

Testimony of Charles Sturcken
Director, Economic Development Unit, New York City Department of
Environmental Protection
before the
Committees on Small Business and Environmental Protection
New York City Council
Leveraging Green Business

Monday, April 29, 2013

Good morning Chairpersons Reyna and Gennaro, and Members. I am Charles Sturcken, Director of the Economic Development Unit of the New York City Department of Environmental Protection (DEP). Thank you for the opportunity to testify on leveraging green business in New York City.

DEP is the agency charged with protecting public health and the environment by supplying clean drinking water, collecting and treating wastewater, and reducing air, noise, and hazardous substances pollution. In carrying out its mission, DEP has programs to encourage the implementation of green projects both with businesses and private property owners and a large capital budget for retrofitting city-owned property that includes numerous projects directed toward the city's sustainability and energy efficiency.

The Economic Development Unit (EDU) in DEP's Bureau of Communications and Intergovernmental Affairs fosters the joint goals of economic development and environmental protection by offering compliance and technical assistance to New York City industrial and commercial establishments, including small businesses and trade associations and local business groups, and by promoting environmentally sound business practices.

For example, EDU performs workshops for restaurants regarding the proper management of oils and grease, which includes the recycling of used cooking oil (or yellow grease) that ultimately results in the production of biofuels. Through our networking connections with New York City hospitality and restaurant associations as co-sponsors of the workshops, we also spread the word about greening restaurants by encouraging greater energy efficiency and wise water use. The hospitality industry also benefits from workshops for owners of bars and clubs on how to lower noise coming from their establishments, an often overlooked environmental and health impact.

In conjunction with NYC Media, EDU has also produced three educational "how-to" videos for the business community on proper grease and oils management and recycling, music and noise mitigation—mainly for restaurants and bars—and on backflow prevention devices, which prevent contaminated water from entering our world-class water supply. These videos help businesses be more ecologically responsible neighbors, stay in compliance and avoid fines. We also assist our business clients, including green businesses, in identifying sources of financing. For example, the businesses we have assisted, both start-ups and existing entities, include property developers in the Bronx, an alternative garment cleaner in Manhattan, a laundry in Queens, a construction and debris transporter in Brooklyn and a prospective brewer in Staten Island. Upon initial contact with businesses, we offer a menu of green financing options. Post-

Sandy we also forwarded information on the availability of federal Small Business Administration and NYC recovery funds to over 80 trade associations and local business groups, and they have distributed that information to tens of thousands of their members.

Restaurants and other businesses can request a free water audit from DEP. This audit is conducted by DEP's contractor for the program, Honeywell Utility Services, and helps to identify areas where owners can conserve water and energy and reduce operating expenses. Additionally for restaurants, if warranted, the Honeywell technician performing the audit will install (at no cost) a low-flow pre-rinse spray valve on the automatic dishwasher.

DEP had a toilet replacement program (TRP) in the '90s that significantly cut water use in the City, thereby saving customers money as well. We have recently initiated a second round of that program. DEP reached out to 25 local plumbing businesses that may qualify to be vendors for the TRP. DEP will award up to five contracts with such vendors in Phase I of the TRP, in which up to 250,000 toilet fixtures may be sold in the next two years, generating up to \$30 million in retail sales. It costs approximately \$270 in plumber costs to install a toilet. Many of the TRP participants will be hiring plumbers, thereby generating work for plumbing businesses that could be upwards of \$60 million.

Phase II of the TRP will replace an estimated 550,000 toilets, having the potential to generate another \$70 million in sales in the following three years. Plumbing businesses' labor revenues may be upwards of \$140 million during Phase II.

In its Municipal Water Efficiency Program, DEP is looking to replace approximately 100,000 commercial toilets in the next five years, each retailing at \$800-\$1,000. In addition, DEP and the School Construction Authority are relying on local plumbing businesses to do the purchasing of supplies and installations.

DEP and the Department of Citywide Administrative Services (DCAS) have embarked on a solar power public-private partnership to reduce the City's carbon footprint, improve air quality, and increase the reliability of the electricity grid, particularly during the hottest months of the year. Tangent Energy Solutions, a private energy services company, will install solar arrays totaling more than 1.85 megawatts on the roofs of four City buildings in Staten Island and the Bronx. Together, the solar installations will produce more than 2 million kilowatt hours of electricity annually—enough to power 245 residential homes—decrease greenhouse gas emissions by 1,636 metric tons a year and help City government reach its PlaNYC goal of reducing municipal greenhouse gas emissions by 30 percent by 2017.

