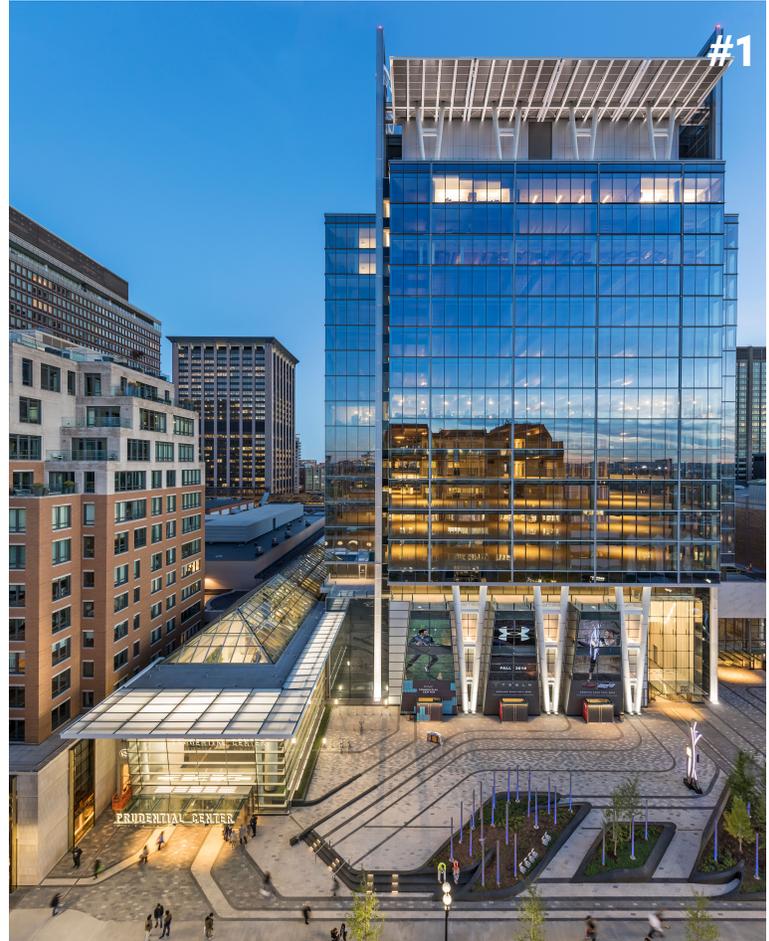


# BOSTON'S MOST SUSTAINABLE BUILDING 888 BOYLSTON STREET

Located at the Prudential Center in Boston, Massachusetts, **888 BOYLSTON STREET** is a 17-story mixed-use building of approximately 425,000 square feet. The project consists of a three-story retail base, a 14-story office tower and two levels of subgrade parking. Focusing on “High Performance Design from the Inside Out,” 888 Boylston promotes health, productivity and a superior user experience.

## PROJECT HIGHLIGHTS

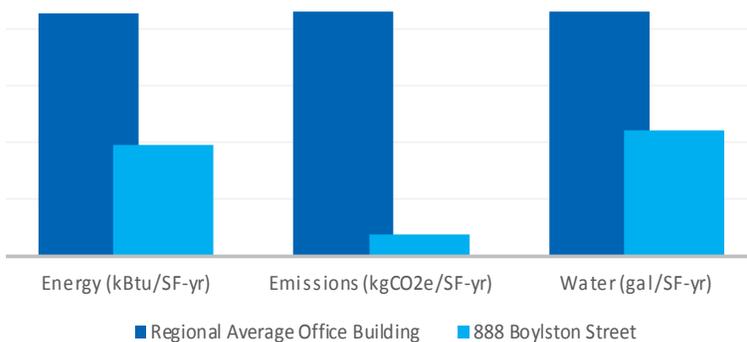
- A dedicated outdoor air system (DOAS) uses 100% fresh air, instead of recirculated air, to over-ventilate spaces via active chilled beams without a prohibitive energy penalty.
- 100% LED fixtures provide optimal lighting while reducing energy costs.
- 13'-6" clear heights on the north façade create a “visual zone” that is 145% larger than a typical office building, thereby allowing more natural light into the interior space.
- Rainwater harvesting collects water from the roof for irrigation and cooling tower makeup, providing 20% of the total water consumed by the building.
- High and low roofs enhance solar panel positioning and production.
- Living walls and a green roof provide connections with nature and support a healthier urban ecosystem.



## A LIVING LABORATORY

888 Boylston Street is not the largest or tallest building in Boston, but it is a giant in terms of sustainability. The project is certified LEED Platinum under the United States Green Building Council (USGBC) LEED for Core and Shell 2009 Edition. As long term owners invested in sustainable operations, BXP uses the building as a living laboratory and has hosted over 40 educational tours for students, universities, NGOs and the general public.

## 888 Boylston Street Performance vs. Regional Average Office



## MEASUREMENT AND VERIFICATION

BXP has been measuring and verifying the building's energy performance using an array of submeters to compare modeled performance to actual performance over time. Through 12 months of stabilized occupancy and the measurement and verification process, the 888 Boylston office space achieved a site energy use intensity of 39 kBtu/SF, **which is 54% below the Boston regional Class A office average.**

The high performance design and green power procurement strategies have reduced operational carbon intensity 92%; and, low flow fixtures combined with the rainwater harvesting system have cut water use 46% versus a regional average office.

