Term Commitment	1 / 1
MRc1.2 Building Reuse	0 / 2
MRc2 Construction Waste Mgmt	1 / 2
MRc3.1 Materials Reuse	0 / 2
MRc3.2 Materials Reuse-Furniture and Furnishings	0 / 1
MRc4 Recycled Content	2 / 2
MRc5 Regional Materials	1 / 2
MRc6 Rapidly Renewable Materials	0 / 1
MRc7 Certified Wood	0 / 1

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

INNOVATION IN DESIGN 4 OF 6	
IDc1.1 Innovation in Design	0 / 1
IDc1.1 Innovation in Design	0 / 1
IDc1.2 IDc1.2: Low-Mercury Lighting Design	1 / 1
IDc1.2 Innovation in Design	0 / 1
IDc1.3 IDc1.3 Innovation in Design - Exemplary Performance SSc3.1	1 / 1
IDc1.3 Innovation in Design	0 / 1
IDc1.4 IDc1.4 Innovation in Design - Exemplary Performance EAc4	1 / 1
IDc1.4 Innovation in Design	0 / 1
IDc1.5 Innovation in Design	0 / 1
IDc1.5 Innovation in Design	0 / 1
IDc2 LEED® Accredited Professional	1 / 1

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

TOTAL 55 OF 110

MORE INFORMATION

- Harvard Public Affairs & Communications Ed Portal: <http://edportal.harvard.edu/>
- Harvard - Green Building Resource: <http://www.energyandfacilities.harvard.edu/green-building-resource>
- Harvard - Green Building Services: <http://www.energyandfacilities.harvard.edu/project-technical-support/capital-projects/sustainable-design-support-services>

