Roux Center for the Environment | Bowdoin College

Bowdoin College’s first LEED Platinum certified building, the 30,000 square foot Roux Center combines teaching, research and scholarship at a new edge of the campus environment.

Engineering Intelligent Labs
A mix of ductless and ducted fume hoods reduces the energy profile from that of a typical lab. The energy use intensity is 44.8kBTU/sf/year. A 27kW photovoltaic array offsets over 11% of annual electric costs.

Hi/Lo Teaching Landscapes
An experimental, research-based vegetated roof and stormwater swale/grology garden at grade were both developed in collaboration with Bowdoin faculty and students.

Purposeful Gathering
A prominent lecture stair encourages active circulation and gathering and collects an wide audience around the study of the environment.

Transparent Environment
Teaching, research and scholarship on display through strategic use of glazing inside and outside the building. Straightforward materials reveal building systems and construction.

CambridgeSeven

Project Team:
Principal in Charge Timothy D. Mansfield, AIA
Project Architect Chris Maskopf, AIA
Architect Justin Crane, AIA
Designer Sydnor Scholer

Client: Bowdoin College
 MEP & Fire Protection Engineer: Arup
 Structural Engineer: Becker Structural Engineers
 Landscape Architect: Stephen Stimson Associates
 Civil Engineer: Sebago Technics
 Building Envelope: Simpson Gumpertz & Heger
 Code Consultant: Jensen Hughes
 Sustainability: Thornton Tomasetti
 Contractor: Peter Warren Construction Group
 Specifications: Kalin Associates
This 10,000-square foot building is Babson’s newest and most innovative academic center, built to foster transdisciplinary educational experiences for students from Babson, Olin, and Wellesley Colleges. The stunning building envelope required tight coordination across multiple trades to execute. Windover facilitated the intricate high-performance MEP/HVAC infrastructure, including moveable fixtures, high power loads, and complex ductwork connections, by implementing 3D BIM coordination and prefabrication of selected elements. Set within a wooded landscape, the industrial-looking Foundry has abundant natural light, wood canopies, a custom energy recovery unit, and a “living roof” that supports the college’s sustainability commitment. The project has achieved 34.5% energy savings, 39.4% energy cost savings, 26% potable water use reduction, and is one of the first LEED v4 projects to perform a Whole Building Life-Cycle Assessment demonstrating a 10.2% reduction in greenhouse gasses.
The Amherst College New Science Center is a high intensity laboratory with one of the lowest energy footprints of its typology. The building employs several strategies contributing to energy efficiency including a high performance envelope, abundant natural light, low-energy HVAC chilled beams, fan-coil distribution systems, optimized fume hood control strategies, demand control ventilation including laboratory spaces, high performance heat recovery with indirect evaporative cooling, and freezer heat recovery for domestic hot water. Indirect-direct evaporative cooling reduces the heating and cooling needed for the ventilation system to reduce peak loads in the laboratories. High performance triple-pane glazing, curtainwall and façade systems implement thermal breaks. Opaque, natural ventilation panels were used in the faculty offices to provide natural ventilation while maintaining thermal integrity of the triple-pane windows. The Commons' roof monitors integrate architectural and mechanical elements that provide an overall comfort conditioning solution: chilled beams, radiant slabs, acoustic baffles and a photovoltaic array to generate onsite power.
A new restaurant building and park is situated along Grand River Avenue leading into the center of downtown Detroit. The urban revitalization project and new public space is being created to anchor the emerging neighborhood, spur economic development and provide a quality urban environment for the community to be active in the city's resurging and vibrant downtown. Central to its modern geometry are strong cantilevered roof forms gesturing towards the historic Detroit G.A.R. building and the park’s elliptical lawn, along with a grand stair leading to a roof deck on axis with the historic Detroit Book Tower Building. Connections to the park landscape are further enhanced through a green roof and folding glass walls that provide flexible programming for indoor/outdoor experiences such as restaurant seating, markets, musical performance and community meeting spaces.

OTC Client
Lumen at Beacon Park

Lead Architect
Touloukian Touloukian Inc.

Restaurant Owner
Lumen Detroit

Architect
Touloukian Touloukian Inc.

Landscape Architect
LivingLab

Structural Engineer
Studio NYL

MEP & FP
Peter Basso Associates Inc.

Prime Contractor
Tooles / Roncelli

LEED Consultant
Resilient Building Group

Furnishings, Fixtures and Select Finishes
Studio NYL

Recognitions
2018 IIDA New England Design Awards
Best in Show

2018 AIA New England Design Awards
Honor Award

2018 BSA Hospitality Design Award

2018 BSA Honor Award for Design Excellence

2018 Design Core Detroit
Green Roofs Design Award (for Rooftop Canteen)

2018 AIA Detroit Architectural Honor Award

2017 Green Roofs Design Award
The Design Awards

LEED Silver – 56 / 110
Sustainable Sites 20.0%
Regional Materials +20.0%
Innovation in Design 4/10
Water Efficiency 3/4
Indoor Quality 7/14
Materials & Resources 4/10
Regional Priority 3/6
Regional Material Certified Wood 100.0%
Regional Material +20.0%

Green Power 25.5%
Optimize Energy Performance 18.0%
Source Weather Data 22.0%
Water Use Reduction 7.5%
Site Habitat Restoration 22.0%
This project is tracking to be certified as LEED Platinum for Homes Pilot Program and is currently finalizing verifications. It will be the first LEED for Homes Platinum high-rise student apartments in Boston. This building is achieving an energy cost savings of 22% compared to ASHRAE 90.1-2007.