## PROJECT TEAM

Developer: Boston Properties

Architect: FXCollaborative

Contractor: Turner Construction

MEP Engineer: BuroHappold Engineering

Civil/Transportation Engineer: VHB

Landscape Architect: Mikyong Kim Design



# FLANSBURGH

J.F.K. Elementary School & Holbrook Middle-High School

Project Team: Kent Kovacs, Principal-in-Charge

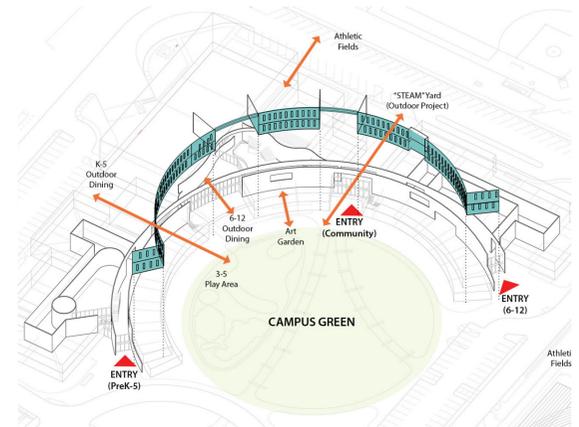
Holbrook, MA



Project Information	
Size	217,350 square feet
Cost	\$79.7 million
Photographer	Robert Benson

### Project Description

J.F.K. Elementary School and Holbrook Middle-High School together serve 1,095 students grades pre-kindergarten through 12 in a new building that is 217,353 gsf on two floors. This consolidates all three existing aged schools in the town into a single building with separate entries and spaces for the Elementary School and the Middle-High School. The combined school building was built in a single phase, thereby reducing disruption to students during construction, resolving the issue of three antiquated schools, and satisfying 21st century learning goals. Program elements include two cafeterias, a 320-seat auditorium, two larger gymnasiums, general classrooms, teacher development spaces, two media centers, and science labs that conform to 21st-century education standards. Also included are dedicated art, music, band, computer labs, special education spaces, and a STEAM commons to enhance the learning process by thinking creatively.



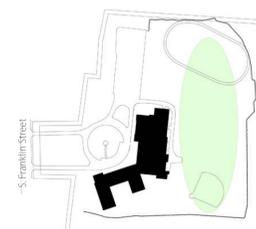
### Sustainability Considerations

The project has been certified LEED Gold and boasts a 35% savings of water usage and 34% energy savings over baseline. In addition, the Town of Holbrook took the step of voting a permanent protection of 7.6 acres of Town-owned land adjacent to the school site for habitat preservation and restoration.

The integration of building and site planning with community and ecological sustainability was the cornerstone of the design of the Holbrook K-12 school. This environmentally progressive program started with the selection of a central location with good public transportation access and connection to community amenities. From there the program developed significant elements that benefit both community and environment, such as a bike-friendly campus plan coordinated with a Massachusetts Safe Routes to School program partnership, and a significant commitment to the preservation of the local watershed and wetlands habitat.

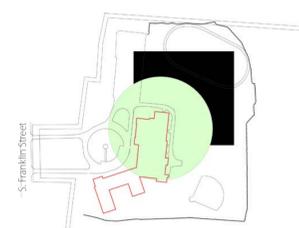
As a part of the project, the town governing bodies took the step to voting a permanent protection of 7.6 acres of land adjacent to the school site for habitat preservation and restoration. The focus on the importance of water naturally extends to a storm-water quality design, treating runoff water from over 86% of suspended solids from 90% of average annual rainfall events. And within the building, fixture efficiency saves over 35% more water than the LEED baseline.

Energy efficient design is also a major sustainable attribute of the design, achieving predicted energy savings of over 34% better than ASHRAE 90.1 standard, while monitoring of outdoor air and commitment to low-VOC finishes ensures high indoor air quality for a healthy building.



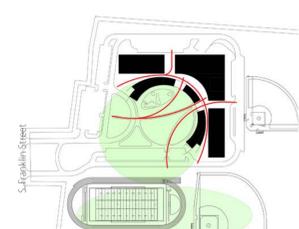
#### Existing building in front:

The existing school building is positioned near the front of the site directly off of South Franklin Street with the playing fields and green space at the back of the site.



#### New building at rear of site:

The new building is positioned outside the existing school's footprint to the north. A new town park and play fields are highly visible encouraging use and accessed directly off of South Franklin Street.



#### Massing strategy:

Given the large scale and density of the new compact school, a two-story circulation spine unifies the three main building wings consisting of the Lower School, Student Commons, and Upper School. This massing strategy gives the perception that the school is much smaller because circulation spine masks the larger volumes beyond.



### Recognition (2018)

North American Copper in Architecture Award || Learning by Design Awards of Excellence Honorable Mention || American School & University Architectural Portfolio Citation

# Phillips Academy Andover, Snyder Center

Andover, Massachusetts

**Completion Date:** 2018

**Sustainability:** LEED Platinum®

**Awards:** Citation, AIA New England, 2018

The Snyder Center is one of the most progressive buildings of its kind. By designing a series of unique spaces that reimaged the 21st century athletic center, the open and inclusive solution is comprised of a series of interlocking, transparent, and inviting student activity spaces. The result is a high-performance facility that acts not only as an athletic facility, but as a Student Center and hub for student activity. In fact, the Snyder Center is the first in the country to combine the array of program elements and be designed as a net-zero energy facility.



## Building Statistics

**Overall Square Footage:**

98,000 SF

**Indoor Track:**

4-lane 200 Meter Oval  
8-lane 60 Meter Straightaway  
Field Events

**Infield:**

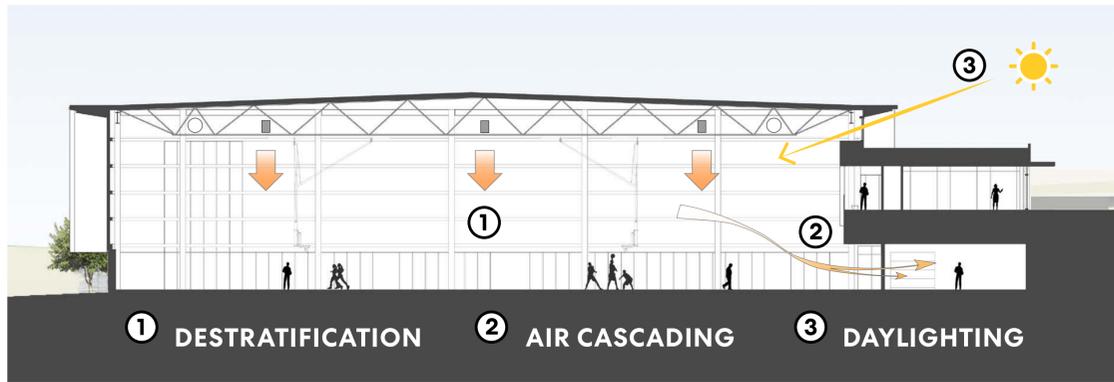
4 convertible basketball / tennis courts