Under the program, which comes with no up-front capital cost, the City will not be responsible for purchasing, owning, installing or maintaining the system, and can purchase the electricity generated from it. As a result, the City is set to save more than \$8 million compared to the cost of installing the solar systems through its capital construction program, and the four projects will help bring more than 40 new green jobs to the city and pave the way for more similar projects—both public and private.

Building owners who want to install green roofs can benefit from the New York City Green Roof Tax Abatement program, which currently offers a \$4.50 per square foot property tax abatement of up to \$100,000 (or the building's tax liability, whichever is less) per green roof installed. DEP has been working with the Office of Long-Term Planning and Sustainability, the Department of Buildings, the Office of Management and Budget, and the Department of Finance, as well as environmental advocates and green roof designers to modify and extend the tax abatement. DEP met with stakeholders and agency partners to identify ways to improve response to the program, increase the number of green roofs in the City and support the transformation of the local market for green roof materials and labor. Proposed modifications will extend the program for five more years; increase the value of and raise the cap on the abatement; add native and agricultural species to the possible plantings; and allow the addition of controlled roof drain systems.

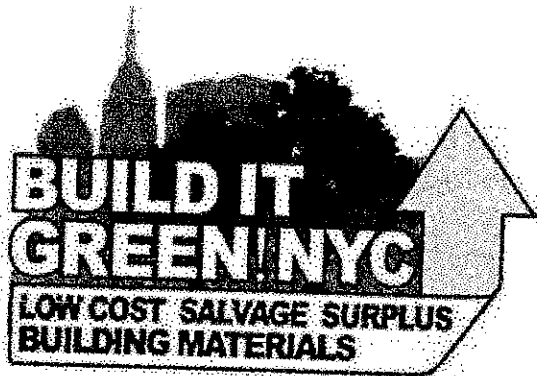
Last year, DEP signed an Amended Consent Order with the New York State Department of Environmental Conservation to include green infrastructure, or stormwater management practices, into our overall strategy to manage stormwater runoff, mitigate combined sewer overflows, and improve water quality in our local waterways. DEP has allocated \$1.5 billion for green infrastructure investments over the next 20 years and in the first phase of the program DEP will spend \$187 million by FY 2015 to primarily retrofit the City's streets and sidewalks with green infrastructure, in the form of right-of-way bioswales and stormwater greenstreets. These construction projects will be bid through DEP, the Department of Parks and Recreation, the Department of Design and Construction and the Economic Development Corporation. There will also be professional services contract solicitations for design and construction management through DEP, DDC, and EDC.

DEP also works with the Department of Transportation, the Department of Education / School Construction Authority / the Trust for Public Land, the New York City Housing Authority and other city agencies to add green infrastructure to their existing capital projects. These projects consist of rain gardens, porous paving, green roofs, and sub-surface detention systems.

DEP also manages a Grant Program which funds the design and construction costs for green infrastructure installations on private property within combined sewer areas. The grant program, which is ongoing, typically makes \$4-\$6 million available for grants in each cycle; and the average award amount has been approximately \$350,000. To date 18 projects have been funded including eight green roofs, one rooftop farm, and five rain gardens.

Overall, the scale of the green infrastructure program will be considerable. Already we are seeing increased opportunity for extensive work forthcoming in the trade sectors of surveyor, geotechnical services (drillers) and landscape contractors in addition to general contractors and trades. DEP hopes to capture the economic impact of the program as we go forward.

Thank you for the opportunity to present testimony. I look forward to answering any questions you may have.



Testimony of Justin Green
Director, Build It Green!NYC

Before the New York City Council
Committee on Small Business and Committee on
Environmental Protection

Regarding Leveraging Green Business
April 29, 2013

On behalf of Build It Green!NYC, I would like to thank the Committee on Small Business and the Committee on Environmental Protection for holding this hearing. **Build It Green! NYC**, is a community based non-profit business dedicated to improving the environment and our communities while creating living wage green jobs. We currently divert over 3 million lbs of construction and demolition waste and 200,000 lbs of food waste from the landfill each year. We employ over 30 full time staff with benefits at two reuse centers - in Gowanus, Brooklyn and Astoria, Queens. Our reuse centers resell donated, salvaged and surplus building materials. The reuse centers have everything from panel doors to refrigerators and lumber to movie props. We also have a substantial composting program in partnership with DSNY and the Parks Dept. We are working to reduce the reusable waste getting landfilled which contributes to climate change through the emission of methane from landfills and the wasted consumption of natural resources.

