



## 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 kBTU/sf/year. A 27kW photovoltaic array offsets over 13% of annual electric costs.



### Hi/Lo Teaching Landscapes

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



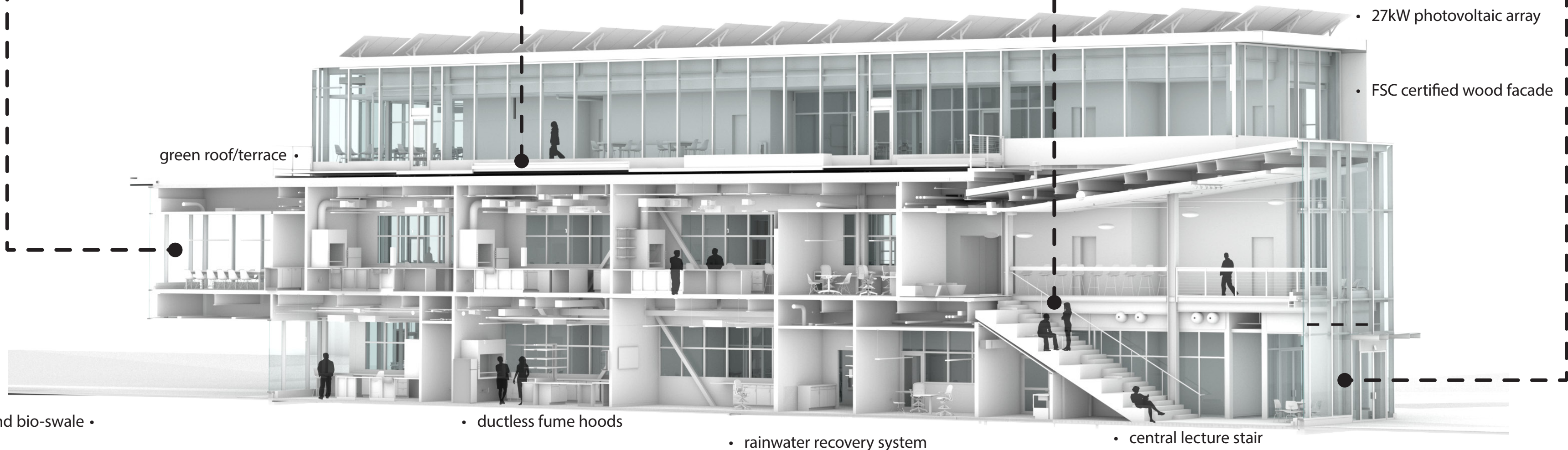
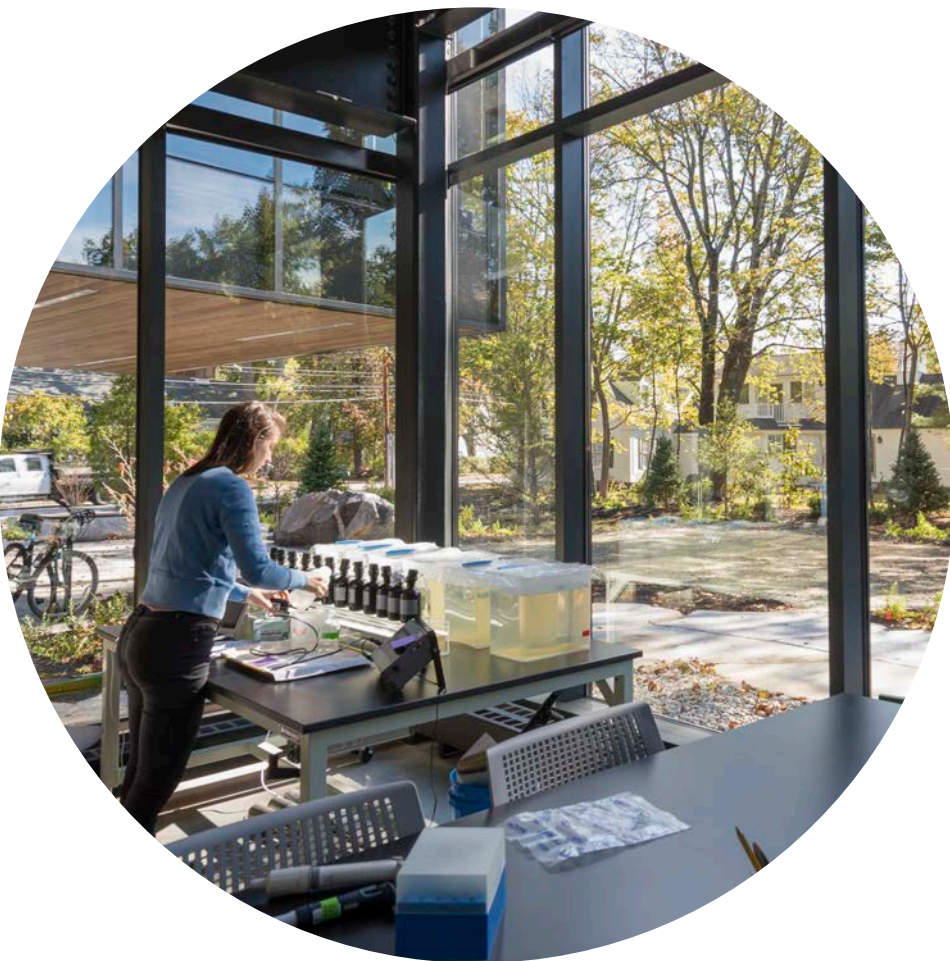
### Purposeful Gathering

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 Muskopf, 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



Thermally-modified poplar claddings provides an authentic, sustainable, and true-to-the-story of the building, related to the woods of Maine



Transparency enables a clearer engagement of teaching, research and scholarship



# WINDOVER CONSTRUCTION

WHERE TEAMWORK BUILDS RESULTS



## BABSON COLLEGE WEISSMAN FOUNDRY

Babson Park, MA

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.