**Multi-Purpose Rooms:**

Studio 1 – 2,000 SF  
Studio 2 – 1,400 SF

**Squash Center:**

(11) international singles courts  
(1) 3-glasswall Exhibition Court with seating



**Project Team**

- Perkins and Will
- Rist-Frost-Shumway
- Samiotes Consultants, Inc.
- LeMessurier
- Erland Construction, Inc.
- Reed Hilderbrand
- HLB Lighting
- Omloop
- Acentech



## Net-Zero Strategy

**1. Waste Heat → 50% Energy Efficiency Improvement**

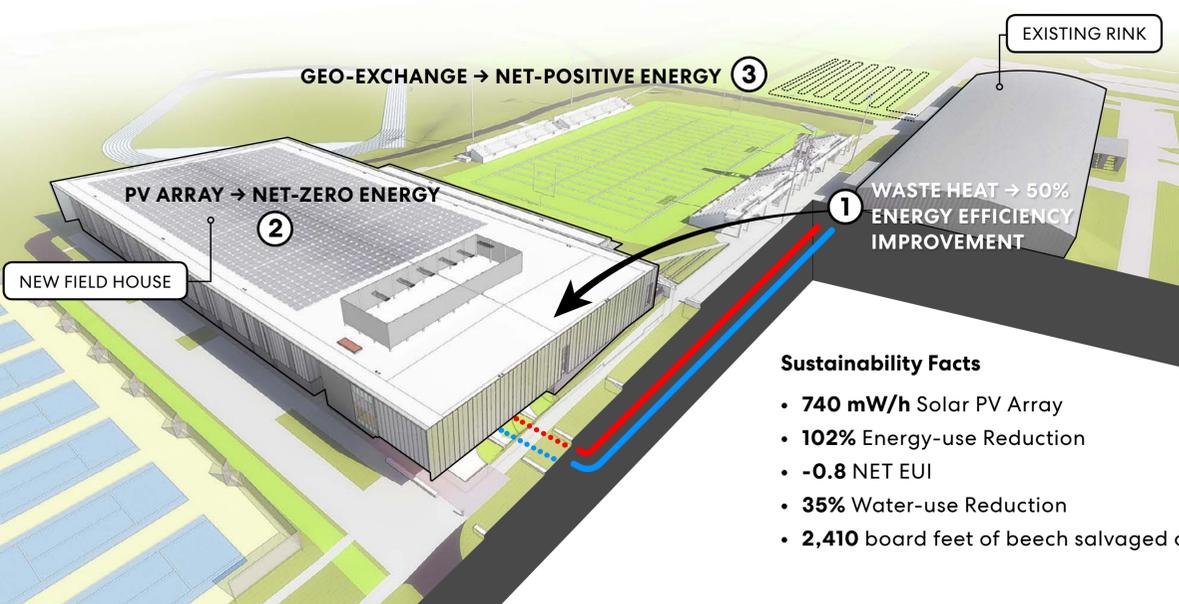
Combine Field House project with replacement of refrigeration system at adjacent ice rink (a need identified during master plan) to allow for re-use of waste heat from ice making process to serve the new building.

**2. PV Array → Net Zero Energy**

Optimize orientation of new Field House to maximize solar potential and daylighting, incorporate PV array on large roof of building to offset entire energy use and achieve Net-Zero energy for the project.

**3. Geo-Exchange → Net Positive Energy**

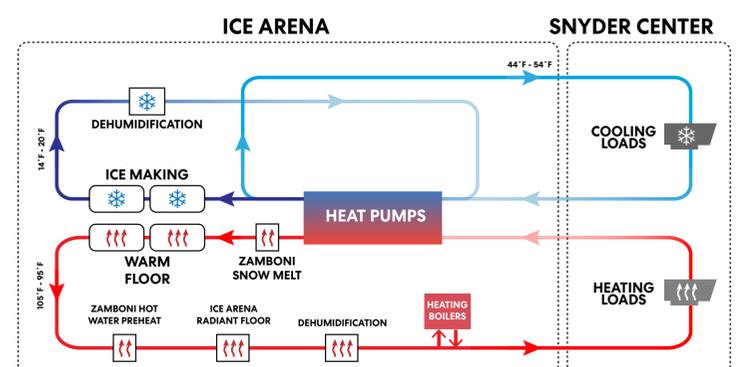
Pair geo-exchange well field with future playing field construction to improve efficiency of refrigeration plant at rink, resulting in an overall Net-Positive project.