I would like to use this opportunity to discuss how the city can improve the environment and reduce our climate change impact while also supporting small business. City policy and legislation is essential to reduce our climate change impact. Unprecedented weather events including Sandy in 2012 cost the US \$139 billion - 1% of our GDP. In countries that cannot afford to respond to these historic droughts and other extreme weather events, climate change will kill millions of people. We need to act now as a city and as a capital of international commerce to slow climate change and save lives around the world.

How can the city help small green business and help improve the environment? We need access to financing, space to start up, and legislation that creates a green economy. The green economy is built in response to government action and regulation. We actually could use more government regulation and legislation in a number of areas. Legislation promotes the investment in new business. The goal of environmental legislation is to reduce climate change impact and create healthier communities, but they also create business opportunities as companies compete to respond to changes. Government can help provide incentives and financing to make the transition to a greener economy.

- Recycling and composting requirements can create business and jobs in sorting, reusing, recycling. There are business opportunities in creating new products from discarded materials as the many businesses in paper and metal recycling have demonstrated.

Instead of paying to put materials in landfills where they create methane – a powerful climate change gas – we should be paying businesses to recycle the waste.

- Requiring greater energy efficiency and reducing carbon emissions creates business for new technology and products. For example, jobs are created weatherizing our old buildings. Instead of paying gas companies, we create local businesses improving our buildings for future generations.
- Requiring less toxic products creates business opportunities while making our communities healthier.

1) Carbon tax. Create tax on energy usage based on carbon released.

- Tax on electricity not generated by renewables.
- Tax on different rates on natural gas and oil.

Use carbon tax to fund energy reduction programs for small business and the installation of renewables in the city owned by city residents and businesses. Use on bill financing to help finance installation of energy efficiency measures.

2) Require commercial building owners to make buildings efficient. When tenants pay utilities, building owners have little incentive to make their buildings more efficient.

3) Create a zero waste goal for NYC. San Francisco has a zero waste goal for 2020 and is already at 80% diversion. Much of Europe is already reaching those levels.

- Require recycling and reuse of construction and demolition waste (see below). Require deposit for demolition with percentage of deposit returned based on recycling rates. Use unclaimed deposits to help support enforcement of construction and demolition recycling. (see below)
- Institute a carbon based packaging tax as instituted in Netherlands. Use tax to fund other city efforts.
- Ban nonrecyclable take out containers - reduce cost to city of landfilling.
- Require composting for commercial and residential waste.

Green businesses and green jobs are created to help recycle, reuse and compost materials. Additional businesses are created in supplying green packaging

Build It Green!NYC is focused on reducing NYC's construction and demolition waste stream. New York City generates **7 million tons** of construction and demolition (C&D) waste annually- approximately 50% of the City's waste! Currently, New York City does not require or incentivize recycling and reuse of C&D waste. To address this glaring environmental issue, Build It Green!NYC would like to propose policies recommendations based on successful C&D waste reuse and recycling policy at work in Chicago, Los Angeles, San Jose, San Francisco and Portland, OR.

Policies that foster recycling and reuse of Construction and Demolition waste (C&D) through deconstruction can spur much higher rates of waste diversion and job growth with minimal government spending. Deconstruction is the careful dismantling of buildings to maximize waste *diversion through reuse and recycling. Deconstruction requires more labor than standard*

demolition but offsets the cost of additional labor with lower waste disposal costs. According to the EPA, recycling creates six times the number of jobs versus landfilling. Deconstruction and reuse have an even higher job creation ratio due to the labor required.

City government action is needed for deconstruction and building material reuse and recycling to become standard practice in NYC. Without action, millions of tons of materials will continue to be shipped hundreds of miles for burial in or on top of landfills. High “recycling” rates currently claimed by waste transfer facilities are derived grinding waste used to cover landfills as Alternative Daily Cover. The decomposition of materials in and top of landfills creates methane gas – a greenhouse gas over 25x more powerful than carbon dioxide and which accounts for 3% of the NYC climate change emissions.