Summary:
Designing sustainable living spaces is crucial to providing a healthy, comfortable, and socially responsible environment for students to thrive in. LightView has been designed and built using construction industry best-practices for sustainability and measured by the LEED for Homes Mid-Rise rating system. The project site is located on the southeastern edge of the Northeastern University campus and is an ideal location for pedestrian and transit-oriented student housing. The building includes commercial space, student related community amenities and services at the ground floor, and 207 modern student apartments (798 beds) housed in an assemblage of components: a low-rise portion of eight stories on Columbus Avenue, a mid-rise portion of 16 stories on Coventry Street, and a high-rise portion of 20 stories in the middle of the block on Burke Street. The mid-rise and high-rise are connected by a glazed narrow bridge, which create transparency through these two component parts.

Site:
This is an infill site where building design approach required sensitivity to the existing historical scale of Columbus Avenue as a critical campus street. Inserting a high rise into this neighborhood fabric required a unique approach, resulting in what appears to be three separate structures that create layers of scale, respecting the edge of Columbus at a human scale, and allowing for a section of the building to rise 20 floors. The site is surrounded by an outstanding amount of community resources and transportation options to strengthen the student’s connection with the surrounding community. A key function of the design intent is when standing on north campus looking at the Boston skyline, the vertical towers are elements that students can use to navigate campus.

Wellness:
The building amenities and units were carefully designed to provide students with a healthy, interactive and exciting living environment that supports both academic growth, and contributes to their well-being and sense of place on campus. This is their home, and their neighborhood. Laundry and study facilities are integrated with recreation areas, casual lounges and access to fitness, music and a rich variety of social spaces. Compartmentalization, low VOC flooring, and advanced filtration were used to ensure high indoor environmental quality.

Energy:
This building is achieving an energy cost savings of 22% compared to ASHRAE 90.1-2007. Energy efficient features include: High performance building enclosure with Air Barrier and Low U Factor windows, low-albedo roof, Energy Star appliances, High efficiency LED lighting and room occupancy sensors throughout. Upon moving in, each student is given a one hour tour of the sustainable features of the building.

Water:
Water efficiency features include: High efficiency low-water laundry machines and low-flow water fixtures – showerheads, lavatory faucets, and toilets.

LEED
This project is tracking to be certified as LEED Platinum for Homes Mid-rise Program and is currently finalizing verifications. It will be the first LEED for Homes Platinum high-rise student apartments in Boston.

Sustainable Project Facts:
• Public Transportation Access
• Bike Storage for +17% of residents
• Access to Open Space
• Reduced Heat Island Effect: Roof
• Very High Density Development (345 units/acre)
• Water Use Reduction
• Optimized Energy Performance
• Superior Location - Infill Site
• Outstanding Community Resources
• Bicycle Storage for >15% of residents
• Energy Star appliances
• High-efficacy LED lighting and room occupancy sensors throughout.

Every residential apartment unit has wall-mounted bike storage for a capacity totaling 550 bikes (74 percent of building residents). Additionally, the Project will have a common secured resident bike storage room at the ground floor for 44 bikes that will include a self-service bicycle repair station. There will be another 48 bike spaces for building visitors and retail customers distributed around the site.

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For Homes

Certified: Silver: 35.0
Gold: 80.0
LeED for Homes Mid-rise Project Checklist

Adjusted Certification Thresholds

Certification Level
Prelim: Final:
# of Units: 81.5
211
Prelim: Final: 211
# of stories: 22
Avg. Home Size Adjustment: 81.5
LEED for Homes Mid-rise Project Checklist

Certified: 35.0
Silver: 50.0
Gold: 80.0

LightView at Northeastern University
744 Columbus Ave. Boston, MA 02120
Gensler is transforming this 1980s building into a premiere office experience on one of America’s oldest urban landscapes. With a full facade renovation and an 18-story addition, this structure will become a beacon in the bustling heart of Boston.

The upgraded design will be clad in a state of the art, unitized curtainwall. Triple glazed with high performance coatings, this feature will be paired with an active chilled beam MEP system to make this building one of the highest environmentally performing properties of its kind in Boston.

The repositioning is targeting LEED Gold V4 and will include air and water side economizers for winter time free cooling, 95% efficient gas-fired boilers with hot water heat available for tenant use, and a high-efficiency chiller plant with chilled water available for tenant cooling at the core.

**SUSTAINABILITY**

**Low Embodied Carbon**

Minimizes environmental impact over the existing structure preserved. Adoptive re-use. Optimize energy performance. LEED v4-Gold target

**EUI**

Baseline 48.7 kBtu/sf

**LPD**

Baseline 41 kBtu/sf

**BEFORE**

**AFTER**

**PROJECT TEAM**

**Artist**

Gensler

**MEP/FP Engineer**

NV5

**Structural Engineer**

LeMessurier Consultants

**Environmental Consultant**

Paladino and Company