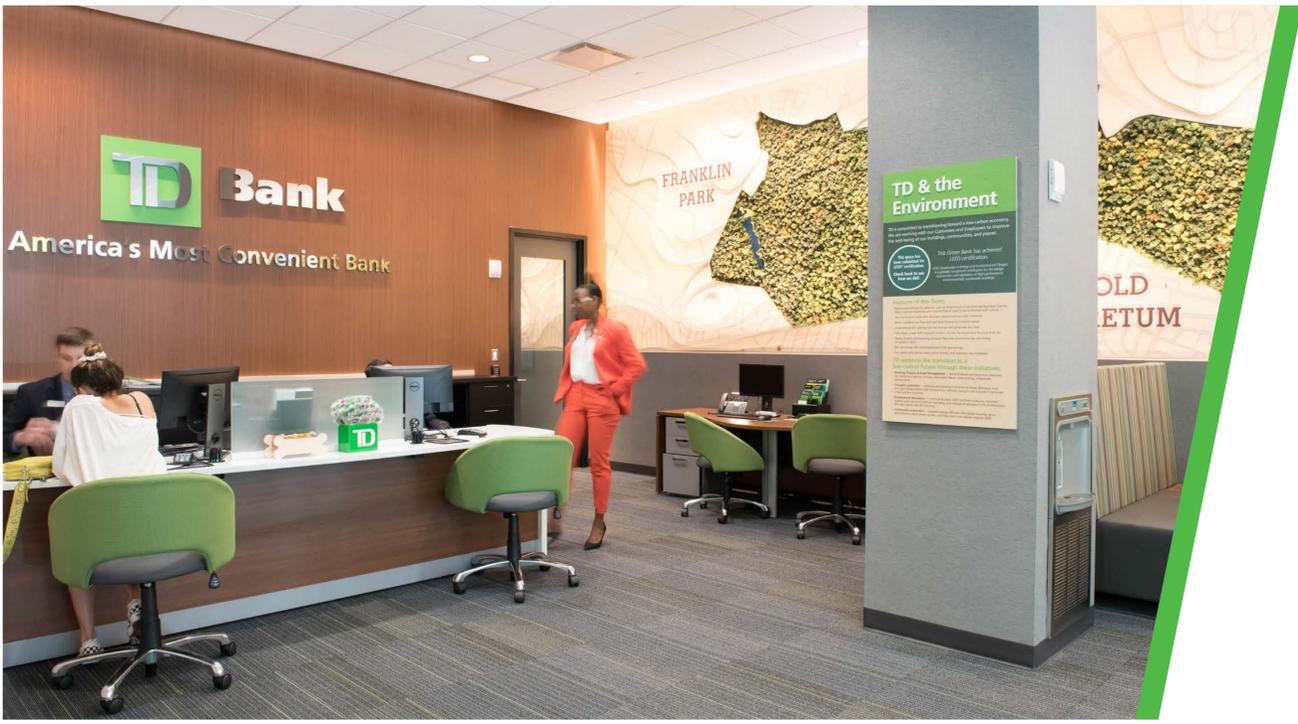


**Sustainability Facts**

- 740 mW/h Solar PV Array
- 102% Energy-use Reduction
- -0.8 NET EUI
- 35% Water-use Reduction
- 2,410 board feet of beech salvaged on site

## Waste Heat Recovery



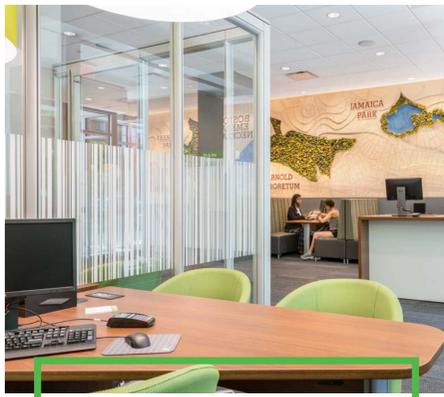


**TD Bank Fenway**  
1333 Boylston Street  
Boston, MA

**FEATURES**



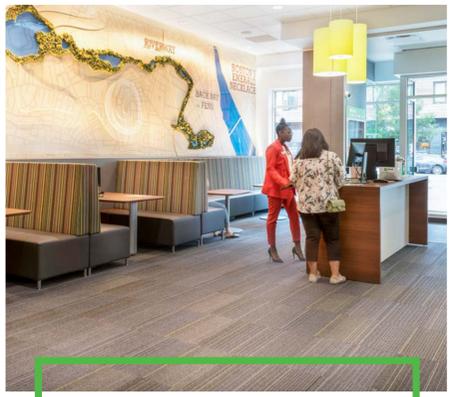
NATURE-BASED BIOPHILIC PATTERNS



SUSTAINABLE FURNITURE



ENERGY-EFFICIENT LED LIGHTING



ECO-FRIENDLY CARPET

Paints, finishes and cleaning products have low environmental and indoor air quality impact.

Low-flow and low-flush fixtures have been installed to conserve water.

Water refill station saves plastic bottles and helps customers stay hydrated.

Retail Smart Controls help monitor real-time building performance.

Fenway is **one of the first** TD retail locations designed to meet the **new LEED v4 standards**.

LEED® Facts	
LEED for Retail Pursuing LEED v4 certification	47*
Innovation	5 / 6
Water Efficiency	10 / 12
Location & Transportation	15 / 18
Energy and Atmosphere	12 / 38
Materials and Resources	3 / 14
Regional Priority	1 / 4
Indoor Environmental Quality	1 / 16

\*Out of a possible 110 points



**2019 Shop! Award Winner for Best Wall Treatment**

The feature wall, made from locally salvaged wood, depicts Boston's treasured Emerald Necklace.

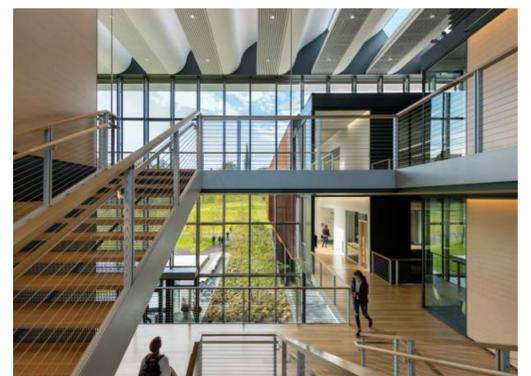
TD is also part of the "Community Grown" program, a three-year partnership with the City of Boston to expand the reach of their community gardens and bring people closer to nature.



# New Science Center

Amherst College | AIA COTE Top Ten Award

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.