Waste diversion policies and the resulting supply of separated recyclable and reusable materials will drive investment in local recycling infrastructure to process materials and create additional jobs. Recycling requirements in Massachusetts led to the construction of six state-of-the-art private recycling centers. NYC recycling policy helped establish Pratt Paper Mill on Staten Island: the mill has generated over 240 jobs and recycles 50% of NYC’s municipal paper waste. With city support through policy and investment, Build It Green!NYC and other C&D waste recyclers and reuse centers could create more jobs while diverting millions of tons from the landfill.

We recommend the following policy initiatives to encourage deconstruction and greater recycling and reuse:

1) Require a Recycling and Reuse Plan for demolition and construction

The NYC Green Codes Task Force recommends that demolition and construction projects submit a Recycling and Reuse Plan to DOB detailing proposing recycling, reuse and disposal of waste for the project. We strongly support this recommendation. Chicago, San Francisco, and Portland have similar requirements.

2) Create a deposit-based demolition permit

Construction and demolitions sites should be encouraged to recycle and reuse through a deposit-based permit fee. In this system, all demolition and large construction permits would require a deposit based on square footage or job value. The contractor redeems a portion of the deposit based on the percentage of material reused or recycled. Material taken to a reuse center or single stream recycler would count as 100% recycled. Material taken to a mixed transfer station would receive the audited recycling rate of the transfer station. The City would keep deposits that were unclaimed due to low diversion rates or if materials were taken to an uncertified facility. San Jose has successfully implemented this incentive system.

3) Certify waste transfer stations receiving construction and demolition waste

In order make a deposit system possible; the Department of Sanitation or BIC would certify, for a fee, waste transfer stations receiving construction and demolition waste from NYC including those in New Jersey. As part of the certification, recycling rates for each facility would be

audited and assigned. Contractors would use the facility recycling rate to redeem the demolition deposit. For example, if a certified waste transfer station achieves a 65% recycling rate, all demolition loads taken to the facility would receive a 65% recycling rate. The certified recycler fee would pay to the city for the auditing of transfer stations. This proposal gives DSNY the option to collect a per ton fee on unseparated construction and demolition waste to encourage onsite separation. Enforcement is integral to this policy as waste haulers and transfer stations in the NYC area do not have an unblemished history. Portland, Los Angeles, San Francisco and San Jose have similar certifications.

4) Require source separation and recycling for carpeting, ceiling tiles, lumber, new drywall, fluorescent light bulbs and appliances with refrigerants

NYC Green Codes Task Force recommends that carpeting, large-dimension lumber, ceiling tiles, and new scrap drywall be sorted for reuse and recycling onsite. Fluorescent light bulbs and appliances containing refrigerants should also be required to be separated on site for careful recycling or disposal in order to reduce the release of toxic and damaging compounds. Once these materials are combined with other waste in single dumpster, they are nearly impossible to be recycled or reused. Source separation can actually lower waste disposal costs for lumber, ceiling tiles, and carpet. Massachusetts currently bans the landfilling and combustion of many reusable, recyclable, and compostable materials.

5) Prioritize reuse over recycling - mandatory salvage period for demolitions

We recommend providing a mandatory salvage period at the beginning of every demolition permit in which only materials salvaged for reuse or donation can be removed. Reuse should be prioritized over recycling. Per ton, reuse leads to a greater reduction in landfilling and carbon emissions, creates more jobs, and maintains more of the materials' value and embodied energy than recycling. We also recommend directing the NYC Economic Development Corporation, Brooklyn Navy Yard and other city controlled economic development zones to provide support and space for reuse centers.

6) Require city projects to obtain 75% recycling and reuse rates

New York City government projects should lead the way for construction and demolition recycling and reuse. All City and City funded projects should achieve a 75% recycling or reuse rate. Buildings seeking LEED certification must submit a Waste Management Plan and be encouraged to achieve a 50-75% recycling rate.

Additionally, all city road projects should be required to use recycled content for roadbed and asphalt. This will create a market for asphalt shingles, concrete rubble and other C&D waste.

7) Do not allow ADC or incineration to count as recycling

Do not allow the use of Alternative Daily Cover or incineration/combustion to count towards recycling rates. Grinding dry waste for use as landfill cover does not provide any environmental benefit and promotes the abuse of recycling regulations. Incineration contributes substantially to climate change and local air pollution.

