

Meet the Greenest Building in NYC: A Tour of Queens Botanical Garden's Visitor and Administration Building

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You won't believe this place... On September 27th, 2007, [Queens Botanical Garden](#) (QBG) celebrated the opening of its Visitor and Administration Center. Earning NYC's first Platinum LEED rating, the building is the most environmentally sustainable building in NYC's five boroughs. In the winter of 2007, I visited with QBG staff members Susan Lacerte, Jennifer Ward Souder, and Patty Kleinberg. After our meeting, Jennifer kindly took me for a tour of the new building and grounds. I had high expectations, which were very quickly exceeded.

In a Nutshell

This 15,000 ft² \$22,000,000 building is the greenest building in New York, and a model for new construction at public gardens and other environmentally conscious cultural institutions. Its smart architecture, responsible water use, careful plant selection, and innovative educational components show a vision for what will hopefully be, according to NYC Mayor Michael Bloomberg, the standard, rather than the exception to the rule.



A Green Master Plan

The new building, several years in the making, is the centerpiece of [QBG's master plan](#), which focuses on the elements of plants, water, cultural expression, and environmental stewardship. Additional components of the master plan include a Horticulture and Maintenance building, completed in 2007, and a planned "parking garden," QBG's take on the traditional parking lot.

Smart Architecture and Interior Design

Designed by [BKSK Architects](#), the 15,000 ft² building – nearly quadruple the size of the original visitor center- features a dramatic, 27 ft. tall sloped canopy, an office complex, and an auditorium with an integrated 3000 ft² green roof. Its striking lines are functional. The sloped roof provides a large canopy for special events. It also channels water down to the green roof and a system of bioswales and wetlands for recycling back into the system. The office complex, composed of steel, wood, concrete, and glass and takes advantage of the maximum sun exposure and offers workers a view of the garden from their offices inside.

The conservation ethic continues inside in the office complex. The office furniture is made from mostly reused wood, Cradle to Cradle (SM) carpeting is used throughout, and a recycling center can be found in the common area. Perhaps my favorite feature is the motion sensitive lights found in the offices.

Responsible Water Use

The building and integrated grounds feature several innovative elements to conserve water.

Water collected during rainstorms flows off the sloped roof into a “cleansing biotope,” which is filled with native wetland species that help cleanse the water. The filtered water is stored in a 24,000 gallon cistern, diverted to a water channel, and is eventually pumped to a water feature. After reaching the fountain, the water is pumped along the perimeter of the building back to the cleansing biotope to begin the process again.

Graywater from sinks and showers is diverted to a constructed wetland adjacent to the building, where it is filtered by plants and then sent back for reuse in visitor toilets. Visitor urinals are non-flushing, and use only 3 ounces of water as opposed to the standard of one gallon. Even more adventurous, two staff toilets are composting toilets, with the resulting compost tea being used to feed on-site plants.

[Geothermal heating and cooling](#) reduces energy costs by pumping 55° water from a 300 foot deep aquifer to maintain a consistent interior temperature. It is effective for cooling the building in the summer and heating it in the winter.

Overall, this system achieves 100% storm water retention.



Careful Plant Selection

A semi-intensive green roof (6” soil, 16” roof platform) boasts a varied, mostly native plant palette, blending prairie grasses and a touch of color... it’s not all sedum. This rooftop garden absorbs rainfall, and once adapted, will require no irrigation. All climatic and cultural data is captured by a green roof monitoring system. The green roof sits atop a newly constructed auditorium, which will be used for weddings, special events, and educational programming.

Innovative Educational Components and Interpretation

QBG capitalizes on the learning opportunities provided by this new building and its surrounding spaces. Inside, electronic kiosks interpret the building’s design, construction, and energy processes and consumption. The kiosks are powered by the photovoltaic panels. Outside, interpretive panels illustrate the design principles and effect on the land in four languages. After all, Queens is the most diverse community in the nation.

Environmental Impacts

Overall, the building’s design accounts for a total energy savings of about 40%, with solar panels providing about 20% of the building’s energy. In addition to the reduction in water consumption, the building system achieves 100% storm water retention.

Final Note

Thanks to the QBG staff for the informative tour and for providing the public garden world with some inspiration.

Resources

Queens Botanical Garden

[QBG website](#)

[Brochure about the project](#)

[Month by month construction updates](#)

[Description of sustainable systems used](#)

Green roofs

[Green Roofs for Healthy Cities](#)

[International Green Roof Association](#)

[Wikipedia entry for "green roof"](#)

Green Building

[LEED website](#)

[Cradle to Cradle website](#)