**91 kBtu/SF**

**76%** REDUCTION IN ENERGY USE compared to the 2030 baseline

**73%** OF FLOOR AREA WITH direct views to the outdoors

**58%** SITE AREA supports vegetation

**58%** RAINWATER MANAGED from a two year, 24 hour storm event

**41%** PREDICTED REDUCTION IN INDOOR WATER USE compared to the LEED baseline

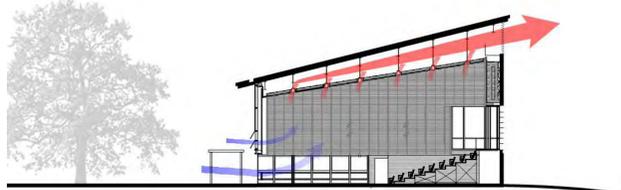
# BOSTON SYMPHONY ORCHESTRA LINDE CENTER FOR MUSIC AND LEARNING



The design of this music learning institute for the Tanglewood campus in Lenox, MA was guided by several overarching ideas:

## 1 Natural Ventilation as Openness

Although the Linde Center for Music and Learning is fully air-conditioned, during a Tanglewood season there are many days when being open to the outdoors is desirable. In fact, we see this openness to be an essential Tanglewood characteristic. Thus, the Linde Center is designed to be naturally ventilated, with large 50' wide operable walls, sliding doors, and actuator operated windows. This principle saves energy by maximizing the number of days that the air conditioning can be turned off.



This project includes a system for natural ventilation made of louvers and operable windows.

## 2 Sunshading for Energy Efficiency

Most glass in the building is facing either east or north, which are desirable solar orientations for energy efficiency. Large windows that face west are shaded by the large red oak, and southern windows in Studio E are shaded by horizontal metal sunshades on the exterior of the building.

## 3 Recyclable, Renewable and Local Materials

Materials such as western red cedar, metal roofing, even structural steel and concrete, were evaluated for their recycled content, sustainable harvesting policies, and local content.

## 4 Efficient Lighting and Mechanical Systems

The project uses low velocity ductwork (which has both acoustical and energy benefits by reducing static friction in the duct system), high efficiency HVAC systems including chillers and condensing boilers, and LED lighting – including performance lighting - which generates less heat and uses less energy.

## 5 Photovoltaic System

A 62.4 kW photovoltaic array on the flat roof portions of the project provides a renewable energy source to the building and can provide excess power to the grid when not needed by the facility.



## 6 Enhancement of the Tanglewood Tree Canopy

The project recognizes the impact across the Tanglewood campus of the mature tree canopy which provides shade to visitors and paving (reducing the heat island effect). The project includes a dramatic increase in tree canopy with new tree planting in and around the project but also to the south of Ozawa Hall.

## 7 Preservation of a Cherished Red Oak

A centerpiece of the project, the Red Oak at the top of the ridge will be preserved. The Linde Center buildings are held back beyond the drip line of the tree – plus an added amount to ensure the Red Oak will provide shade for gatherings for many years to come.

## LEED GOLD CERTIFIED

Site	11/26
Water	7/10
Energy	31/35
Materials	6/14
Indoor Environmental Quality	9/15
Innovation in Design	4/6
TOTAL	70 of 110

**64.1%** reduction in electricity use compared to the applicable ASHRAE 90.1 Appendix G baseline

**39.8%** reduction in indoor water use using efficient plumbing fixtures compared to EPA baseline.

**78%** of construction waste diverted from landfill

**100%** of irrigation water is supplied by a stormwater retention basin located just northeast of the site.

## DESIGN TEAM:

- Architect:** William Rawn Associates
- Sustainability:** The Green Engineer
- Landscape:** Reed Hilderbrand LLC
- MEP:** R.G. Vanderweil Engineers
- Acoustics:** Kirkegaard Associates
- Theater:** NextStage Design
- Structural:** LeMessurier Consultants
- Lighting:** LAM Partners
- Civil:** Foresight Land Services
- FF&E:** Stefura Associates
- Signage:** Roll Barresi & Associates
- Food Service:** Lisa May Foodservice Design LLC
- Construction Manager:** Consigli Construction Company
- Owner's Project manager:** Skanska USA Building Inc.



WILLIAM RAWN ASSOCIATES  
Architects, Inc.

ARROW STREET  
ARCHITECTURE & DESIGN

# King Open / Cambridge Street Upper Schools & Community Complex

NET ZERO EMISSIONS / LEED V4 SCHOOLS PLATINUM (PENDING)

This project sets a new standard for school design and high-performing buildings. Completed in August 2019, it is designed as the first Net Zero Emissions school in Massachusetts and was the pilot for the City of Cambridge's Net Zero Action Plan. The 270,000 sf building includes an elementary school, middle school, school district administration, preschool, public library, public pool, and parking garage. The building massing recreates the civic amenity that was historically on the site and restores the green open spaces. The building was designed to push the envelope on net zero, occupant wellness, site impact, water, and resilience.

It is a new building type combining schools with a mix of diverse community programs into one complex whose integration allows the building to excel in all ten AIA Design Excellence measures. Of note are its positive impacts on local community, equity, and climate change vulnerabilities.

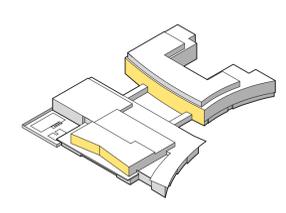
25 pEUI

72% energy reduction over 2030 baseline

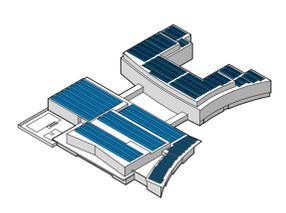
190 geothermal wells

1,300 MWh PV

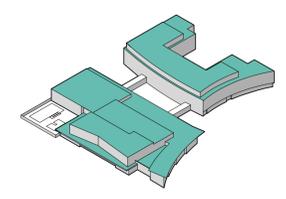
Red List Free Materials



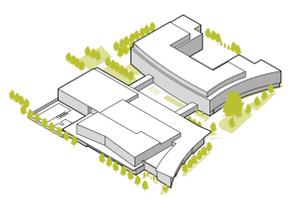
FACADE MOUNTED PV



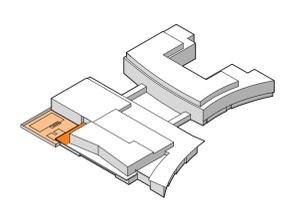
ROOF MOUNTED PV



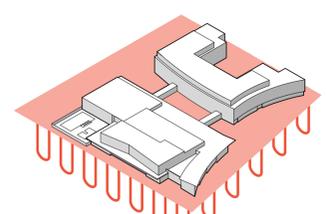
RAINWATER HARVESTING



INCREASED VEGETATION & NATIVE PLANTS



SOLAR THERMAL



GEO THERMAL HEATING & COOLING



# AUBURN COURT – NEW CONSTRUCTION

3 BROOKLINE PLACE | CAMBRIDGE, MASSACHUSETTS



## PROJECT TEAM:

### DEVELOPER/OWNER

AUBURN COURT LLC C/O HRI

### ARCHITECT

DAVIS SQUARE ARCHITECTS, INC.