### LEED Scorecard

LEED BD+C v4 for New Construction  
and Major Renovations

Targeting Silver 53

Integrative Process 1/1

Location and Transportation 2/16

Sustainable Sites 4/10

Water Efficiency 4/11

Energy & Atmosphere 21/33

Materials & Resources 8/16

Innovation In Design 5/6

Regional Priority Credits 1/4

Owner  
BABSON COLLEGE

Architect  
WILLIAM RAWN ASSOCIATES

Contractor  
WINDOVER CONSTRUCTION

Structural Engineer  
LEMESSURIER

Mechanical Engineer /  
Sustainability Consultant  
VANDERWEIL

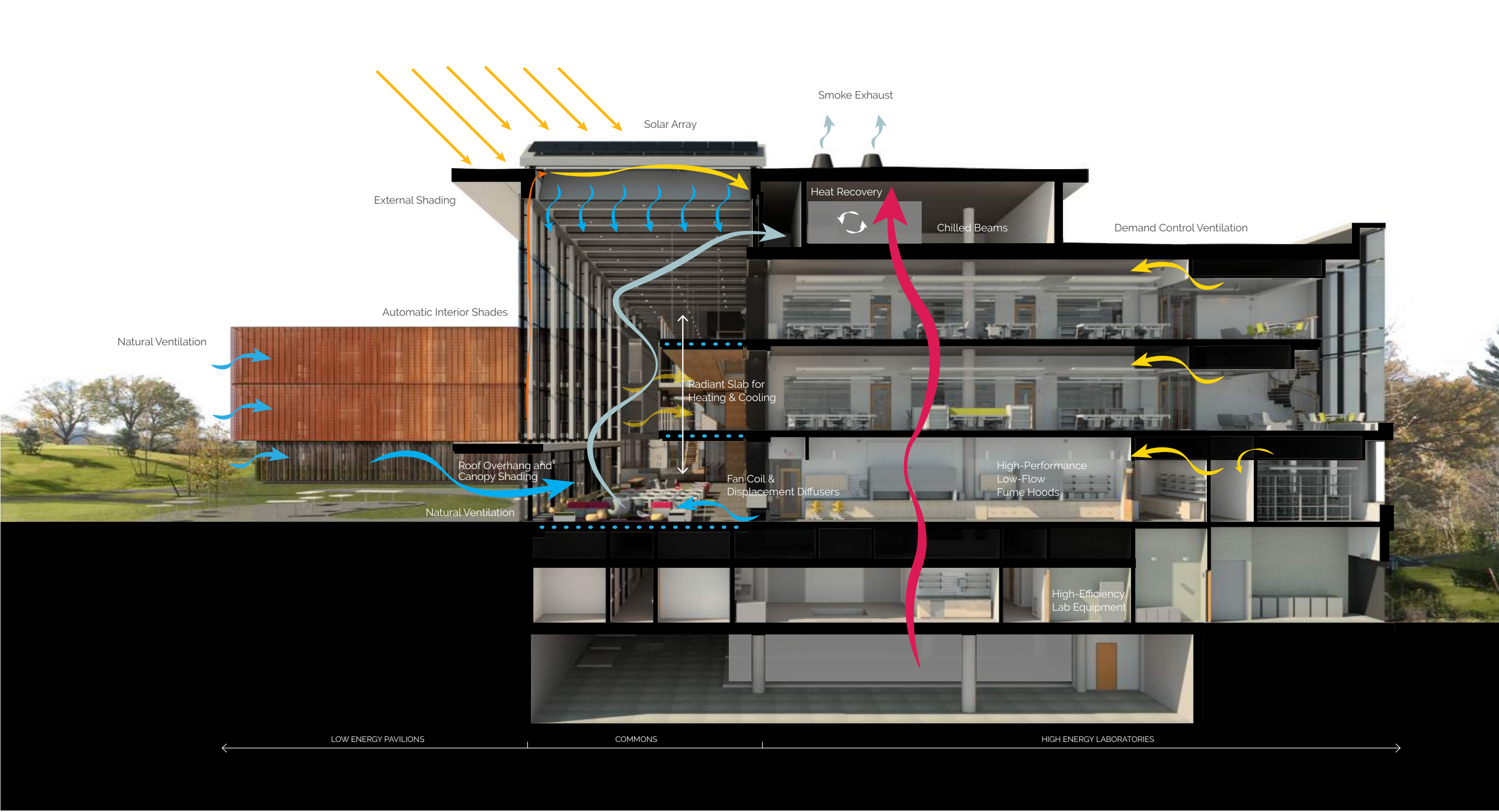




# New Science Center

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





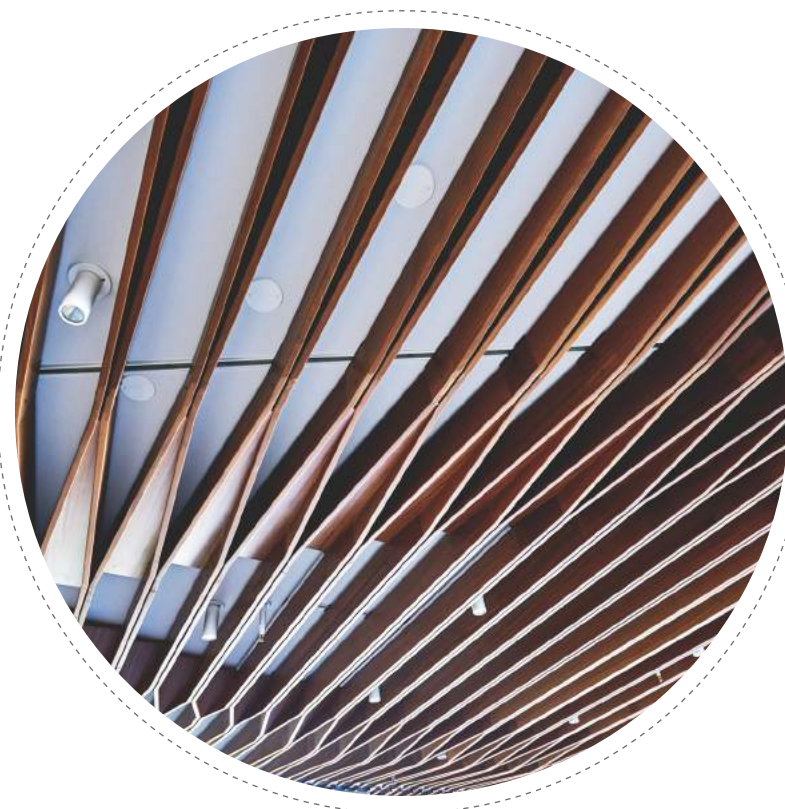
# LUMEN AT BEACON PARK

1903 W. Grand River Ave., Detroit, MI

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.

## Recognitions

- 2019 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 Commerce Design Detroit Award, Finalist
- 2018 AIA Detroit Architectural Honor Awards - Building Award
- 2018 American Architecture Award The Chicago Athenaeum
- 2018 Metal Architecture Design Award - Judges Award
- 2017 Green Good Design Award The Chicago Athenaeum



