



HARVARD UNIVERSITY LIBRARIES

LITTAUER LIBRARY

1805 CAMBRIDGE STREET, CAMBRIDGE, MA 02138

LEED-CI V2.0
GOLD

The existing Littauer Center for Public Administration building at Harvard University was built in 1931, with design modifications in 1978. The building is a low-rise limestone building consisting of four stories above grade with two underground floor levels that serve library book stacks. The building is located within a historic district on the Harvard University campus in Cambridge, Massachusetts. A portion of the first floor as well as the basement and sub-basement are being renovated to provide space for the Harvard Fine Arts Library, which will contain reading rooms, book circulation space, and stacks/book storage. The interior program includes the main reading room, circulation and reserves, public services, research services and collection, the special collections reading room, and work areas for the library staff. The expected peak occupancy is 106, which includes both full and part time employees as well as daily library visitors/researchers. The total renovated area within the LEED project boundary is 23,300 square feet, though the facility is over 89,000 square feet in total. No work on the exterior or landscape was within the scope of this renovation.



Littauer Front Entrance
Photo: Harvard Green Building Services

PROJECT HIGHLIGHTS

LEED® Facts

Littauer Center, Fine Arts Library
Harvard College Library
2009 Renovation



Location.....	Cambridge, Massachusetts
Rating System.....	Commercial Interiors v2.0
Certification Achieved.....	Gold
Total Points Achieved.....	40 / 57
Sustainable Sites.....	4/7
Water Efficiency.....	2/2
Energy and Atmosphere.....	6/12
Materials and Resources.....	11/14
Indoor Environmental Quality.....	12/17
Innovation and Design.....	5/5

25%

of the total material value came from materials manufactured within 500 miles of the project site.

87%

of the total value of new wood used in the project is Forest Stewardship Council (FSC) Certified.

40%

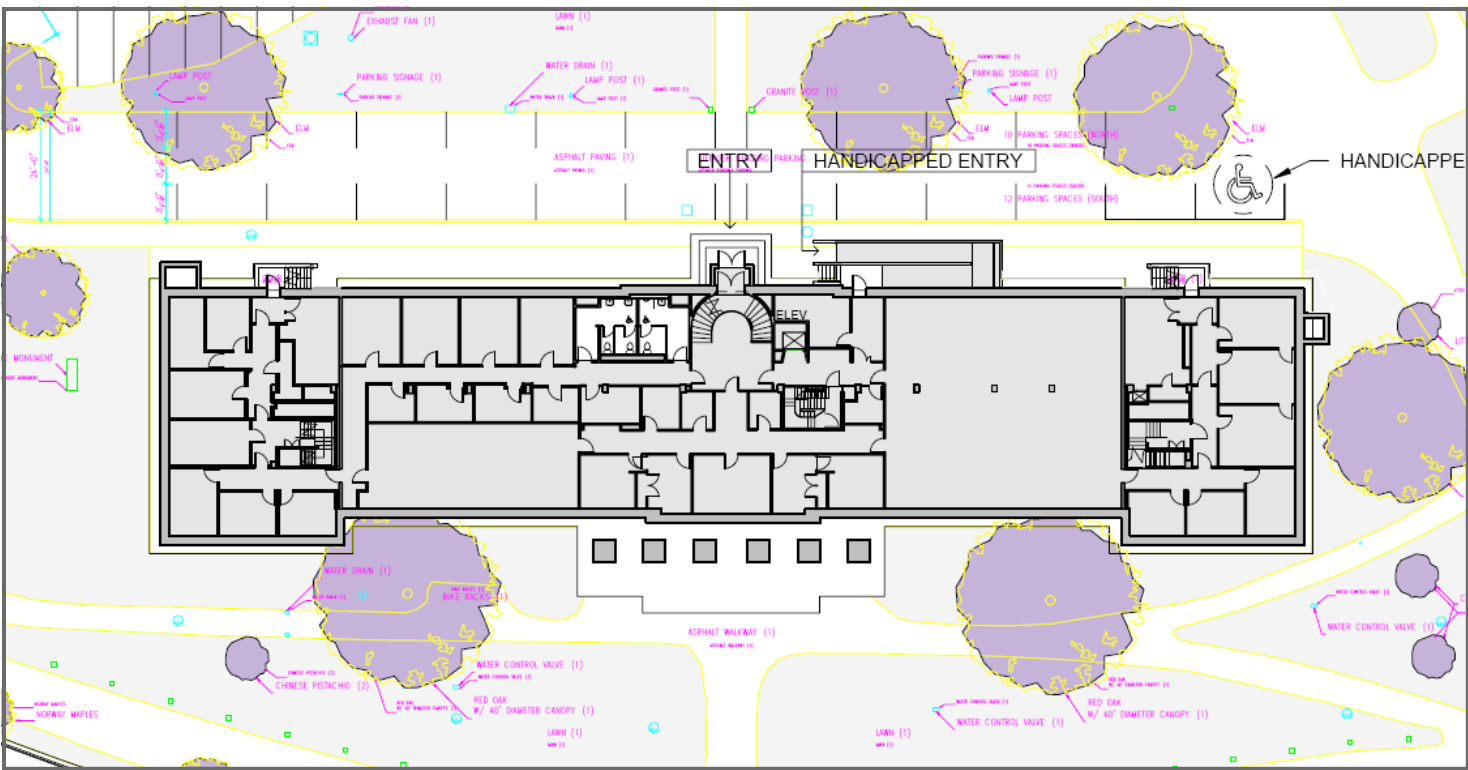
reduction in water consumption compared to EPA 1992 compliant fixtures.