### CONTRACTOR

NEI GENERAL CONTRACTING

### MECHANICAL ENGINEER

BLW ENGINEERS, INC.

### CIVIL ENGINEER

DEVELLIS ZREIN, INC.

### LANDSCAPE ARCHITECT

KIMBERLY MERCURIO LANDSCAPE ARCHITECTURE

### LEED CONSULTANT

NEW ECOLOGY, INC.

### SOLAR/THERMAL CONSULTANT

NEW ENGLAND SOLAR HOT WATER

## BASIC FEATURES:

- All-electric utilities (no gas/oil)
- Highly insulated and tight building envelope with a continuous air barrier
- White roof to reduce heat-island effect

### HIGH-EFFICIENCY HEATING & COOLING EQUIPMENT

- Solar hot water system
- Energy-efficient boilers
- Central energy recovery ventilation
- Mini-split air-source heat pumps

### HEALTHY INDOOR ENVIRONMENT

- Maximized natural daylighting and cross ventilation
- ENERGY STAR®-certified light fixtures and appliances
- Low-flow shower heads and toilets, and aerators
- Resilient flooring (no carpet)
- Prioritized durable and sustainable materials
- No/low VOC levels for all paints, adhesives, and sealants
- Non-smoking building



LEED FOR HOMES MID-RISE PLATINUM-CERTIFIED  
ENERGY STAR®-CERTIFIED  
ACTIVE DESIGN CERTIFIED



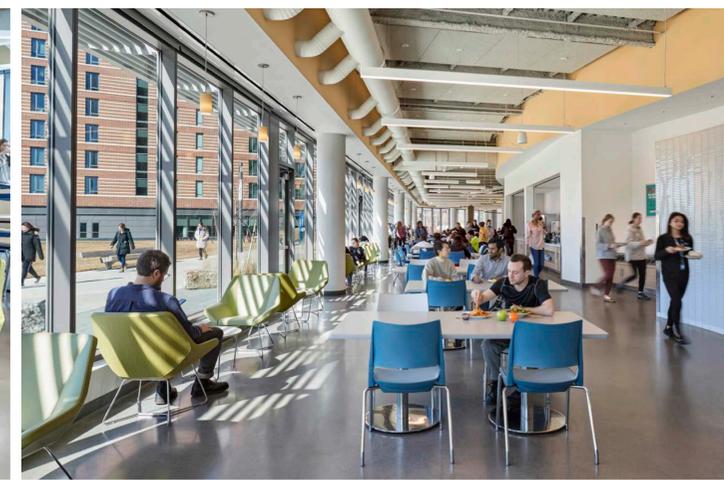
### TRANSIT & COMMUNITY RESOURCES

- Transit-oriented design, near several subway and bus stops
- Walkable community with nearby amenities
- Secure bike storage and bike infrastructure
- No new vehicular parking added
- Recaptured infill urban site

### RESIDENT HEALTH & QUALITY OF LIFE

- Design incorporates Active Design Verified guidelines
- Non-elevated building, attractive staircase used to increase movement
- Variety of greenspaces featuring local and natural plantings, as well as sculptural installations
- Free farmers' markets and wellness programming for Auburn Court residents

COMPLETED IN 2017



### Project Team

ARCHITECT  
**ELKUS MANFREDI ARCHITECTS**

CLIENT(S)  
 UNIVERSITY OF MA BUILDING AUTHORITY  
 AND UNIVERSITY OF MASSACHUSETTS BOSTON

DEVELOPER  
**CAPSTONE DEVELOPMENT PARTNERS**

DESIGN BUILDER  
**SHAWMUT DESIGN & CONSTRUCTION**

LANDSCAPE ARCHITECT  
**COPLEY WOLFF DESIGN GROUP**

GEOTECH ENGINEER  
**HALEY & ALDRICH**

CIVIL ENGINEER  
**NITSCH ENGINEERING**

MECHANICAL AND PLUMBING ENGINEER  
**WSP**

STRUCTURAL ENGINEER  
**MCNAMARA SALVIA**

ELECTRICAL ENGINEER  
**AHA ENGINEERING**

501C3 NONPROFIT OWNER  
**PROVIDENT COMMONWEALTH  
 EDUCATION RESOURCES GROUP**

COMMISSIONING  
**ICO ENERGY AND ENGINEERING**

SPECIFICATIONS WRITER  
**KALIN ASSOCIATES**

LIGHTING (DINING COMMONS)  
**HDLC**

### LEED Facts

For LEED NC v3 2009  
 Certification awarded January 2019

<b>GOLD</b>	<b>64</b>
<b>SUSTAINABLE SITES</b>	<b>21/26</b>
<b>WATER EFFICIENCY</b>	<b>6/10</b>
<b>ENERGY AND ATMOSPHERE</b>	<b>11/35</b>
<b>MATERIALS AND RESOURCES</b>	<b>7/14</b>
<b>INDOOR ENVIRONMENTAL QUALITY</b>	<b>11/15</b>
<b>INNOVATION IN DESIGN</b>	<b>5/6</b>
<b>REGIONAL PRIORITY CREDITS</b>	<b>3/3</b>

# University of Massachusetts Boston Student Residence Hall and Dining Commons

Boston, Massachusetts

The first-ever student housing at UMass Boston achieves LEED Gold with a progressive array of healthy living strategies, including an active pedestrian walkway and live/learn spaces.