DTE client

Lumen Detroit restaurant owner

Touloukian Touloukian Inc. architect

livingLab landscape architect

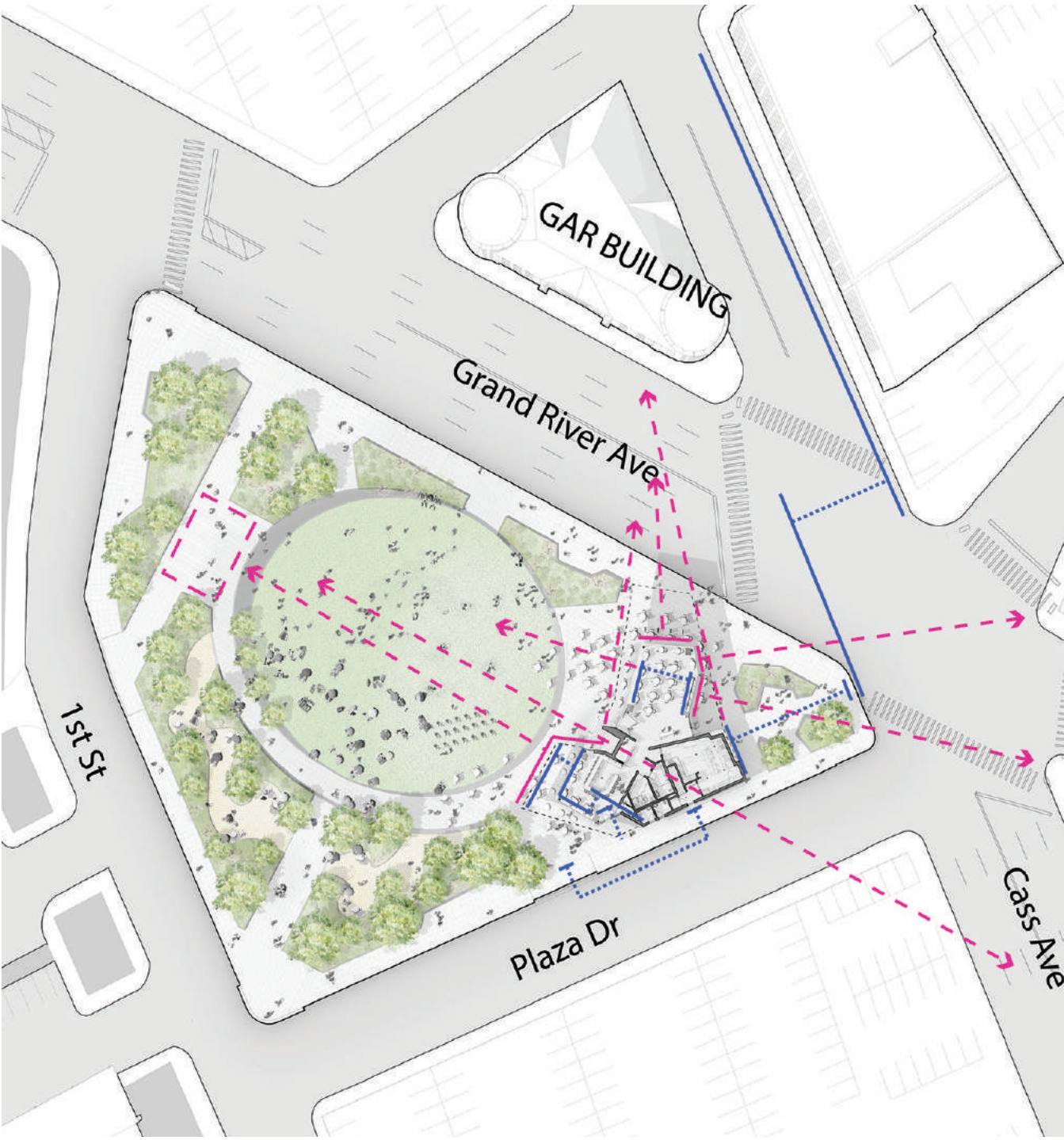
Studio NYL structural engineer

Peter Basso Associates Inc. MEP & FP

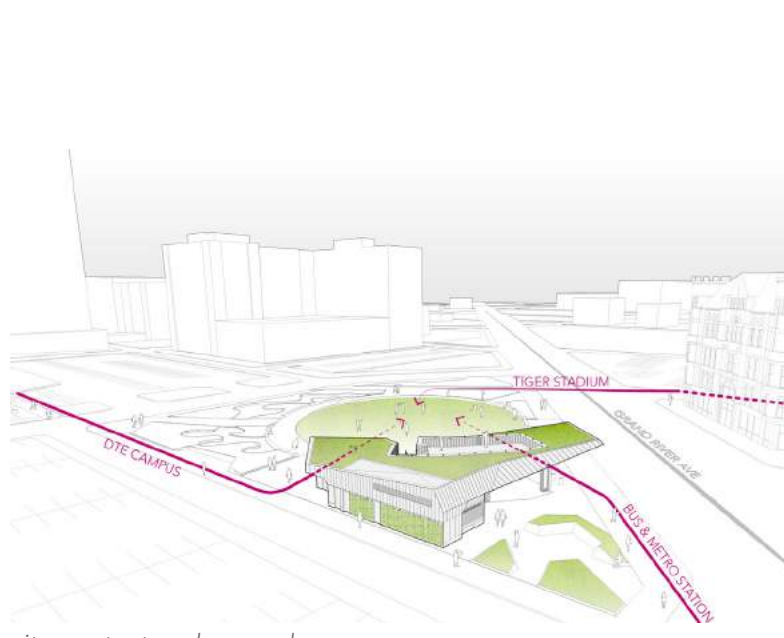
Tooles / Roncelli prime contractor

Resilient Building Group LEED consultant

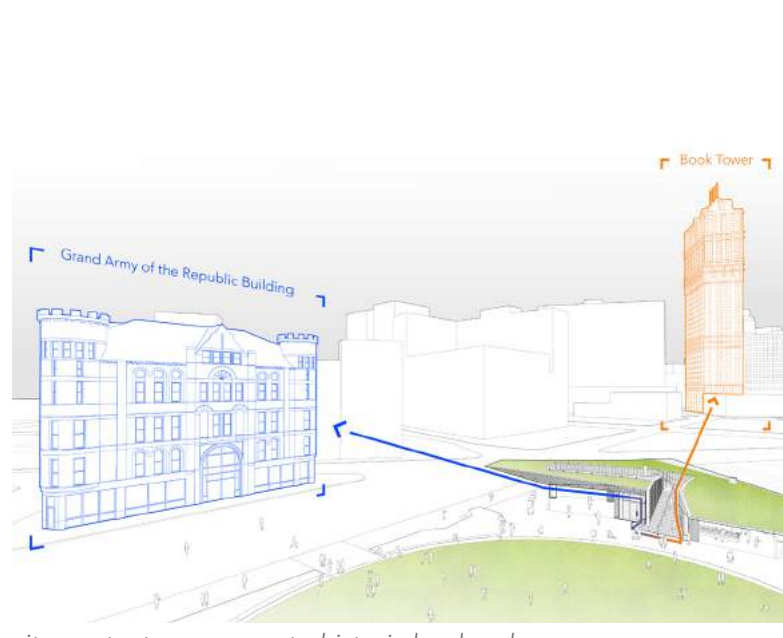
Saroki Architecture Furnishings, fixtures and select finishes



