

John W. McCormack Post Office and Courthouse

EPA REGION 1 OFFICE • BOSTON, MASSACHUSETTS

VITAL STATISTICS

Facility Type: Office Space

Construction: Historic Green Renovation

Location: Boston, Massachusetts

Size: More than 700,000 gross square feet (EPA occupying 328,862 rentable square feet)

Occupancy: 840 EPA employees

Reoccupied: December 2009

LEED® Status: Gold 2.2 Certification for New Construction

Points Earned: 43

The past and the future have come together in the renovation of the John W. McCormack Post Office and Courthouse (POCH) in Boston, Massachusetts. The U.S. General Services Administration (GSA) and U.S. Environmental Protection Agency (EPA) renovated this Art Deco landmark in downtown Boston's Post Office Square with the goal of preserving its historical features while showcasing it as a model of energy efficiency and sustainable design for future projects.



BEST OF THE OLD AND NEW

Built in 1933, the 23-story, more than 700,000-square-foot historic McCormack POCH is a beautiful example of Art Deco architecture. Since December 2009, it has housed EPA New England's offices, serving Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont, and 10 tribal nations.

The project was a complete renovation that removed all mechanical and electrical components of the original building but reused nearly all of the original structure. GSA and EPA worked to minimize environmental impacts during the renovation, with more than 75 percent of the construction and demolition waste diverted for recycling.

The building earned Leadership in Energy and Environmental Design (LEED®) version 2.2 Gold certification for New Construction (NC) from the U.S. Green Building Council (USGBC). EPA and GSA anticipate the building will receive an ENERGY STAR® label after a year of occupancy.

Timeless Architecture, Forward-Looking Design

The John W. McCormack POCH demonstrates that high-efficiency, sustainable building design can be successfully integrated into a sensitive historical setting. GSA and EPA have incorporated today's sustainable design principles into a comfortable, attractive, and efficient workplace that highlights architectural features and serves as a model for future historic preservation in government buildings.

Creative Reuse

The project reused 99 percent of the historical structure. It also preserved interior features such as historical paneling, walnut wainscoting, terrazzo floors with marble inlay, and oak parquet floors. The renovation modernized the plumbing and fixtures of the bathrooms throughout except for floor 15, which retained the historic fixtures, including marble partitions.



Photo: GSA

Transportation Choices

To encourage alternative modes of transportation, the building offers 50 bike racks and 10 showers, and two of the 32 parking spaces under the building are reserved for fuel-efficient vehicles. It is located within two blocks of several station entrances to Boston's subway system, the Massachusetts Bay Transportation Authority ("T").



The Human Element

The project's Indoor Air Quality Plan protected workers during construction by mandating air filtering and the use of low- or non-volatile organic compound paint. To ensure occupant safety, dedicated exhaust fans in the janitor closets and copier machine rooms vent potentially harmful fumes directly outside.

Maintenance crews use environmentally preferable, biobased green cleaning supplies and practice integrated pest management. Approximately 70 percent of the occupied space receives natural light, making the McCormack POCH a more pleasant place to work.

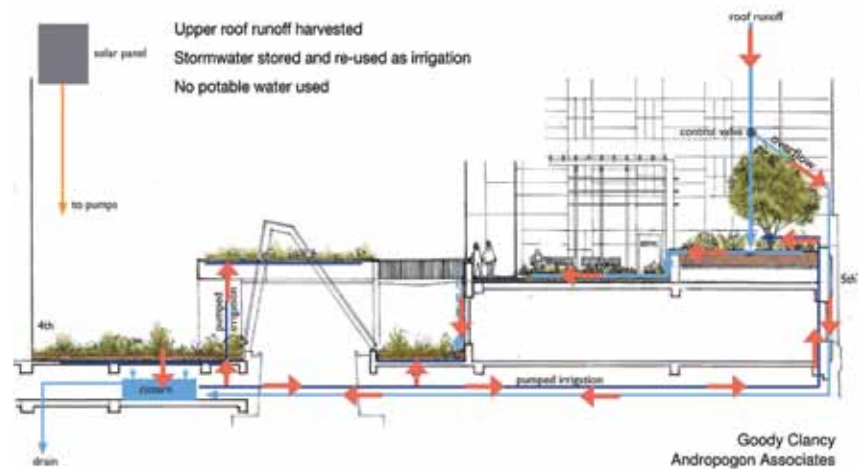


An educational touch-screen kiosk and walking tours are available to the public, and signage throughout the building describes its environmental features.

Water Efficiency

High-efficiency urinals, faucets, and showers and dual-flush toilets help reduce the amount of water consumed by building occupants. The building is projected to use approximately 32 percent less water than a similar office building with standard plumbing fixtures. Cisterns capture stormwater runoff, which a solar-powered pump transports to irrigate the green roof when needed.

Schematic of Green Roof



Energy Efficiency

EPA New England's office is expected to perform at least 17 percent better in terms of total energy cost compared with the baseline performance rating per American Society of Heating, Refrigerating, and Air-Conditioning Engineers Standard 90.1-2004.

EPA and GSA included energy-saving measures such as insulation behind the building skin and occupancy sensors that turn lights off when offices are unoccupied. Daylight dimming in perimeter spaces and ceilings designed to allow deep penetration of daylight further reduce the need for energy to power lights. High-efficiency, historically appropriate windows reduce interior heating and cooling while maintaining the building's visual appeal.

Through an Agencywide purchase of renewable energy certificates, EPA buys enough green power to offset 100 percent of its electricity used in the McCormack POCH.

