HARVARD MEDICAL SCHOOL

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WYSS INSTITUTE—CENTER FOR LIFE SCIENCES
3 BLACKFAN CIRCLE, CLSB 2ND FLOOR, BOSTON MASSACHUSETTS
PROJECT PROFILE

LEED CI v 2009
LEED PLATINUM
2012

The Center for Life Sciences Wyss Institute LEED-CI project is comprised of 23,115 square feet of space located on the second floor of the Center For Life Sciences Building (a LEED Gold Core and Shell Building) in Boston. Renovated by Harvard Medical School, the second floor space accommodates the Wyss Institute's expansion from the fifth floor of the Center for Life Sciences Building. The second floor lab and research space is used to further the Institute's mission to "develop biologically inspired materials and device technologies capable of solving critical medical and environmental problems."

The design and fit-out of the Wyss Institute—CLSB project supports a high-risk, science-driven approach to research based on innovation, collaboration, and technology translation by bringing together diverse academic, clinical, and industrial partners in *Collaboratories*.

Photo: Green Building Services, 2012

The Wyss Institute—CLSB project sought a LEED Platinum certification and prioritized healthy and productive work spaces for occupants while reducing their carbon footprint and minimizing the Institute's use of non-sustainable resources. To that end, the fit-out also focused on reducing energy and water consumption, using sustainable construction materials, and designing a space layout that maximized natural daylight and occupant interaction.

LEED® Facts

Harvard University
Wyss Institute - Center for Life Sciences Building

Location	Boston, MA
Rating System	LEED-CI v2009
Certification Achieved	Platinum
Total Points Submitted	93/110
Sustainable Sites	21/21
Water Efficiency	11/11
Energy and Atmosphere	33/37
Materials and Resources	6/14
Indoor Environmental Quality	12/17
Innovation and Design	6/6
Regional Priority	4/4

PROJECT METRICS

26% reduction in **lighting power density** (watts/square foot) compared to the baseline standard (ASHRAE 90.1-2007)

48% reduction in **water use** compared to the EPAct 1992 baseline.

38% **regional manufactured** materials value as a percentage of total materials cost

14% **recycled** content value as a percentage of total materials cost

90% Of all **construction waste and debris was diverted from land-fills.**

Please print this project profile only if necessary.
If printing is required, please print double sided and recycle when finished. Thank you!