site plan with urban axes



site context - urban nodes



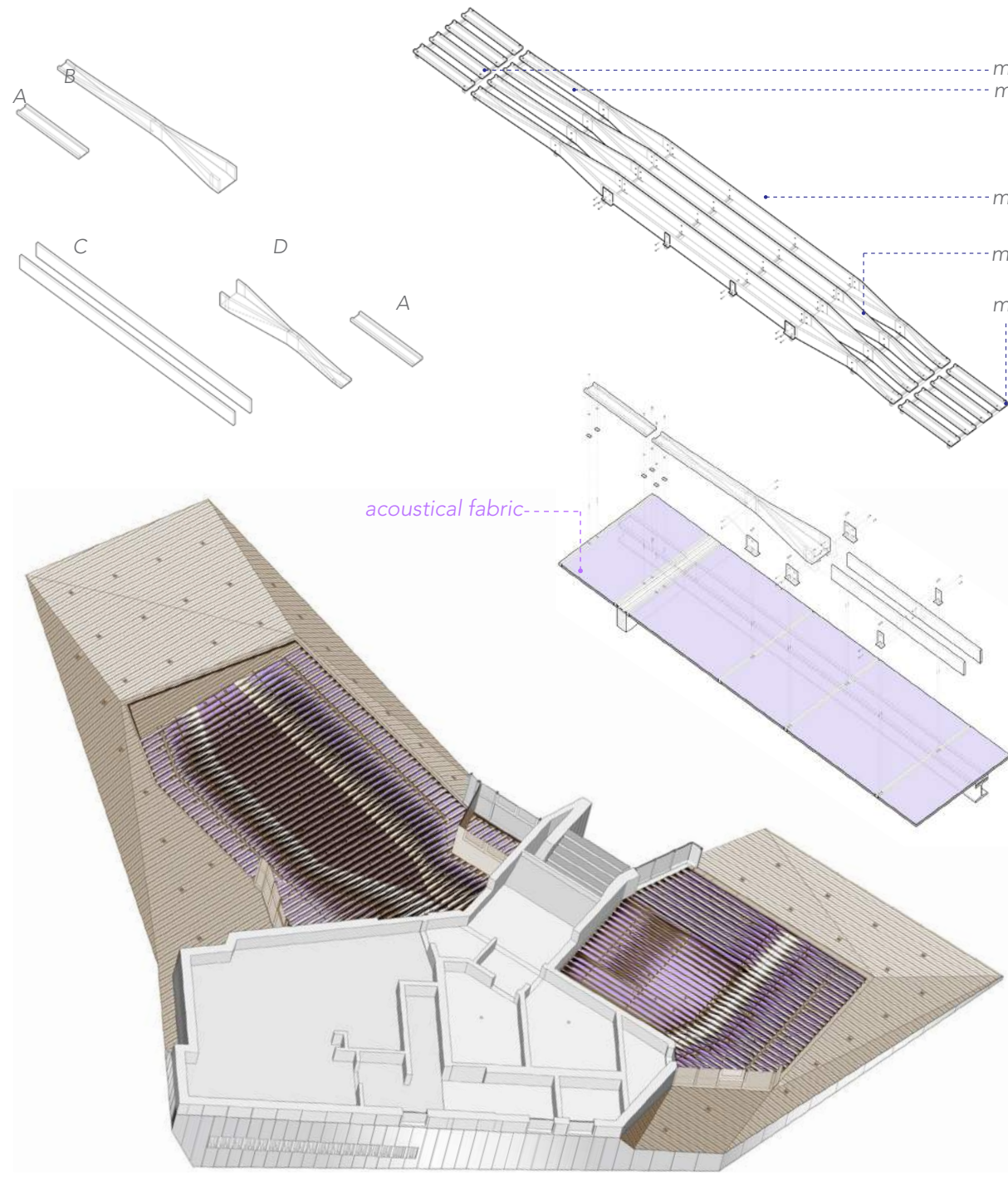
site context - response to historic landmarks



open air dining and bar



open air performance space



reflected ceiling axonometric

## LEED Silver - 56 / 110

- 20/26 sustainable sites
- 11/35 energy & atmosphere
- 8/15 indoor quality
- 7/14 materials & resources
- 4/10 water efficiency
- 3/4 regional priority
- 3/6 innovation

## Regional Material

+20.0% regional materials used

## Certified Wood

100.0% finish wood used is Forest Stewardship Council (FSC) certified

## Water Use Reduction

32.8% fixtures are low-flow

## Recycled Content

20.0% recycled content materials

## Optimize Energy Performance

18.4% energy saved above ASHRAE 90.1

## Green Power

35.0% energy consumed is from renewable sources

## Stormwater Quantity Control

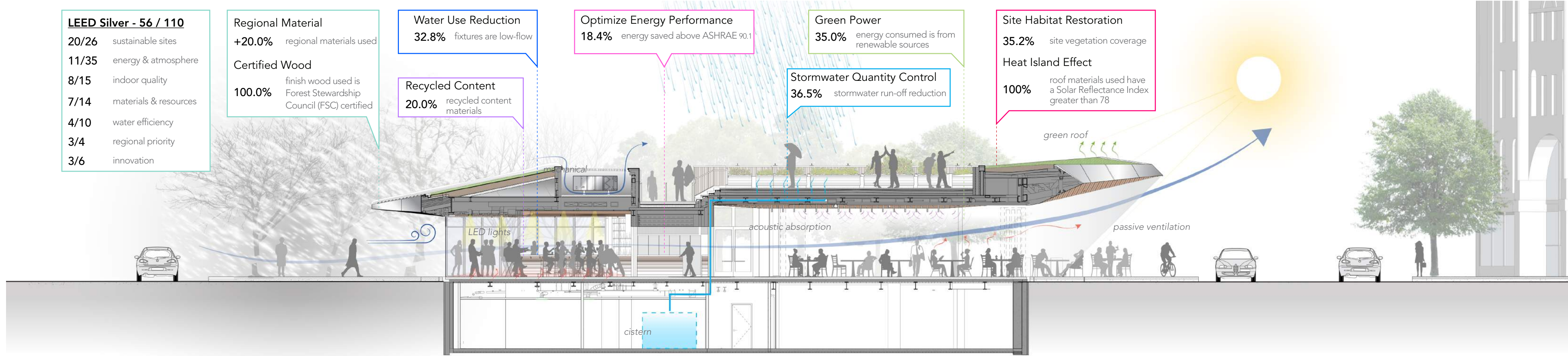
36.5% stormwater run-off reduction

## Site Habitat Restoration

35.2% site vegetation coverage

## Heat Island Effect

100% roof materials used have a Solar Reflectance Index greater than 78



sustainable building section









# LightView at Northeastern University

744 Columbus Ave. Boston, MA 02120

## 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 Ave 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.

Every residential apartment unit has wall-mounted bike storage for a capacity totaling 590 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.