Testimony Before the Environmental and Small Business Committees
Oversight: Leveraging Green Business in New York City

April, 29, 2013

10:00AM

Good Morning, Chairpersons Reyna and Gennaro, and Members of the Environmental and Small Business Committees. My name is Steven Caputo and I am the Deputy Director of the Mayor's Office of Long-Term Planning & Sustainability. Joined with me here today are Donald Giampietro, Assistant Commissioner of Business Incentives at the Department of Small Business Services; Charles Sturcken, Director of the Economic Development Unit of the Department of Environmental Protection; and David Gilford and Joe Coletti from the New York City Economic Development Corporation.

Before I begin my testimony I would like to thank you for the opportunity to speak today on the important relationship between environmental protection and small business development, and in particular the resources and incentives that the City provides to encourage both fronts. As you know, when Mayor Bloomberg created PlaNYC in 2007, his goal was to create a plan for the City's sustainability plan AND growth. This dual intention was premised on the belief that improving air quality, reducing our greenhouse gas emissions, and adapting to climate change is not only good for health and the environment, but also good for business. New York City's sustainability and its competitiveness go hand in hand.

Now allow me to briefly describe some of the incentives, resources, and programs that our City Agencies offer to encourage sustainability and small business development. I'll begin with a description of the Department of Small Business Service's Energy Cost Savings Program; then continue by describing the Department of Environmental Protection's efforts to incentivize waste grease recycling, water conservation, and clean energy; followed by the Department of Citywide Administrative Services efforts to reduce City government carbon emissions by 30% before 2017; finally, I'll describe the Economic Development Corporation's multiple initiatives to incubate technology start-ups and support the local clean-tech industry. I will close by describing how the entirety of PlaNYC, and in particular its broad initiatives to encourage energy

efficiency, convert to cleaner fuels, and unlock development, have supported the growth of small businesses and New York City's economy.

Department of Small Business Services (SBS)

SBS programs are strategically designed to lower operating costs for small businesses while promoting investment, business relocation and/or expansion within all five boroughs. These programs form part of the larger portfolio of benefits available to New York City businesses. Businesses often say, "I would like to open or expand my business here, but it is expensive. Operating and utility costs are too high. Monthly expenses pile up. Bills need to be paid. How can New York City help me offset some of these costs?"

One of SBS's lead programs is the Energy Cost Savings Program (ECSP) which seeks to attract and retain businesses in New York City. This program provides a credit against regulated electricity and natural gas costs for businesses that renovate their facilities or relocate to, or within, New York City. ECSP provides up to a 12 year benefit including phase-out and is one of SBS' most popular programs, especially among the City's small and medium-sized businesses. Last year over 700 businesses saved more than \$20 million in combined natural gas and electric costs. These businesses are typically under 50 employees and lease their space.

Specifically, a business can access the program by:

- Moving from outside New York City into the City
- Moving within boroughs from denser pressure areas in Manhattan, Long Island City and Fulton Ferry
- Renovating or building commercial office or industrial space, and
- Leasing and renovating space in property owned by the City or State of New York

ECSP promotes building and system upgrades. Specifically, if a business invests in excess of 40% of the property's assessed value, it can enjoy both breaks on real property taxes and lower energy costs. ECSP also provides one of deepest "green" benefits by encouraging the

development of clean distributed generation, or cogeneration systems. These systems, also known as 'combined heat and power' (CHP) systems, achieve high combustion efficiencies by reusing waste heat from the production of power to satisfy the buildings thermal loads.

ECSP has an emissions test to ensure only the most efficient cogeneration units are installed within the boroughs. Compared to the standard ECSP rebate, an additional benefit of 4.44 cents / kilowatt hour is available to a business that installs a qualifying cogeneration system. When a business can convert excess unused energy to usable electricity it helps relieve the City's electric grid and can further lower electric costs for the business.

ECSP provides real savings for businesses. Moreover, the program works very well with other City and State programs to help maximize the benefit to business. This includes IDA benefits and the Department of Finance's Industrial Commercial Abatement Program (ICAP). Recently one of the northeast's largest bakers and suppliers of Asian specialty food received ECSP. The firm stands to save over \$200,000 on energy costs at two of its buildings which were upgraded and modernized. In addition to ECSP, the firm also qualified for a training grant to teach existing staff new skills needed to grow capacity. Another smaller firm that manufactures precision tools was moving from very cramped quarters in a residential neighborhood to a state of the art facility in Brooklyn. The firm saved over \$11,000 annually through ECSP in combination with additional State and City programs.