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CENTER FOR LIFE SCIENCES BUILDING—LEED GOLD—CORE & SHELL

Image: Biomed Realty Trust

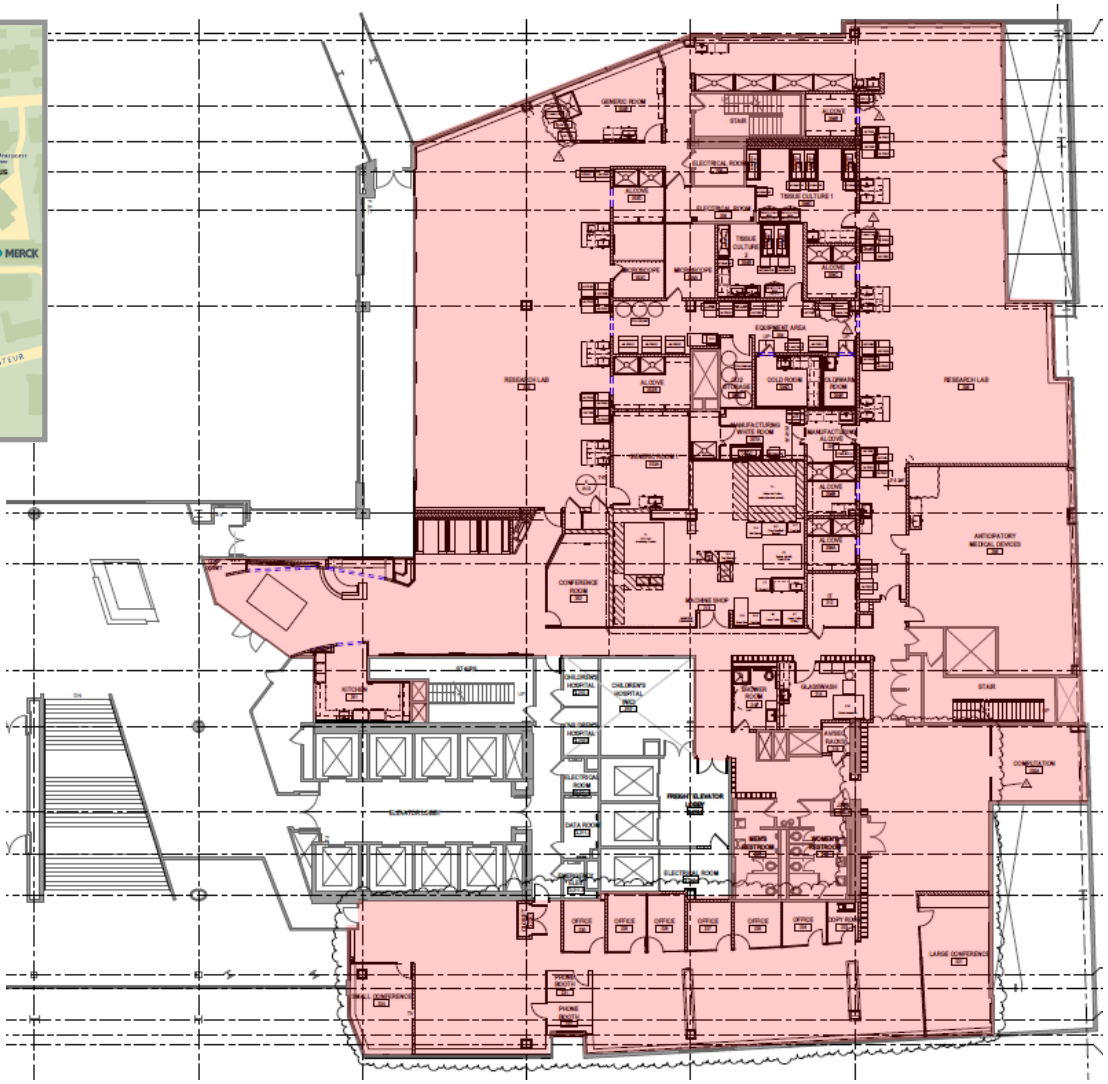

Image: Wyss Institute—2nd Floor Plan
Winter Street Architects — 2011

Photo: Center for Life Sciences Building
Boston Children's Hospital—Corfas Laboratory Website

The Center for Life Sciences Building (CLSB) is a 700,000+ square feet, 18 story research building located in the center of Boston's Longwood Medical area surrounded by Harvard Medical School, Brigham and Women's Hospital, the Dana-Farber Cancer Institute, and Merck Research Laborites Boston. Built in 2008 and managed by BioMed Realty Trust, the building earned a LEED Core and Shell Gold certification. CLSB base building sustainable features include:

- A central location with convenient pedestrian access to public transportation and community services
- A previously redeveloped brownfield site
- A stormwater runoff and grey water reuse system for all building flush fixtures
- A glass envelope and shallow floor plate to maximize views and natural daylight in tenant spaces

ENERGY EFFICIENCY

Harvard Medical School and the Wyss Institute have committed, along with Harvard University as a whole, to reduce greenhouse gas emissions 30% below 2006 levels by 2016, inclusive of growth. Therefore minimizing energy consumption was a main goal of this fit out project.

HEATING/COOLING SYSTEMS

ECM 1: Variable Air Volume Control (VAV) - Supply and make up air is delivered to the project space by the base building air handling units and exhaust systems delivering variable air volumes as needed. Zoning for the VAV system was determined by grouping areas with similar cooling loads.

ECM 2: Increased Ventilation & Demand Control - The mechanical system has been designed to provide the Wyss Institute space 30% more fresh outdoor air than required by ASHRAE ventilation standards to improve occupant and inhabitant comfort. CO_2 sensors monitor air quality and modulate outdoor air as necessary to save conditioning energy.

ECM 3: HVAC Occupancy Controls - VAV boxes, fan coil units and air valves are wired to occupancy sensors allowing turndown and standby modes.

ECM 4: Efficient Equipment - High performance fume hoods receive supply air from VAV terminal boxes exhausted by a variable volume exhaust air valve. Controlled by a sash sensor, the exhaust valve adjusts based on the sash height to maintain a safe but minimum face velocity. The supply and exhaust VAV boxes modulate in cooperation to maintain the space design system pressurization.

