



THE CITY OF NEW YORK  
OFFICE OF THE PRESIDENT  
BOROUGH OF MANHATTAN

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Testimony of Manhattan Borough President

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*Before*

New York City Council Committee on Finance

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Good morning. I want to thank Chairman Weprin for the opportunity to testify in support of Resolution 1004. By urging the state legislature to pass a declining property tax exemption for green roofs, the Council will lend its weight to the important fight to make developers and property owners account for the environmental, public health, and urban sustainability potential of their buildings. If New York is to become the world's greenest city, we must find innovative ways to harness our sustainability goals to larger patterns of development and economic growth. PlaNYC's green roof tax incentive is a model framework for this kind of action, and it demands our collective leadership.

From the Plaza Hotel to the Empire State Building, New York is famous for its built environment. Buildings not only shape our City culturally and iconically, they also dramatically affect our environment. In 2005, buildings accounted for 79 percent of New York City's carbon dioxide emissions, compared to only 32 percent of carbon output nationwide. While that skewed ratio tells us that buildings are one of New York's key environmental challenges, it also speaks to our city's inherent sustainability. Urban density, small-scale living quarters, and reliance on mass transportation mean that New Yorkers cause only 29 percent of the greenhouse gases of that of the average American. But that same density also imposes a unique set of environmental challenges. The materials of our built environment—and the relative lack of vegetation and natural surfaces in the city—result in the urban heat island effect, increased air pollution, higher peak-load energy demand, and stormwater and combined sewer overflows (CSOs), among other environmental and health hazards.

To limit these environmental burdens, green roofs must become a regular part of our urban landscape. Green roofs are about so much more than aesthetics. They provide an innovative approach to stormwater retention, year-round energy conservation, and improved air quality. Not surprisingly, cost is widely recognized as the chief barrier to green roof construction, and they often require some degree of structural retrofitting when installed on existing buildings.

This, coupled with the industry's general lack of design standards and experience in green roof technology, makes green roof installation seem like a challenge. But, the benefits of green roofs are simply too vast for the government to allow them to remain cost prohibitive. Although the cost of green roof installation will be recovered over time, a tax exemption will greatly ease the burden of the initial added expenses and shorten the timeframe for making up those costs. The fact that similar green roof incentives have been adopted by other cities--including Chicago, Toronto, and a handful of cities across Europe--certainly suggests that the practice is well established and effective.

A government-sponsored pilot incentive must be implemented so that green roofs can become the standard for our City's buildings and an essential component of future developments. I'd like to offer some ideas for making the most of the program. While I *fully* support Resolution 1004, I also believe that we must carefully consider the types of development that should be encouraged. For instance, to ensure that a green roof incentive is not regressive--and that we extend green building benefits beyond the realm of luxury towers-- the exemption could be higher for buildings with affordable housing units. For neighborhoods where land use is not available for open space development, we must think about how we can encourage public access to green roof space. Finally, incentives must exist to motivate property owners to maintain a green roof, so that its benefits are truly maximized. Perhaps the annual allocation of a tax exemption should be contingent on proper maintenance of the roof.

In conclusion, I applaud the Mayor and the Office of Long-term Planning and Sustainability for recognizing the role that the environment plays in our city's livability and growth. While some of PlaNYC's initiatives will take years to implement, we have the ability--and responsibility--to take immediate action in the ways that we can. I strongly urge the Council to pass Resolution 1004, signaling its commitment to a greener city, and to the sustainability of our built environment. I look forward to working with the City Council, the Mayor's Office of Long-term Sustainability, and state legislators to realize this important change.

Thank you again for the opportunity to testify.

Thank you Chairman Weprin and members of the Finance Committee for holding this hearing. And thank you for allowing me to testify regarding Resolution No. 1004.

My name is Amy Norquist and I am the President of Greensulate LLC, a green building consulting and construction company, based in New York City.

