

888 Boylston Street  
Prudential Center  
Boston, MA

## BOSTON'S MOST SUSTAINABLE BUILDING

BXP EXECUTES HIGH PERFORMANCE DESIGN FROM THE INSIDE OUT

Located at Prudential Center in the heart of Boston's vibrant Back Bay neighborhood, 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, 14-story office tower and two levels of subgrade parking. Building upon a history of sustainability and green building leadership, BXP held a clear vision and firm stance from the first kickoff meeting: 888 Boylston Street would be Boston's Most Sustainable Building.

### The Lives Inside

BXP focused on creating high performance office space for the customer, space that's designed from the inside out to promote the health, wellness and productivity of the lives inside the building. By seeking to understand the modern knowledge worker, BXP was able to imagine the customer perspective during decision making and optimize the user experience. By maximizing vision glass and studying daylight infiltration, the floors provide large open areas and a spectacular indoor environment with abundant views and natural light. A large dance floor with 60'-120' columnless clear spans and 13'-6" unobstructed northern vertical vision zones is flexible and ideal for tenants with open office plan configurations. Daylight harvesting reduces artificial lighting runtime 60%, and tenant lighting power density by more than 25%. Further, 100% LED lighting throughout the common areas provides excellent light level quality while using significantly less energy than the ASHRAE code allowance. As part of the sustainable design strategy, biophilic elements including living walls and a green roof provide connections



with nature and support a healthier urban ecosystem at the Prudential Center.

### Build Tight, Ventilate Right

The sustainability goals for the project were unachievable with a conventional building skin and HVAC mechanical system, so BXP sought an innovative approach. The solution is a tight, high performance thermal envelope and dedicated outside air system (DOAS) with high efficiency chillers, heat recovery and active chilled beam terminal units. Double-paned insulated glazing with a U-Factor of 0.235 and Solar Heat Gain Coefficient of 0.280 reduce the rate of heat transfer at the building skin, which is 70% glass across the whole building. The HVAC system provides 30% more fresh air and 50% more air changes per hour than a typical office building - without compromising energy performance. Overall, the building has been designed to consume 35% less energy than a code-compliant baseline

"888 Boylston is about creating more with less; creating a more productive and healthier work environment while consuming less energy, water and lowering our carbon footprint."

- David Stewart  
VP, Development  
Boston Properties

"888 Boylston reflects the truth that we can develop with a conscious regard for the environment and continue to push the envelope on our sustainability initiatives. With each new development we build muscle and memory that can be used in future projects."

- Bryan Koop  
EVP, Boston Region  
Boston Properties



building, resulting in an annual cost savings of \$650,000. In comparison to available Commercial Building Energy Consumption Survey (CBECS) data from a regional office peer group, the office building has been designed to operate 47% more efficiently.

**Water Conservation**

A rainwater harvesting system collects water from the roof for irrigation and cooling tower makeup, providing 20% of the total water consumed by the building. Low-flow plumbing fixtures throughout the building and the rainwater harvesting system reduce potable water consumption by 44%.

**Home Grown Clean Energy**

The roof of the building is a renewable energy plant. A 134 kilowatt solar photovoltaic and vertical axis wind turbine system produces enough energy to power 15 homes in Massachusetts. The 14 vertical axis wind turbines flanking the east and west crown of the building are a visible marker on the skyline that symbolize the stance and the progress necessary to advance towards a low carbon future.

**A Living Laboratory**

888 Boylston Street is not the biggest or tallest building, but it's a giant in terms of sustainability. The project is anticipating LEED Platinum certification under the United States Green Building Council (USGBC) LEED for Core and Shell 2009 Edition. As long term owners invested in sustainable operations, BXP plans on using 888 Boylston Street as a living laboratory for ongoing measurement, verification and public education.

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**PROJECT TEAM**

CLIENT	ARCHITECT	LANDSCAPE ARCHITECT	STRUCTURAL ENGINEER	MEP ENGINEER
BOSTON PROPERTIES (BXP)	FXFOWLE	MIKYOUNG KIM DESIGN	MCMAMARA SALVIA, INC.	BUROHAPPOLD
CIVIL ENGINEER	VERTICAL TRANSPORTATION	CODE CONSULTANT	ACOUSTICAL CONSULTANT	GEOTECHNICAL ENGINEER
VHB	VDA	HUGHES ASSOCIATES	CAVANOUGH TOCCI ASSOCIATES, INC.	HALEY & ALDRICH, INC.