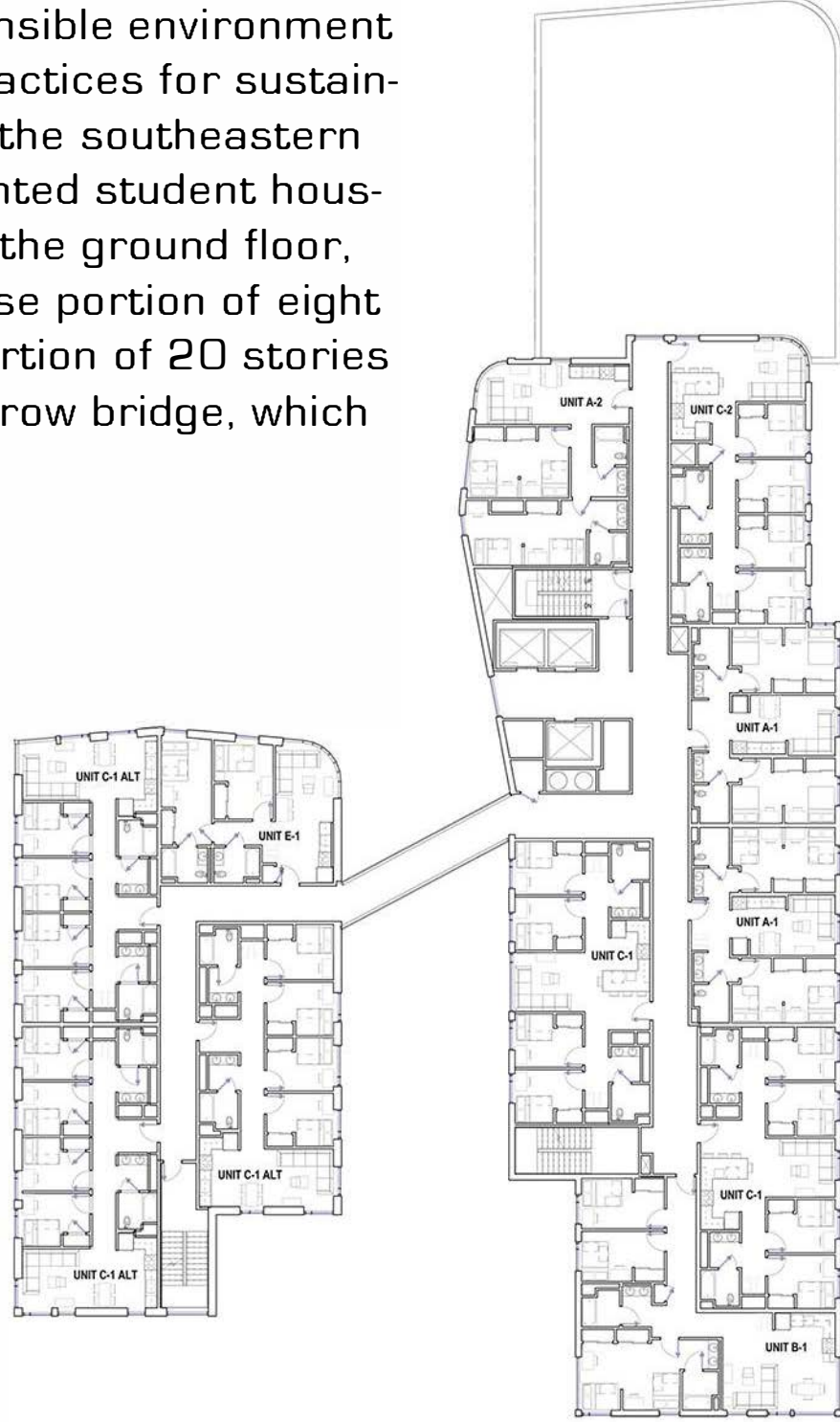
## Energy:

This building is achieving an every 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-efficacy 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.