Photo: Green Building Services , 2012

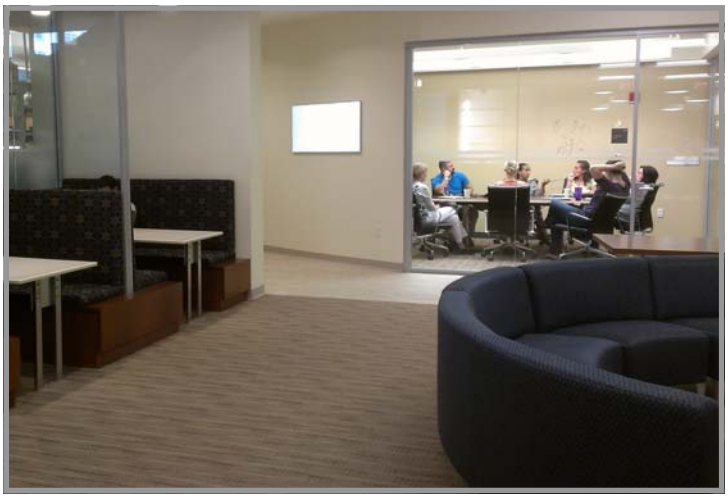

Photo: Green Building Services , 2012

ELECTRICAL SYSTEMS

ECM 1: Lighting Fixtures - Energy-efficient and low-mercury fluorescent lamps were carefully chosen and strategically placed to reduce electricity consumption while maintaining adequate lighting. Task lighting was integrated into the cabinetry to improve occupant comfort and control.

ECM 2: Light Controls - Occupancy sensors are located throughout the project to reduce power consumption. Fixtures in close proximity to exterior windows are fitted with integrated daylight sensors and dim automatically to take advantage of naturally day lit spaces.

ECM 3: Energy Star Equipment - Energy Star equipment was selected for all new eligible equipment in the project space, including the kitchen appliances and information screens.

ECM 4: Renewable Energy - Renewable Energy Certificates (RECs) were purchased from Renewable Choice equivalent to 100% of the anticipated electricity use over 2 years.

MATERIALS

Photo: Green Building Services , 2012

Materials installed in the Wyss Institute CLSB project were selected in accordance with sustainable attributes:

- Flooring choices include Green Label certified Atlas broadloom carpet, tile made of 42% pre-consumer recycled content, and 100% regionally manufactured sheet flooring.
- Built-in casework is easily reconfigured for future renovations and manufactured regionally from FSC wood and 60% recycled steel (pre & post-consumer).
- The Armstrong Architectural ceiling is manufactured from 67% pre-consumer recycled content, and the USG gypsum walls are made of 95% recycled content.

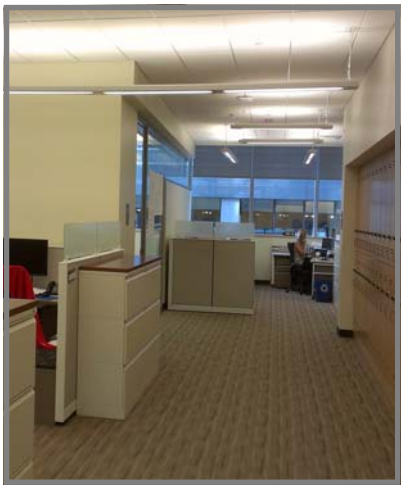

Photo: Green Building Services , 2012

WATER EFFICIENCY

ECOS® Electronic Dual Flush
Model #8111
Sloan
✓ **1.1/1.6 gallons per flush** (gpf)
vs. EPAct baseline of 1.6 gpf.

The Center for Life Sciences grey water system provides 69% of the total flush water requirement for the buildings occupants including the Wyss Institute. The water is tinted blue to indicate the non potable water source.

The Wyss Institute project reduced total potable water consumption by 48.3% by taking advantage of the base building storm water reclamation system for flush fixtures and retrofitting the flow fixtures with efficient alternatives.

Temptrol™ Showerhead
Symmons
✓ **1.5 gallons per minute** (gpm)
vs. EPAct baseline of 2.5 gpm.

ENERGY EFFICIENT EQUIPMENT

- Project lighting power density was reduced 26% by using efficient, yet appealing indirect fluorescent T5 linear fixtures fitted with built-in day lighting sensors and automatic dimming ballasts.
- Installed equipment is Energy Star rated to reduce energy consumption
- Building automation sensors and CO_2 monitors modulate the HVAC system basted on demand and occupancy.
- High performance VAV fume hoods modulate exhaust and make up air to reduce energy needed to heat and cool the lab space.
- Utility consumption metering and display visible to all occupants and visitors through the Lucid project kiosk and utility dashboard.

Photo: Green Building Services , 2012

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.

