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:

- 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

### Project Metrics

<table>
<thead>
<tr>
<th>Metric</th>
<th>Score</th>
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</thead>
<tbody>
<tr>
<td>Sustainable Sites</td>
<td>14/21</td>
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<td>Water Efficiency</td>
<td>8/11</td>
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<td>Energy and Atmosphere</td>
<td>17/37</td>
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<td>Materials and Resources</td>
<td>5/14</td>
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<tr>
<td>Indoor Environmental Quality</td>
<td>5/17</td>
</tr>
<tr>
<td>Innovation and Design</td>
<td>4/6</td>
</tr>
<tr>
<td>Regional Priority</td>
<td>2/4</td>
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</tbody>
</table>

- 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**

**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**

<table>
<thead>
<tr>
<th>Role</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owner</td>
<td>Harvard Real Estate</td>
</tr>
<tr>
<td>Project Manager</td>
<td>Harvard Planning and Project Management</td>
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<tr>
<td>Architect</td>
<td>The Galante Architecture Studio</td>
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<td>MEP Engineer</td>
<td>Crossfield Engineering</td>
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<td>Contractor</td>
<td>Shawmut Design and Construction</td>
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<td>Commissioning Authority</td>
<td>Harvard Green Building Services</td>
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<td>Sustainability Consultant</td>
<td>Harvard Green Building Services</td>
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</tbody>
</table>

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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.

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.
Increasing 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%. 

The Ed Portal space is expected to be occupied for different periods throughout 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
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 EPAAct 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
- Maipei
- 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.
LEED FOR COMMERCIAL INTERIORS (V2009)

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

More Information