In addition, the SBS Incentives team works closely with the New York State's Energy Research and Development Authority (NYSERDA), ConEd's Green Team and National Grid to promote additional efficiency programs to businesses - finding new ways to lower costs and use less energy.

NYSERDA's Commercial/Industrial programs provide energy efficiency services for existing buildings, new construction and industrial facilities. Programs include:

- FlexTech Program, which provides cost-sharing up to \$1M for technical studies to identify and cost-effective energy efficiency measures
- Energy Audit Program for small businesses and non profits with less than 100 kW

- New Construction Program to incorporate energy-efficiency measures into the design, construction, and operation of new and renovated buildings; and
- Existing Facilities Program that offers a variety of energy projects including Pre-Qualified Measures and Performance-Based Incentives

In addition to NYSERDA, the local utility firms offer programs to promote energy savings. National Grid has a variety of programs including the New Construction Program, which offers financial incentives to defray costs of replacing old equipment or renovating space for large commercial customers. The equally popular Small Business Program helps businesses lower costs and improve energy efficiency through heating system modifications. ConEd has its own roster of incentives such as the Commercial & Industrial Energy Efficiency Program, which gives cash rebates for installing energy efficient electric and gas equipment. There are free energy surveys, free thermostats, and up to 70% rebates for lighting, heating and cooling upgrades.

If a business is willing to commit to growing in New York by either relocating within the City or modernizing its space, the City and State can provide programs to lower monthly energy cost and reduce energy usage - both for the short and long term. SBS' NYC Business Solutions has a team dedicated to help access, apply and determine eligibility for all these programs.

Department of Environmental Protection

DEP is the agency charged with protecting public health and the environment by supplying clean drinking water, collecting and treating wastewater, and reducing air, noise, and hazardous substances pollution. In carrying out its mission, DEP has programs to encourage the implementation of green projects both with businesses and private property owners. The Economic Development Unit (EDU) of the DEP's Bureau of Communications and Intergovernmental Affairs fosters the joint goals of economic development and environmental protection by offering compliance and technical assistance to New York City industrial and commercial establishments, including small businesses and trade associations, and by promoting environmentally sound business practices.

For example, EDU performs workshops for restaurants regarding the proper management of oils and grease, which includes the recycling of used cooking oil (or yellow grease) for biofuels, which can yield revenue for the restaurant. In conjunction with NYC Media, EDU has also produced three educational “how-to” videos for the business community on proper grease and oils management and recycling, music and noise mitigation—mainly for restaurants and bars—and on backflow prevention devices, which prevent contaminated water from entering our world-class water supply. These videos help businesses become more ecologically responsible neighbors, stay in compliance and avoid fines.

Through DEP’s connections to New York City hospitality and restaurant associations that often co-sponsor the workshops, we also spread the word about greening restaurants by encouraging greater energy efficiency and wise water use. Restaurants and other businesses can request a free water audit from DEP. This audit is conducted by DEP’s contractor for the program, Honeywell Utility Services, and helps to identify areas where owners can conserve water and energy and reduce operating expenses. Additionally for restaurants, if warranted, the Honeywell technician performing the audit will install (at no cost) a low-flow pre-rinse spray valve on the automatic dishwasher. The hospitality industry also benefits from workshops for owners of bars and clubs on how to lower noise coming from their establishments, an often overlooked environmental and health impact.

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qualify to be vendors for the renewed toilet replacement program. DEP will award up to five contracts with such vendors in Phase I of the program, in which up to 250,000 toilet fixtures may be sold in the next two years, generating up to \$30 million in retail sales. It costs approximately \$270 in plumber costs to install a toilet. Many of the toilet replacement program participants will be hiring plumbers, thereby generating work for plumbing businesses that could be upwards of \$60 million. Phase II of the program will replace an estimated 550,000 toilets, having the potential to generate another \$70 million in sales in the following three years. Plumbing businesses' labor revenues may be upwards of \$140 million during Phase II. DEP is also looking to replace an additional 100,000 commercial toilets in the next five years, each retailing at \$800-\$1,000, through its Municipal Water Efficiency Program. DEP and the School Construction Authority are relying on local plumbing business to do the purchasing of supplies and installations.