### Project Team

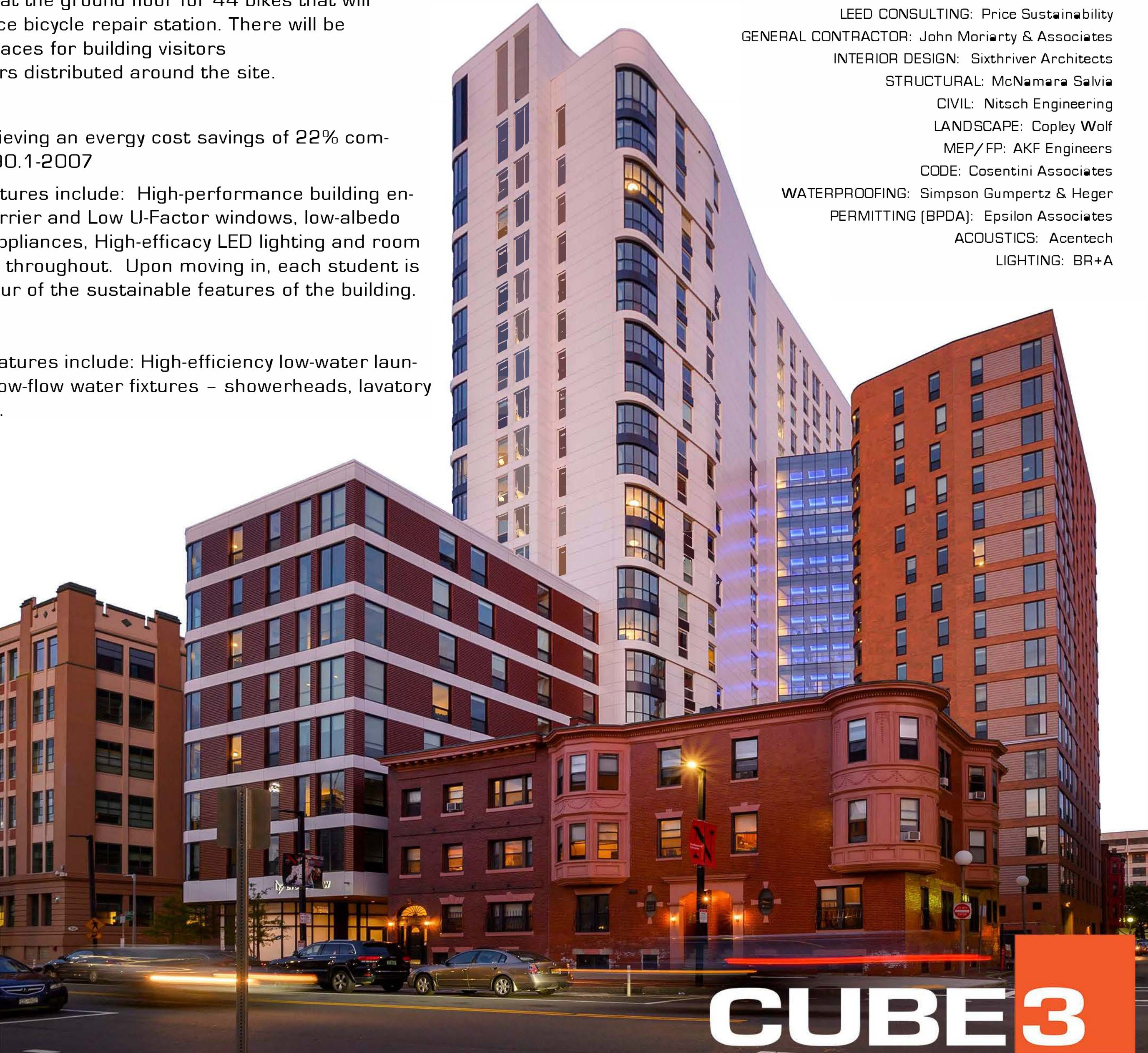
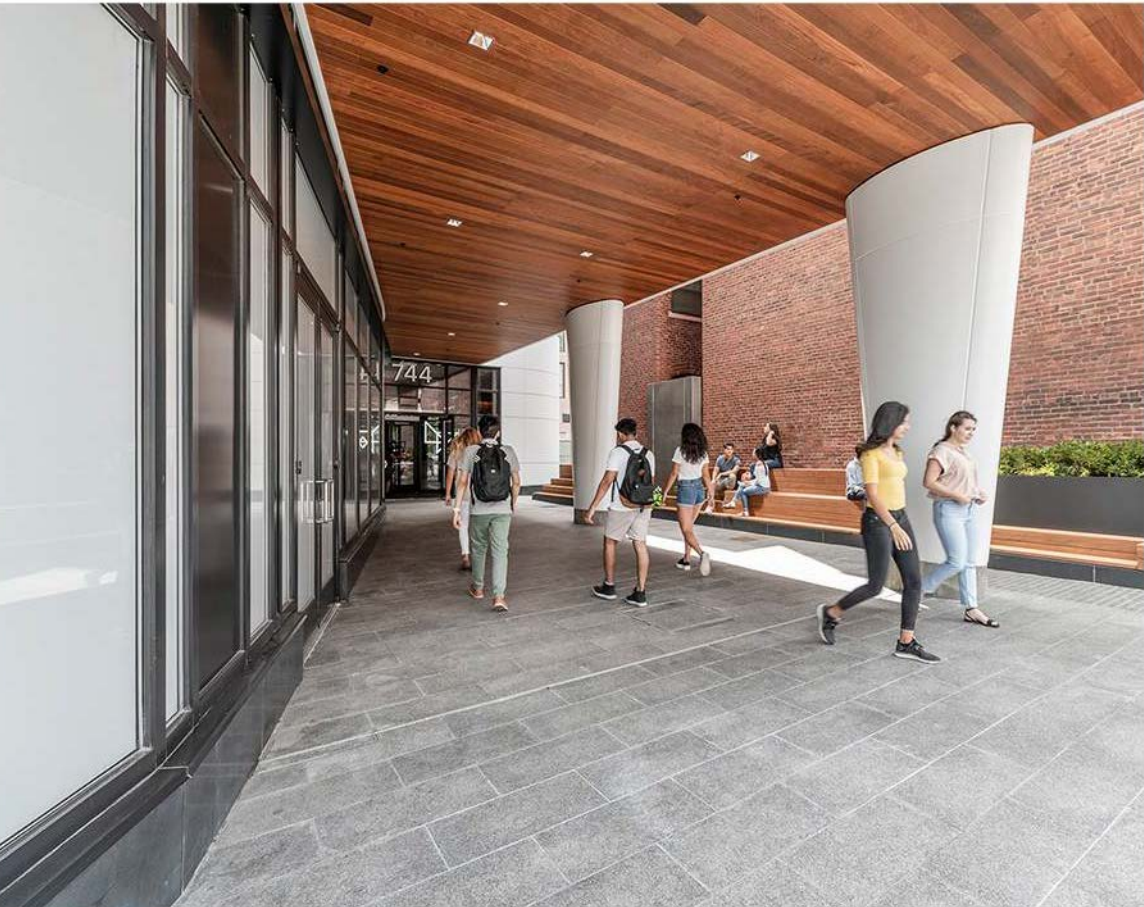
- OWNER: American Campus Communities
- ARCHITECT OF RECORD: CUBE 3 Studio
- DESIGN CONSULTANT: Elkus Manfredi
- LEED CONSULTING: Price Sustainability
- GENERAL CONTRACTOR: John Moriarty & Associates
- INTERIOR DESIGN: Sixthriver Architects
- STRUCTURAL: McNamara Salvia
- CIVIL: Nitsch Engineering
- LANDSCAPE: Copley Wolf
- MEP/FP: AKF Engineers
- CODE: Cosentini Associates
- WATERPROOFING: Simpson Gumpertz & Heger
- PERMITTING (BPDA): Epsilon Associates
- ACOUSTICS: Acentech
- LIGHTING: BR+A