### Architectural Features

Two buildings comprise the 263,000-sf facility that rises seven, nine, and 12 stories tall. Together they frame a pedestrian walkway and define an important entry portal from public transportation into the heart of the campus. The promenade invites people to make connections with each other and the natural world in the outdoor café seating and landscaped seatwalls.

The welcoming environment continues inside with a 500-seat dining hall and a variety of flexible study and collaboration spaces open to all students. On the residential floors, 1,077 beds are arranged across multiple unit types and living arrangements at price points accessible to students from diverse socio-economic backgrounds. Every floor features common spaces with unrivaled views of Boston Harbor and the city skyline. The design also incorporates several campus-wide initiatives including composting, clothing recycling, and building-based energy conservation measures.

### Sustainability Features

#### SITE

- Convenient access to alternative transportation: MBTA, campus shuttles, BlueBikes, ZipCar
- A brownfield redevelopment
- Activates an important pedestrian gateway with gathering spaces inside and out
- Vegetated with drought-tolerant and native plantings
- 77% of hardscape is highly reflective to reduce heat-island effect

#### WATER

- No potable water used for irrigation
- 34% water savings with low flow showers, faucets, toilets, and urinals

#### ENERGY

- Two buildings average 23% energy cost savings through a high-performance envelope, energy recovery units, hot water efficiency, and 100% LED lighting. (Energy cost savings in the east building, which includes residential units and the dining facility, are 22% and 27% in the residential-only west building.)

- Enhanced commissioning used on project
- Refrigeration and HVACR systems selected to minimize or eliminate emissions of compounds that contribute to ozone depletion

#### MATERIALS

- Diverted 82% (1685 tons) of construction waste from landfill
- 30% of construction materials contain recycled content and were manufactured regionally
- 72% of wood products were sustainably harvested and FSC certified

#### HEALTH AND WELLNESS

- All interior finishes meet low emitting standards
- 100% of wood products do not contain added urea-formaldehyde
- 95% of spaces have views to the outside, including student rooms overlooking Boston Harbor
- Design supports students' wellbeing with equitable live/learn spaces open to all



# INSTITUTE FOR GLOBAL CITIZENSHIP

## MACALESTER COLLEGE | ST. PAUL, MN

The Institute for Global Citizenship at Macalester College in St. Paul, Minnesota was built to synergize its commitment to internationalism, multiculturalism, and service to society. The building houses administrative and faculty offices as well as community meeting space. It features an interior courtyard knitting the building together and providing an inspiring place for students, faculty, and community to contemplate and discuss their place in the new global society.

The stone exterior of the building echoes the universal and global traditions of load-bearing buildings, peeling away at the corner to create a welcoming entrance for everyone passing through the campus.



Completed: 2009  
 Area: 16,675 sf  
 LEED Platinum Certified



### SUSTAINABLE BUILDING FEATURES

- Building envelope: R70 roof and R40 walls
- Structure: massing concrete core acts as "thermal flywheel" to mitigate internal thermal loads
- HVAC: hydronic system of radiant ceiling panels, chilled sails, and heat recovery
- Extensive use of recycled, non-toxic and low-VOC materials
- Operable windows configured to optimize daylight
- Site: indigenous plants, extensive storm water management



**Bruner/Cott**  
 ARCHITECTS

### AWARDS

- 2013 Learning by Design Grand Award
- 2010 Environmental Design & Construction Excellence in Design Awards, Honorable Mention
- 2009 American School & University Post-Secondary Award
- 2009 ACUI Bulletin Architectural Portfolio Awards

### PROJECT TEAM

- |                                  |                     |
|----------------------------------|---------------------|
| Bruner/Cott Architects           | Architect           |
| McGough                          | General Contractor  |
| vanZelm Heywood & Shadford, Inc. | MEP/HVAC            |
| BKBM Engineers                   | Structural Engineer |
| Karges-Falconbridge, Inc.        | Commissioning       |
| Kalin Associates                 | Specifications      |
| Lighting Matters, Inc.           | Lighting            |
| Energysmiths                     | Sustainability      |
| Close Landscape Architecture     | Landscape           |
| Thompson & Lichter Co.           | Building Envelope   |
| Roof Spec, Inc.                  | Roof                |
| Richard Mandelkorn               | Photography         |



# Harvard ArtLab

Allston, Massachusetts



Harvard University's ArtLab, a cross-curriculum space for the arts, is located on the school's Allston campus in Boston. Its location along North Harvard Street links the University's historic and new campuses; its entrance faces Cambridge, and its one-story pinwheel configuration create outdoor public spaces that respond to the surrounding urban context. The building consists of a series of studios, workshops, and media spaces that surround a common hub space, which is able to accommodate performances and exhibitions, thus framing interactivity at its center. The surrounding units will provide recording studios, sound-editing stations, and spaces for rehearsal, improvisation, and informal performance.

The building relies entirely on electricity; no fossil fuels are supplied to the building, unique for Boston's climate zone of 5A. The anticipated energy use intensity (EUI) of the ArtLab is 34 kBtu/sf\*yr, one third the amount of energy as a typical arts education building. Energy conservation measures include: lighting power density of 0.5 W/sf, a high performing envelope, point of use water heaters, an air-source VRF heat pump system for heating and cooling, and high efficiency energy recovery ventilators that operate on a zone-by-zone demand-basis. Energy is produced on site through a roof mounted solar array with the goal of achieving Zero Net Energy, and the project predicts a 20% or greater reduction in potable water use.

