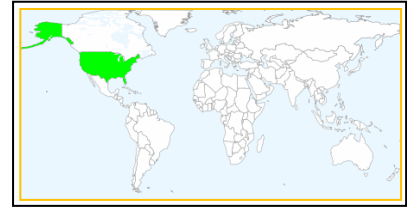


International Green Roof City Network

Case Study New York, New York USA



1) City Data

Location

New York City is located on one of the world's largest natural harbors. New York City consists of five boroughs, each of which comprises a state county. The five boroughs consist of The Bronx, Brooklyn, Manhattan, Queens, and Staten Island.

Area

305 sq miles (approx. 789 km²), over 28,000 acres (approx. 113 km²) of municipal parkland and 14 miles (23 km) of public beaches. This parkland complements tens of thousands of acres of federal and state parkland.

Population

New York is the most populous city in the United States. As of the 2010 United States Census, the city's population stood at a record high of 8,175,133, a 2.1% increase from the 8 million counted in 2000. This amounts to about 40 % of the state of New York's population and a similar percentage of the metropolitan regional population.

Other Information

New York City has a humid subtropical climate, and using the 0 °C (32 °F) threshold it is the northernmost major city on the continent with such categorization. The area averages 234 days with at least some sunshine annually, and averages 58 % of possible sunshine annually, accumulating 2,400 to 2,800 hours of sunshine per annum.



Winters are cold and damp, and prevailing wind patterns that blow offshore minimize the moderating effects of the Atlantic Ocean; yet the Atlantic and the partial shielding of the Appalachians keep the city warmer in the winter. The city receives 49.7 inches (1,260 mm) of precipitation annually, which is fairly spread throughout the year. Average winter snowfall for 1971 to 2000 has been 22.4 inches (57 cm), but this usually varies considerably from year to year. Hurricanes and tropical storms are rare in the New York area, but are not unheard of and always have the potential to strike the area.

2) Description of the local Green Roof Policy Initiative

2.1 Start

In the spring of 2007 the Five Borough Technical Services Division of the New York City Department of Parks and Recreation began installing green roofs of various designs atop the headquarters of the Five Borough Complex on Randall's Island. This division, together with Parks' Green Apple Corps, has installed 25 systems, which cover over 29,000 square feet (approx. 2.700 m²) of roof on the entire building. In the spring of 2009 the Five Borough Technical Services Division of the New York City Department of Parks and Recreation installed its first building integrated sustainable agriculture system, a 4,000 square foot (approx. 372 m²) urban rooftop farm. The urban rooftop farm consists of multiple rows of a custom mix light weight soil. In the spring of 2011 the Five Borough Technical Services Division of the New York City Department of Parks and Recreation installed its second building integrated sustainable agriculture system, a 15 unit urban rooftop hydroponic garden. Each tower garden is capable of growing 20 – 25 plants in a foot print of approximately 4 square feet.

2.2 Expected environmental benefits

- Stormwater management
- Biodiversity
- Urban Heat Island Effect
- Air Quality
- Climate Change
- Energy Savings
- Beautification of the City

Other benefits

- Decreased Transportation Costs (Food production)

2.3 Environmental benefit that is the carrier of the green roof initiative

Primarily stormwater management: In New York City, Green Roof Systems are promoted primarily for sustainable stormwater management. Initially, Green Roof Systems were promoted to help reduce combined sewer overflows and reduce the amount of stormwater reaching our streams. Recently, additional benefits such as providing habitat have been recognized. NYC Parks staff are researching and/or monitoring the benefits Green Roof Systems provide including: water quality, stormwater runoff, habitat, biological communities, energy conservation, cost, and green internships and jobs.

2.4 Support instruments that are used by the municipality to promote green roofs

- Building, landscape, energy, or other code or policy (e.g. land-use plan, green roof bylaw, zoning code, green factor, design regulations, etc.)
- Reduced stormwater fee
- Financial Incentives
- Tax Credits
- Favourable Credit Terms
- Density Bonus
- Demonstration Projects
- Ecological Labels
- Press, Internet
- Education and Information (e.g. seminars, conferences, green roof tours, etc.)
- Research
- Local Green Roof Guidelines
- Consultancy offer for constructors, investors, building owner
- Other instruments: Guidelines for the Design and Construction of Stormwater Management Systems



Description of support instruments

Building, landscape, energy, or other code or policy:

The NYC Construction Codes consist of the 2008 Building Code, Plumbing Code, Mechanical Code, Fuel and Gas Code, Electrical Code and the NYC Energy Conservation Code:

www.nyc.gov/html/dob/html/home/home.shtml

High Performance Landscape Guidelines, 21st Century Parks for NYC: A Project of the Design Trust for Public Space and the new York City Department of Parks & Recreation.

www.designtrust.org/; www.nyc.gov/parks

Green Building Policy: GREEN BUILDING (LOCAL LAW 86 OF 2005):

www.nyc.gov/html/oec/html/green/green.shtml

Watershed Health Policy: In conjunction with the implementation of the new stormwater performance standard, DEP has published a companion document, Guidelines for the Design and Construction of Stormwater Management Systems, to assist New York City's development community and licensed professionals in the selection, planning, design and construction of onsite source controls that comply with the new rule. The document cover and several pictures depict the Five Borough Roof System:

www.nyc.gov/html/dep/pdf/green_infrastructure/stormwater_guidelines_2012_final.pdf

Tax Credits:

New York City offers property tax abatements to property owners that install solar green roofs on their buildings:

http://www.nyc.gov/html/dob/downloads/pdf/green_roof_tax_abatement_info.pdf

Press, Internet: The Five Borough Green Roof Systems web site has information about the City's Green Roof program: www.nycgovparks.org/greening/sustainable-parks/green-roofs

Education and Information:

- Green Roof Day and Vendor Fair
- Project tours, targeted presentations and technical seminars
- Internships
- Green Roof Website

Research and Monitoring:

- Habitat and biological communities
- Stormwater quantity and water quality
- Energy conservation
- Costs
- Green jobs and Internships

Other Instruments: Guidelines for the Design and Construction of Stormwater Management Systems: NYC Department of Environmental Protection has published Guidelines for the Design and Construction of Stormwater Management Systems.

www.nyc.gov/html/dep/html/stormwater/stormwater_management_construction.shtml

3) Number and area of green roofs

Not available

4) Challenges and future prospects

The Five Borough green roof and urban rooftop farm serves as a working laboratory for green roof design and construction, providing knowledge to the rest of the agency and other groups while at the same time conserving and giving back to New York. It acts as an experimental station in which the performance of many different systems can be monitored and compared.

5) Contact persons

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6) Internet resources

http://www.nyc.gov/html/dob/html/sustainability/green_roofs.shtml
www.nycgovparks.org/greening/sustainable-parks/green-roofs