Up on the Roof

A green roof that covers the 4th and 5th floor roofs and is accessible from the 5th floor insulates the building, cutting down on energy use and costs. Native and drought-resistant plants filter bacteria and other pollutants from stormwater runoff and provide a pleasant garden for building occupants. Vegetated roofs also minimize the urban heat island effect—urban and suburban temperatures that are 2° to 10° F warmer than nearby rural areas because of the heat retention properties of urban materials.



Image courtesy of U.S. EPA Region 1 GIS

FINAL LEED® SCORECARD FOR THE JOHN W. MCCORMACK POST OFFICE AND COURTHOUSE, BOSTON, MASSACHUSETTS

Certification Earned: LEED-NC 2.2 Gold

The LEED Scorecard provides an itemized account of the specific green building criteria met through the design and renovation of the McCormack POCH. Based on these criteria, the facility earned 43 of 69 possible points and achieved LEED for New Construction Version 2.2 Gold certification.

43	Points Documented	Points Available:	69
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11	Sustainable Sites	Possible Points:	14
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Yes	Prerequisite 1	Construction Activity Pollution Prevention	
1	Credit 1	Site Selection	1
1	Credit 2	Development Density & Community Connectivity	1
1	Credit 3	Brownfield Redevelopment	1
1	Credit 4.1	Alternative Transportation: Public Transportation Access	1
1	Credit 4.2	Alternative Transportation: Bicycle Storage & Changing Rooms	1
1	Credit 4.3	Alternative Transportation: Low-Emitting & Fuel Efficient Vehicles	1
	Credit 4.4	Alternative Transportation: Parking Capacity	1
1	Credit 5.1	Site Development: Protect or Restore Habitat	1
1	Credit 5.2	Site Development: Maximize Open Space	1
	Credit 6.1	Stormwater Management: Quantity Control	1
	Credit 6.2	Stormwater Management: Quality Control	1
1	Credit 7.1	Heat Island Effect: Non-Roof	1
1	Credit 7.2	Heat Island Effect: Roof	1
1	Credit 8	Light Pollution Reduction	1

4	Water Efficiency	Possible Points:	5
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2	Credit 1.1-1.2	Water Efficient Landscaping	2
	Credit 2	Innovative Wastewater Technologies	1
2	Credit 3.1-3.2	Water Use Reduction	2

7	Energy & Atmosphere	Possible Points:	17
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Yes	Prerequisite 1	Fundamental Commissioning of the Building Energy Systems	
Yes	Prerequisite 2	Minimum Energy Performance	
Yes	Prerequisite 3	Fundamental Refrigerant Management	
4	Credit 1	Optimize Energy Performance	10
	Credit 2	Onsite Renewable Energy	3
1	Credit 3	Enhanced Commissioning	1
1	Credit 4	Enhanced Refrigerant Management	1
	Credit 5	Measurement & Verification	1
1	Credit 6	Green Power	1

CREDIT SUMMARY

43	Points Earned	Points Attempted:	43
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6	Materials & Resources	Possible Points:	13
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Yes	Prerequisite 1	Storage & Collection of Recyclables	
2	Credit 1.1-1.2	Building Reuse	2
	Credit 1.3	Building Reuse, Non-Structural	1
2	Credit 2.1-2.2	Construction Waste Management	2
	Credit 3	Resource Reuse	2
1	Credit 4	Recycled Content	2
1	Credit 5	Regional Materials	2
	Credit 6	Rapidly Renewable Materials	1
	Credit 7	Certified Wood	1

10	Indoor Environmental Quality	Possible Points:	15
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Yes	Prerequisite 1	Minimum IAQ Performance	
Yes	Prerequisite 2	Environmental Tobacco Smoke (ETS) Control	
	Credit 1	Outdoor Air Delivery Monitoring	1
	Credit 2	Increased Ventilation	1
1	Credit 3.1	Construction IAQ Management Plan: During Construction	1
1	Credit 3.2	Construction IAQ Management Plan: Before Occupancy	1
1	Credit 4.1	Low-Emitting Materials: Adhesives & Sealants	1
1	Credit 4.2	Low-Emitting Materials: Paints & Coatings	1
1	Credit 4.3	Low-Emitting Materials: Carpet Systems	1
	Credit 4.4	Low-Emitting Materials: Composite Wood & Agrifiber	1
1	Credit 5	Indoor Chemical & Pollutant Source Control	1
1	Credit 6.1	Controllability of Systems: Lighting	1
	Credit 6.2	Controllability of Systems: Thermal Comfort	1
1	Credit 7.1	Thermal Comfort: Design	1
1	Credit 7.2	Thermal Comfort: Verification	1
	Credit 8.1	Daylighting & Views: Daylight 75% of Spaces	1
1	Credit 8.2	Daylighting & Views: Views for 90% of Spaces	1

5	Innovation & Design Process	Possible Points:	5
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1	Credit 1.1	Innovation in Design	1
1	Credit 1.2	Innovation in Design	1
1	Credit 1.3	Innovation in Design	1
1	Credit 1.4	Innovation in Design	1
1	Credit 2	LEED Accredited Professional	1

For more information on the USGBC's LEED® Green Building Program, visit <www.usgbc.org/LEED>.

For more information on the McCormack POCH, please visit <www.epa.gov/greeningepa/facilities/boston-hq.htm> and <www.gsa.gov/historicbuildings>.

United States Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460
EPA-200-F-10-001
April 2010

Acknowledgments

Assistance and information from Goody Clancy and Associates, Inc., and GSA.

Cover inset photos courtesy of GSA.