There is more than enough research out there in support of green roofs and their benefits some of which I'm sure informed this comprehensive and valuable resolution. I'd like to focus my comments on some of this research, and add a few statistics and additional points in support of the resolution.

I took a tour of the Solaire building in Battery Park two week ago. For someone in my line of work and with my interests this was an inspiring few hours. Not only was the solaire roof green (as expected) but there was more than one green roof on the building and green roofs have begun sprouting up around it, in every direction. A far different experience than looking out my 10<sup>th</sup> floor window on 3<sup>rd</sup> avenue and 14<sup>th</sup> street, where I can count at least 70 tar and very non-green roofs that are all excellent candidates for greening. So, in this case I'd like to say that the view itself and knowing that those green roofs are there on the Solaire and surrounding buildings has improved my experience of New York City.

But there are other, possibly more compelling, and certainly more quantifiable arguments for green roofs.

Green roofs cut energy consumption and green house gas emissions. The solaire Building uses 65% less electricity than a similar conventional building. Overall it uses 35 % less energy for heating, cooling and built-in lighting. Green roofs are only a part of this, but green roofs are most beneficial in the summer when electrical costs and the risks of blackouts are at their peak. Studies indicate that if we reduced the temperature of the city by only 1.4 degrees in the summer, this would result in a cost savings of over 70 million at current electrical prices. Important reductions also include decreased burning of fossil fuels and CO2 emissions, both of which dramatically impact climate change.

Green roofs reduce storm water volume and combined sewage overflows. According to a recent study by Riverkeeper and S.W.I.M., over 27 billion gallons of raw sewage and polluted storm water--caused by 460 combined sewage overflows--stream into New York Harbor each year. It would be far cheaper to capture this amount of stormwater than to control it through end-of-pipe storage tanks and other engineered systems. And green roofs retain 60-100% of stormwater they receive.

A \$100,000 dollar investment citywide (40,000 sq feet) could lead to over 81,000 gallons of stormwater captured. If all the eligible roofs in the City were transformed to green, they would capture 13 billion gallons of stormwater a year, according to the S.W.I.M/Riverkeeper study.

In other economic arguments involving stormwater, Governor Spitzer stated after the August 2007 storm which flooded our subways, that "this was the third time the transit system has failed in the last seven months due to weather, costing taxpayers millions of dollars."

And there are additional benefits of installing green roofs not covered in this resolution that will have varying degrees of importance with different constituencies.

-Green roofs increase employee productivity and reduce absenteeism. Even minute changes in productivity translate to large financial benefits. A Canadian study measures the 20 year benefit as high as \$48-67 per square foot.

-Green roofs are a growing industry. Creation of what are now being called “green collar” businesses add new well paying jobs to communities.

-Implementation of green roofs by hospitals can improve patient recovery rates, which translates into cost savings in health care.

-Green roofs expand wildlife corridors. Migrating birds especially benefit.

-Green roofs increase the effectiveness of photovoltaics. Studies indicate that the energy efficiency of solar panels increases 8-16% when combined with a green roof.

-Urban beautification has an impact on tourism and the way visitors view our city.

-Green roofs reduce noise pollution.

-Green roofs, when planted with Sedum, reduce the risk of fire.

-Waterproof membranes beneath green roofs last 2-3 times longer than without.

Even with all of the benefits, I agree with you and have experienced it, that homeowners and developers are reluctant to invest the up front costs for a green roof.

But other municipalities show evidence that when government incentives are added, the rate of green roof adoption increases dramatically. Furthermore, incentives create embedded norms related to green building. In Germany, which is phasing out such incentives, as many as 75% of new buildings still include green roofs.

But going back to the New York rooftops, to the top of PACE university downtown. There is a small study—of green roof systems—on the roof deck below a large dormitory that also includes the President’s office on the top floor. The hope is that some day we can turn that roof deck into a green roof but right now it is barren except for the garbage thrown out the dorm room windows. Wouldn’t it be great if all the freshman who pass through that dorm, and all of the offices that look down on that roof, and all the people who meet with the President in that office looked down at thousands of square feet of meadow during the spring or in the winter, fresh snow instead of the wet gray hard pavement there now?