72%

of the equipment and appliances are Energy Star® rated



PROJECT OVERVIEW



Fine Arts Library Entry 2
Photo: Harvard Green Building Services

PROJECT TEAM

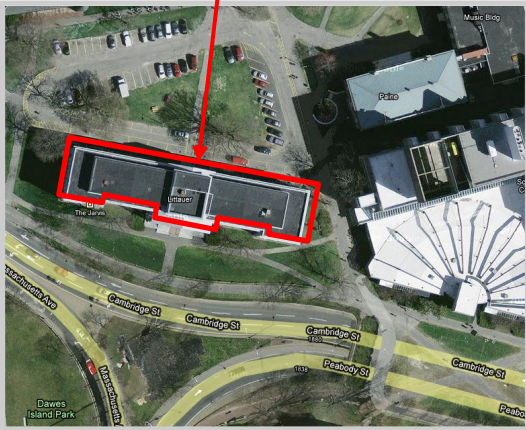
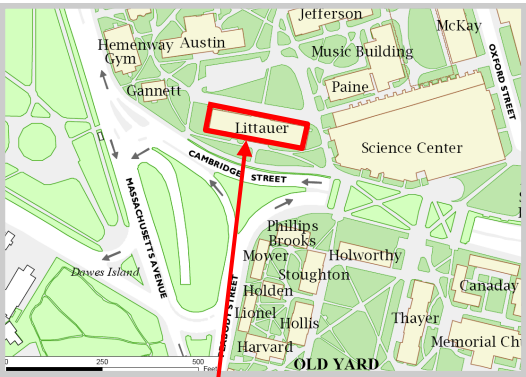
Owner	Harvard Faculty of Arts and Sciences
Project Manager	Petrina Garbarini, Harvard FAS
Architect	KMW Architects
Construction Manager	Shawmut Design and Construction
Lighting Engineer	Ripman Lighting Consultants, Inc.
HVAC Engineer	Cosentini Associates, Inc.
Commissioning Agent	Sebesta Blomberg
Sustainability Consultant	Harvard University Green Building Services



Receptionist Desk
Photo: Harvard Green Building Services



SITE



Littauer Center
1805 Cambridge Street,
Cambridge, Massachusetts

- To encourage alternatives to driving, all occupants have access to Harvard's comprehensive **CommuterChoice Program**, which provides incentives, such as discounts, for all modes of alternative transportation as well as carpooling and fuel efficient vehicles. The Program is promoted through informational kiosks in building common areas and an extensive website. (www.commuterchoice.harvard.edu)
- The building is located within walking distance to the Harvard Square MBTA stop, several bus lines, and the Harvard University Shuttle.
- The Littauer Library provides bicycle racks adjacent to the building and shower and changing facilities are located in the Hemenway Gym 133 yards away
- The building is located in a dense urban area with several services, which allows occupants to walk and easily access amenities such as restaurants, banks, churches, and retail stores.