PROCESS AND INDOOR ENVIRONMENTAL QUALITY

Careful design attention has been paid to the Wyss Institute CLSB project to ensure overall indoor environmental quality including:

- LED task lighting integrated into lab benches that allows the occupant and user to control lighting to suit specific task needs
- Access to day-lighting and views throughout
- Collaborative seating spaces and systems furniture to enhance occupant interaction
- Centrally located storage for lab equipment including freezers, dishwashers, autoclaves, and a heavy equipment machine shop to minimize noise and share equipment resources.
- Strict adherence to a construction IAQ plan to protect HVAC ductwork and equipment as well as the long term health of future occupants by installing an Aircuity air quality system measurement device through out.

Photo: Green Building Services , 2012

Photo: Green Building Services , 2012

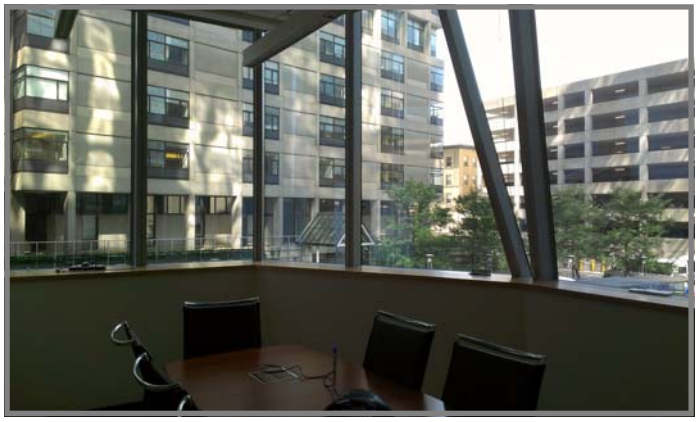

Photo: Green Building Services , 2012

PROJECT TEAM

Owner	Harvard Medical School (HMS)
Architect	Winter Street Architects, Inc.
MEP Engineer	Bard, Rao + Athanas
Contractor	Bond Brothers, Inc.
Sustainability Consultant	Harvard Green Building Services
Commissioning Authority	AKF Group

MORE INFORMATION

- Harvard Wyss Institute: http://wyss.harvard.edu/
- Harvard Medical School Sustainability: http://green.harvard.edu/hms
- 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®).

Wyss Institute - Center for Life Science

Project ID	1000015109
Rating system & version	LEED-CI v2009
Project registration date	04/20/2011

Certified (Platinum)

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

LEED FOR COMMERCIAL INTERIORS (V2009)

ATTEMPTED: 95, DENIED: 1, PENDING: 0, AWARDED: 93 OF 110 POINTS

SUSTAINABLE SITES — 21 OF 21

SSc1 Site Selection	5 / 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	2 / 2
SSc3.3Alternative Transportation-Parking Availability	2 / 2

WATER EFFICIENCY — 11 OF 11

WEp1 Water Use Reduction-20% Reduction	Y
WEc1 Water Use Reduction	11 / 11

ENERGY AND ATMOSPHERE — 33 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	3 / 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	5 / 5
EAc4 Green Power	5 / 5

MATERIALS AND RESOURCES — 6 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	0 / 2
MRc3.2Materials Reuse-Furniture and Furnishings	0 / 1
MRc4 Recycled Content	1 / 2
MRc5 Regional Materials	1 / 2
MRc6 Rapidly Renewable Materials	0 / 1
MRc7 Certified Wood	1 / 1

INDOOR ENVIRONMENTAL QUALITY — 12 OF 17

IEQp1 Minimum IAQ Performance	Y
IEQp2 Environmental Tobacco Smoke (ETS) Control	Y
IEQc1 Outdoor Air Delivery Monitoring	1 / 1
IEQc2 Increased Ventilation	1 / 1
IEQc3.1Construction IAQ Mgmt Plan-During Construction	1 / 1
IEQc3.2Construction IAQ Mgmt Plan-Before Occupancy	0 / 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	1 / 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	1 / 1
IEQc6.1Controllability of Systems-Lighting	1 / 1
IEQc6.2Controllability of Systems-Thermal Comfort	0 / 1
IEQc7.1Thermal Comfort-Design	1 / 1
IEQc7.2Thermal Comfort-Verification	1 / 1
IEQc8.1Daylight and Views-Daylight	0 / 2
IEQc8.2Daylight and Views-Views for Seated Spaces	0 / 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	1 / 1
WEc1 Water Use Reduction	1 / 1
EAc1.1 Optimize Energy Performance-Lighting Power	1 / 1
EAc1.3 Optimize Energy Performance-HVAC	1 / 1
MRc3.1Materials Reuse	0 / 1
MRc5 Regional Materials	0 / 1

TOTAL	**93 OF 110**