Conclusion:

Green roofs provide a tremendous array of public benefits including adding life to the roof tops, air quality improvements, reduction in greenhouse gases, water quality and stormwater management as well as economic benefits for building owners and government.

This resolution presents a strong case for municipal and state policy support. And I believe this policy will rapidly increase the adoption of green roofs as a viable and popular option throughout New York City. That would be beneficial—for the many reasons stated—to all residents and all of those who pay us a visit.

**November 29, 2007**  
**Testimony before the Committee on Finance**  
**City Council of New York**  
**Re: Resolution No. 1004**

Good morning. I am Kate Shackford, Director for Energy and the Environment, of the Bronx Overall Economic Development Corporation (BOEDC). I am here to speak in support of Res. No. 1004, calling upon the New York State Legislature to establish a declining property tax exemption on properties constructed or reconstructed where such construction or reconstruction includes the installation of a green roof. I would like to recognize the leadership of Council Member Speaker Christine Quinn, and the sponsors of this ground-breaking bill.

When the Bronx Initiative for Energy and the Environment (BIEE) was established in 2003 through a Memorandum of Understanding between the Bronx Borough President, Adolfo Carrión, Jr., BOEDC and the New York Power Authority, we became very excited about an environmental technology new to the U.S., but with a 40+ year history in Europe—green roofs. The South Bronx has asthma rates that are seven times the national average, over 11,000 trucks pass through the South Bronx daily, and the area is home to waste treatment plants, power plants, and other major polluting facilities. And the Bronx water basin suffers from Combined Sewer Overflow (CSO) incidents whenever there is over ¼” of rainfall.

Green roof technology can address several problems we face in our urban environment: it reduces the urban heat island affect by lowering ambient air temperature; it filters air and reduces air pollution; it insulates the building underneath, resulting in significant energy savings; and it

absorbs 40-80% of stormwater, utilizing what it needs and gradually draining off the excess, thereby reducing the raw sewage pushed into our waterways during a major rainfall.

The Bronx Initiative for Energy and the Environment allocated \$1.2 million for its Greening the Bronx Grants Program, and we held a meeting with community groups to ask how they would like this money spent. The answer was clear: provide grants for street trees, tree stewardship, and green roofs. Accordingly, BIEE committed funds over the next four years for fifteen (15) green roofs in the South Bronx, and eight (8) of these have been installed to date.

In addition, BIEE committed funds to develop a 10,000 square foot demonstration green roof, which was installed on the Bronx County building in June 2006. This was the first on a municipal building under the Department of Citywide Administrative Services (DCAS). BIEE engaged Green Roof Service, LLC, German landscape architects with fifty years of combined green roof experience, who designed the extensive green roof according to the guidelines developed in Germany. BIEE provides tours to the public by appointment. We also leveraged funding from the Environmental Protection Agency (EPA) to install monitoring boxes on the Bronx County green roof to track stormwater retention and temperature of the green roof system in comparison to a standard black roof system. For June-September 2007, the stormwater reduction averaged 55%, with a rate of 78% for September! On the hottest day in July, the black membrane roof was 45-50 degrees Fahrenheit hotter than the membrane under the green roof system. The roof will be monitored for two years, providing data that will support what we already know—green roof technology is a critical environmental technology that can

significantly reduce environmental problems if applied widely and according to consistent standards.

Green roofs have been proven to last at least twice as long as a conventional roof, so the fact that it costs twice as much makes sense, but the increased initial cost is the main impediment to the adoption of green roof technology . In the Bronx several businesses have contacted our office with an interest in installing green roofs, but they can't afford the incremental costs associated with the technology. In summary, I support Res. No. 1004 which calls for State incentives in the form of a declining property tax exemption, a critical first step in encouraging the fledging green roof industry in New York State, until such time as critical mass and competition bring down these costs.

Thank you.