Bike Racks at the Littauer Library entrance
Photo: Harvard Green Building Services

WATER EFFICIENCY

The Littauer Center LEED Boundary includes the renovation of two bathrooms. Per project specifications, only water efficient fixtures were installed, which **reduces domestic water consumption by 40.5% over standard EAct 1992 fixtures**. This is the equivalent of saving over 80,000 gallons per year.

FIXTURES IN LITTAUER PROJECT SCOPE



Zurn EcoVantage
Flushometer
(1.28 gpf)



Zurn Retrofit Pint
Flushometer
(0.125 gpf)



Delta Low-flow shower head
1.6 GPM Showerhead

Differences in the Flush & Flow Rates for EAct 1992 Standard Fixtures and the fixtures installed for the Fine Arts Library Project		
Fixture Type	Fine Arts Library Flush & Flow Rates	EAct 1992 Standard Flush & Flow Rates
Water Closet [GPF]	1.28	1.6
Urinal [GPF]	0.125	1.0
Bathroom Sink [GPM]	0.5	2.5
Shower [GPM]	1.6	2.5
GPF - Gallons Per Flush GPM - Gallons Per Minute		



ENERGY EFFICIENCY

Harvard Libraries have committed, along with the larger Harvard University, to reduce greenhouse gas emissions 30% below 2006 levels by 2016, inclusive of growth. To this end, energy efficiency was one of the primary sustainability-related goals in this renovation project.

Mechanical Systems

- **Variable Frequency Drives:** All pumps are outfitted with variable frequency drives to ensure that pumps are running only as much as is required and no more.
- **Building Automation System:** All automatic temperature controls are direct digital control (DDC). Automatic controls provide energy savings based on system zoning, scheduling and occupied/unoccupied setbacks.
- **Commissioning:** The mechanical and electrical systems were fully commissioned by a third-party Commissioning Authority, which ensured that all energy-related systems were installed as designed, and operating efficiently prior to

Electrical Systems

- **Light Fixtures:** Energy-efficient fluorescent lighting fixtures and lamps were carefully chosen and placed to reduce electricity consumption 16.4% when compared to ASHRAE 90.1-2004 baseline lighting allowances.
- **Occupancy Sensors:** Ceiling mounted occupancy sensors are installed in the stack areas in the sub-basement and basement levels.
- **Plug Loads:** Energy Star products were selected for over 70% of the Energy Star-eligible equipment in the space. This includes computers, monitors, printers, scanners, copy/fax machines, and a water cooler.
- **Renewable Energy Purchases:** Green-E certified Renewable Energy Certificates (RECs) were purchased from Sterling Planet equivalent to 100% of the anticipated electricity use.



<-Occupancy Sensors (Top) in Stacks
Photo: Harvard Green Building Services

Fine Arts Library - Rare Books Room 2
Photo: Harvard Green Building Services



INDOOR ENVIRONMENTAL QUALITY

The Harvard Libraries are committed to providing a healthy indoor environment for all occupants. The project team was careful to maintain healthy indoor air quality during construction and to also ensure the space is designed to promote healthy indoor air quality during occupancy.

Indoor Air Quality During Construction: The building maintained occupancy throughout construction. Thus, a comprehensive indoor air quality management plan was implemented during construction to maintain healthy indoor air quality. For example, all grills and vents were sealed to prevent dust and other contaminants from piling up in the ductwork.

