



GREEN INITIATIVES AT MANDARIN ORIENTAL, BOSTON

From its inception, Mandarin Oriental, Boston's development team has sought a symbiotic relationship between their luxury hotel and residences and the environment and surrounding community.

Mandarin Oriental, Boston is a model for thoughtful, environmentally conscious development and operations for the 21st Century by maximizing energy consumption, connecting to the surrounding community, and employing sustainable construction practices.

TUNING THE BUILDING

Mandarin Oriental, Boston is among the the first hotels in Boston to undergo "building commissioning" to ensure that all systems are working to maximum efficiency. As a master mechanic would tune a Formula One race car to burn fuel as efficiently as possible, Mandarin Oriental, Boston has been monitoring all of its systems since they first came on line, and will continue to do so until the building is fully constructed and functioning.

EFFICIENT HEATING AND COOLING

HVAC systems are typically responsible for a building's greatest energy consumption; however, the systems in place at Mandarin Oriental, Boston employ state-of-the-art technology that dramatically lowers energy usage while improving air quality and thermal comfort.

High-efficiency chillers, coupled with Variable Frequency Drives, reduce cooling energy consumption by more than 30 percent annually. All incoming ventilation and outgoing exhaust air is pre-cooled or pre-heated by four heat and cooling recovery units, which recover excess heat in exhaust air, transfer it to energy, and use that energy to pre-condition and dehumidify incoming air, significantly reducing the energy required for heating and cooling

In winter, when temperatures are low, energy is further conserved by a "free cooling" system. Heat exchangers use cold water from rooftop cooling towers to supply chilled water, eliminating the need to use energy-consuming mechanical chillers.

In addition, the use of district steam for heating and hot water eliminates the need for in-house boilers, minimizing Mandarin Oriental, Boston's carbon footprint as well as its energy consumption.

TEMPERATURE CONTROL

Computer controlled systems connect to every piece of large mechanical equipment (e.g. chillers, pumps, fans, and other assorted HVAC systems) in the hotel to operate the building's equipment based on need. For example, if no events are planned for a space, equipment for that area can be adjusted to reflect that fact or turned off entirely. This is known as Building Automation System (BAS).

Hotel guest rooms, condominiums, and apartments will reset to the optimum holding temperature based on their location in the building and season when those spaces are either vacant or unoccupied. This practice will save energy rather than setting an arbitrary absolute temperature for the entire building. Motion detectors will also sense when guests and residents have returned and rooms will reestablish themselves to each guests' preferred temperature setting.

LIGHTING

Mandarin Oriental, Boston is designed to take full advantage of natural light, diminishing the need for exclusive interior lighting. The sun makes a wide arc around the building and massive expanses of windows flood public and private spaces with natural sunlight.

Energy efficient light bulbs and motion controlled lighting will be in use in appropriate areas, including all back of house operations.

GREEN ROOF

Mandarin Oriental, Boston has the benefit of more than 50 condominiums, 12 of which have roof gardens designed to sustain trees of heights up to six feet. Planned tree and shrubbery plantings on these decks will make the roof more energy efficient. High-reflectivity paving systems in use on the roof will manage storm water more efficiently as well as help retain heat in the winter and cool the building in the summer.

A beautifully landscaped garden off of the Newbury Arcade in the rear of the building adds to Boston's tradition of beautiful open spaces while serving as an active green roof to the parking garage that Mandarin Oriental, Boston shares with the Prudential Center.

BUILT TO LAST

Mandarin Oriental, Boston was designed and built to last for centuries. The materials used to construct the building include stone and brick, sourced from the United States, and installed by Boston's master craftsmen, including skilled masons. Built for sustainability, stability, and flexibility, the infrastructure of the building was designed to ensure easy modification in future ages.

In addition, Mandarin Oriental, Boston makes substantial use of rapidly renewable materials such as bamboo flooring and FSC (Forest Stewardship Council), Certified wood for subflooring as well as for protection during the construction process.

**GROUNDWATER
PROTECTION**

Boston's historic Back Bay, home to Mandarin Oriental, Boston, is built on a fragile ecosystem of tidelands that were filled in the 1800's, which means that careful attention must be paid to maintain groundwater levels. Careful planning prior to construction of Mandarin Oriental, Boston, protects this critical balance, which was continually monitored through construction.

RECYCLING

Contracts are in place for trash services, including recycling of paper, glass & plastic, as well as the rental of a cardboard bailing machine to break down boxes, compact them and tie them into neat bales, ready for pick up and re-use.

Currently all of the hotel cooking oil is held at the loading dock and given in trade for removal to a third party. This third party sells our cooking oil to local operators of conversion stations where it is used for operating converted diesel motor vehicles. On average 100 gallons each month is collected for re-use.

Recently the building began a program of removing and sending out for reuse all glass, paper, plastic and metals. These products are collected on the property in various operating departments using a single stream/comingled container.

**COMMUNITY
CONNECTION**

Mandarin Oriental, Boston creates density in a formerly underutilized footprint at the intersection of several of Boston's busiest neighborhoods. This pedestrian-friendly location, within walking distance of all basic services including restaurants, banks, houses of worship, stores, and several forms of public transportation, allows residents and guests alike to significantly reduce pollution created through automobile use. Built with this purpose in mind, the 570-foot newly built Newbury Arcade runs behind Mandarin Oriental, Boston and connects pedestrians from the department store Lord & Taylor to the Prudential.

**CONTROLLING
LIGHT POLLUTION**

Mandarin Oriental, Boston will contribute to reducing light pollution through thoughtful lighting design. Low-level, energy efficient step lights on terraces will illuminate the building by directing light down instead of up, creating a dramatic effect on the building, but not lighting the atmosphere.

AIR QUALITY

The air quality of Mandarin Oriental, Boston is extremely high; all systems were designed to maximize the use of fresh air throughout the building.

Windows are operable, balconies have functional doors, and in-room ventilations systems draw fresh air from outdoors. Systems are carefully designed so that guests can have the benefits of breathing fresh air, even without needing to open the windows.

There is no need for “undercuts” in doors, which can allow hallway noise and light in, because of the excellent ventilation.

**AN ENERGY
EFFICIENT
STRUCTURE**

Mandarin Oriental, Boston was created to be as energy efficient as physically possible. The “envelope” of the building, which guards against intrusion of temperature and moisture is built to museum-quality standards. In fact, the materials used to create Mandarin Oriental, Boston’s roof are the same materials as were used at the United States’ National Gallery.

Rigid Styrofoam insulation optimizes energy performance, providing stable, long-term insulation as well as blocking thermal shorts that may occur in roof, wall, and below grade assemblies as well as helping control humidity.

For further information, please contact:

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