## Project Team

Client | Harvard University

Architect of Record | Sasaki

Design Architect | Barkow Leibinger

Structural | RSE Associates and Werner Sobek

MEP/FP + Sustainability | Bard, Rao + Athanas Consulting Engineers

Landscape Architecture | Michael Boucher Landscape Architecture

Lighting | Lam Partners

AV, IT, Acoustics, Security | Acentech

Code | Howe Engineers

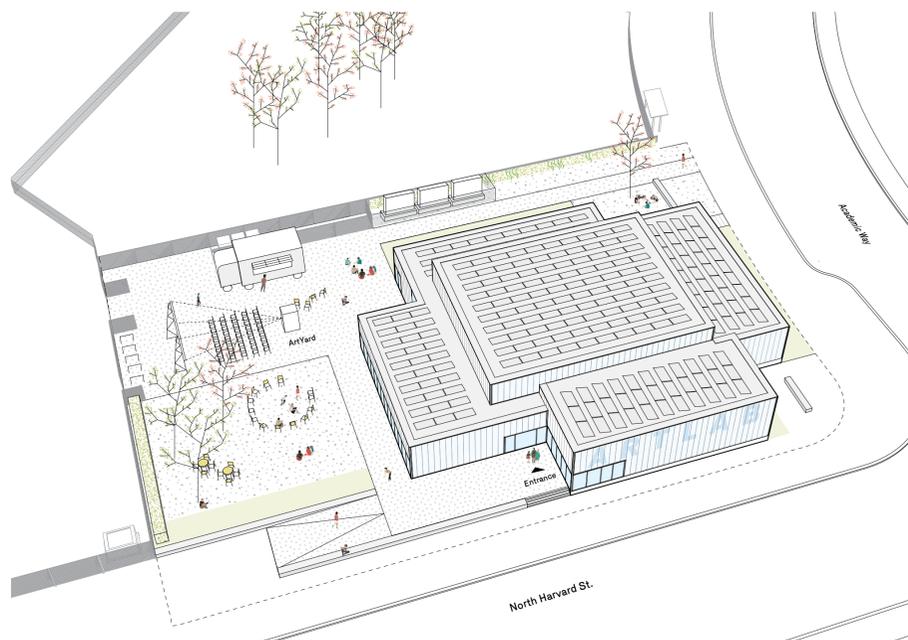
Cost | Daedalus Projects

Specifications | Long Green Specs

Envelope | Simpson Gumpertz & Heger

Photographer | Iwan Baan

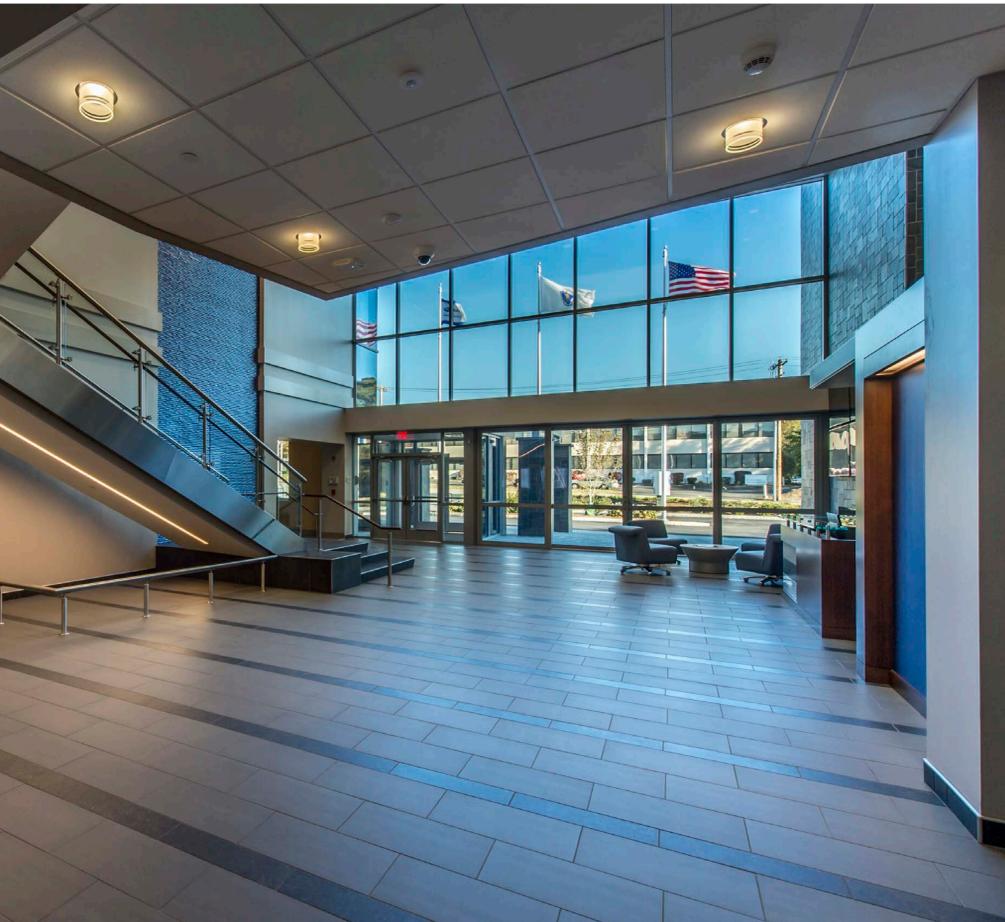
Graphics | Courtesy of Barkow Leibinger



# All **86** LEED credits were achieved



Whole building energy simulation was utilized to show a total energy cost **saving** of **41%**



HVAC system measures **40%** above code  
Water savings measures **30%** above code

## Subaru of New England Headquarters Norwood, Massachusetts, USA



### Significant Project Features

- LEED Platinum certified
- 45 foot rack storage warehouse
- 10,000 square feet training/conference center
- Data center with N+1 design
- Chilled beam HVAC systems
- 135 KVA PV array system generates clean energy for 16% of building's annual energy usage
- 2,000 KVA generator for standby power
- Chemical free water treatment system in HVAC system
- High volume circulation fans to circulate air within warehouse space
- Eco-friendly xeriscape landscaping saves water by using drought tolerant plants

### Architect

Gorman Richardson  
Lewis Architects

### Structural Engineer

RRC Engineering

### MEP/FP Engineer

WSP USA Buildings Inc.

### LEED Administrator

Columbia Construction Company

### Civil Engineer

United Consultants Inc.

### Energy Modeling & Consulting

WSP USA Buildings Inc.

### Solar Designer

Columbia Construction Company