Only products with **Low or No VOC Content** were used in the Fine Arts Library project. Volatile Organic Compounds (VOCs) are chemical compounds and known carcinogens found in many construction materials, and are considered detrimental to indoor air quality. Reducing the use of VOCs whenever possible improves indoor air quality and consequently occupant health and productivity.

- **COMPOSITE WOOD AND LAMINATE ADHESIVES:** No Added Urea Formaldehyde in any of the products.
- **LOW EMITTING MATERIALS, SYSTEMS FURNITURE AND SEATING:** The seating in this project are Global Total Office Aspen and Herman Miller Caper chairs that are GREENGUARD Indoor Air Quality Certified.
- **PAINTS AND COATINGS | ADHESIVES AND SEALANTS:** All interior paints used in the project have 0 or low VOC Content.



Herman Miller Caper Chair
Cradle to Cradle and GreenGuard IAQ certified



Global Total Office Aspen Chair
GreenGuard IAQ Certified

Product Category	Product & Manufacturer	VOC Content (g/l)	VOC Limit (g/l)	Standard
Paints & Coatings	➤ ProGreen200 B30-600—Sherwin Williams	47	150	Green Seal, GS-11
	➤ ProGreen200 B20-600—Sherwin Williams	41	50	Green Seal, GS-11
Adhesives & Sealants	➤ Fire Barrier CP25 WB Caulk—3M	0	250	SCAQMD Rule #1168
	➤ Sheetrock Joint Compound—USG	0	250	SCAQMD Rule #1168



Reading Room

Photo: Green Building Services

Lighting Control: Task lighting and controls have been provided in the individual study areas, and dimming controls are included in conference and other shared spaces to enable ideal lighting conditions for all building occupants.

Thermal Comfort Survey: To ensure comfort, occupants will be surveyed about their thermal comfort. Harvard Libraries will adjust the heating or cooling in the project space as needed.





MATERIALS AND WASTE

Selecting environmentally preferable materials and minimizing the amount of construction waste sent to landfill was important to the project. When selecting materials, preference was given to locally manufactured, low-emitting materials with recycled content. Additionally, accounting for the long lead times associated with FSC Certified wood casework and flooring from the beginning ensured that the majority of new wood in the project was sustainable.

78% of the construction waste was diverted from landfills.

28% of the total material value consists of post-consumer and/or pre-consumer recycled content materials.

25% of the total material value consists of materials manufactured within 500 miles of the project site

87% of the total value of new wood used in the project is Forest Stewardship Council (FSC) Certified.

ENVIRONMENTALLY PREFERABLE MATERIALS IN THE FINE ARTS LIBRARY

- Metal Studs (Dietrich Steel)
Recycled Content: **37%** post-consumer, **17%** pre-consumer
Regional Material: **41 miles** manufactured, **354 miles** extracted
- Steel Built-in Library Shelving (Spacesaver Corporation)
Recycled Content: **40%** post-consumer, **40%** pre-consumer
- Insulation (Certainteed)
Recycled Content: **20%** pre-consumer
Regional Material: **311 miles** manufactured, **352 miles** extracted
- Gypsum Wallboard—Gypsum (USG)
Recycled Content: **5%** post-consumer, **94%** pre-consumer
Regional Material: **311 miles** manufactured, **311 miles** extracted
- Gypsum Wallboard—Paper (USG)
Recycled Content: **5%** post-consumer, **94%** pre-consumer
Regional Material: **311 miles** manufactured, **352 miles** extracted
- Hollow Metal Frames (Ceco Corporation)
Recycled Content: **59%** post-consumer, **9%** pre-consumer
Regional Material: **41 miles** manufactured, **354 miles** extracted



Salvaged and reused table in the reading area

Photo: Green Building Services

ADDITIONAL RESOURCES

- Harvard Library: <http://lib.harvard.edu/>
- Harvard College Library, Fine Arts Library: <http://hcl.harvard.edu/libraries/finearts/>
- Harvard Green Building Services: <http://green.harvard.edu/green-building-services/>
- Harvard Green Building Resource: <http://green.harvard.edu/theresource>
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