## LEED

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.

- Sustainable Project Facts:
- Public Transportation Access
  - Bicycle Storage for >15% of residents
  - Preferred Location – Infill Site
  - Outstanding Community Resources
  - Access to Open Space
  - Reduced Heat Island Effect, Roof
  - Very High Density Development [345 units/acre]
  - Water Use Reduction
  - Optimized Energy Performance

		LEED for Homes Mid-rise Project Checklist	
Project Description		Adjusted Certification Thresholds	
Building Type: Mid-rise multi-family		# of stories: 22	
# of Units: 211		Avg. Home Size Adjustment: -10.0	
Project Point Total		Final Credit Category Point Totals	
Prelim: 81.5 + 11.5 maybe		ID: 5 SS: 22 EA: 11 EQ: 17	
Certification Level		LL: 9 WE: 8 MR: 6.5 AE: 3	
Prelim: Platinum		Final: Platinum	





One Post Office Square, Boston, MA  
1,200,000 sq ft

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.

EUI LPD  
33.8 0.82

## PROJECT TEAM

Architect	Gensler
MEP/FP Engineer	NV5
Structural Engineer	LeMessurier Consultants
Environmental Consultant	Paladino and Company



## DESIGN

### 1981 CONSTRUCTION

Design Challenge  
Downtown location  
Center of Business district  
Street activation  
Neighborhood impact  
Connection to park

### ENVELOPE

Overclad - WWR36  
Reclad - WWR44  
Gain additional space - eliminating perimeter heat

### SYSTEMS

New chillers and cooling tower  
Active chilled beam

### OPEN SPACES

Add public, building and tenant amenity program  
Capitalize on unique conditions and opportunities  
Alternate work environments  
Access to open spaces

### ADDITION

Automated parking garage  
Future convertible space  
Reclaiming existing parking space for additional office spaces

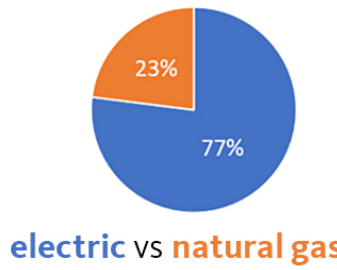
### ONE POST OFFICE SQUARE

Market Leader

## SUSTAINABILITY

### LOW EMBODIED CARBON

Minimize Environmental impact over 70% existing structure preserved  
Adaptive re-use  
Optimize Energy performance  
LEED v4 Gold target



### PASSIVE

Sensitivity analysis comparing WWR vs U value vs SHGC  
Reclad vs Overclad  
Triple Glazing Units  
Optimized U value + SHGC  
Improved Daylight  
Occupant thermal comfort

### ACTIVE

Comprehensive ECM study  
Energy Recovery Units  
Air and Water side economisers  
Provide free cooling for part of the year

### RAIN WATER MANAGEMENT

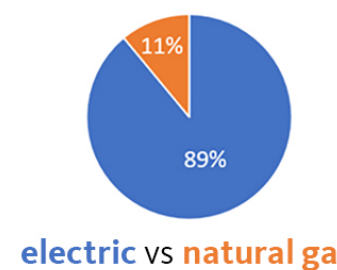
Resilient to 97 percentile rainfall event  
Ground water recharge pits  
Reusing existing water tanks for rain water storage

### REDUCED PARKING FOOTPRINT

Similar number of parkings with 1/6th area as compared to existing spaces

### SYMBOL OF RESILIENCE

LEED v4 Gold



Baseline  
48.7  
kBtu/sf

41  
kBtu/sf

>97  
percentile  
rainfall  
event

1/6th  
existing  
parking sf

30 % energy savings over ASHRAE 90.1 baseline

33.8  
kBtu/sf