Last year, DEP signed an Amended Consent Order with the New York State Department of Environmental Conservation to include green infrastructure, or stormwater management practices, into our overall strategy to manage stormwater runoff. Green infrastructure is a cost-effective technique to mitigate combined sewer overflows and improve water quality in our local waterways. DEP has allocated \$1.5 billion for green infrastructure investments over the next 20 years and in the first phase of the program DEP will spend \$187 million by FY 2015 to primarily retrofit the City's streets and sidewalks with green infrastructure, in the form of right-of-way bioswales and stormwater greenstreets. These construction projects will be bid through DEP, the Department of Parks and Recreation, the Department of Design and Construction and the Economic Development Corporation. There will also be professional services contract solicitations for design and construction management through DEP, DDC, and EDC.

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To encourage the development of green infrastructure on private property, DEP manages a grant program to fund the design and construction costs for privately-developed projects within

combined sewer areas. The grant program, which is ongoing, typically makes \$4-\$6 million available for grants in each cycle, and the average award amount has been approximately \$350,000. To date 18 projects have been funded including eight green roofs, one rooftop farm, and five rain gardens.

Building owners who want to install green roofs can also benefit from the New York City Green Roof Tax Abatement program, which currently offers a \$4.50 per square foot property tax abatement of up to \$100,000 (or the building's tax liability, whichever is less) per green roof installed. DEP has been working with the Office of Long-Term Planning and Sustainability, the Department of Buildings, the Office of Management and Budget, and the Department of Finance, as well as environmental advocates and green roof designers to modify and extend the tax abatement after its expiration earlier this spring. DEP met with stakeholders and agency partners to identify ways to improve response to the program, increase the number of green roofs in the City and support the transformation of the local market for green roof materials and labor. Proposed modifications will extend the program for five more years; increase the value of and raise the cap on the abatement; add native and agricultural species to the possible plantings; and allow the addition of controlled roof drain systems.

Overall, the scale of the green infrastructure program will be considerable. Though only in the first years of implementation, the green infrastructure plan has increased work opportunities for the trade sectors, including surveying, geotechnical services (drillers) and landscape contractors, in addition to general contractors and trades. DEP expects the economic impact of the program to continue as we go forward.

A final area in which DEP is fostering the growth of small businesses is its efforts to reduce carbon emissions and support clean energy as part of the City's 30 by 17 program, which seeks to reduce City government greenhouse gas emissions by 30 percent before 2017. In partnership with the Department of Citywide Administrative Services (DCAS), DEP has embarked on a solar power public-private partnership that will reduce the City's carbon footprint, improve air quality, and increase the reliability of the electricity grid, particularly during the hottest months of the year. Tangent Energy Solutions, a private energy services company, will install solar arrays totaling more than 1.85 megawatts on the roofs of four City buildings in the Bronx and Staten

Island, including the Oakwood Beach Wastewater Treatment Plant. Together, the solar installations will produce more than 2 million kilowatt hours of electricity annually – enough to power 245 residential homes – decrease greenhouse gas emissions by 1,636 metric tons a year and help City government reach its PlaNYC goal of reducing municipal greenhouse gas emissions by 30 percent by 2017. Under the program, which comes with no up-front capital cost, the City will not be responsible for purchasing, owning, installing or maintaining the system, and can purchase the electricity generated from it. As a result, the City is set to save more than \$8 million compared to the cost of installing the solar systems through its capital construction program, and the four projects will help bring more than 40 new green jobs to the city and pave the way for more similar projects—both public and private.

Department of Citywide Administrative Services

The City of New York believes in leading by example, which is why in 2007 the City committed to an accelerated timeline for reducing its greenhouse gases by 30% in just ten years, by 2017. To achieve this goal, the City has allocated 10 percent of our \$800 million energy budget—roughly \$80 million a year—to reduce energy consumption in City buildings, and invest in clean distributed generation and renewables. As of mid-last year we completed over 150 retrofit projects since 2008 and have over 100 active projects underway, which together will result in an additional \$36 million in energy cost savings a year, and we expect to accelerate this pace of investment. DEP and other City agencies also have a large capital budget for retrofitting city-owned property that includes numerous projects directed toward the city's sustainability and energy efficiency. Over 25 electrical, HVAC, and plumbing firms participate in the implementation of these projects

In addition, we want to make City government a testing ground for the most promising energy technologies and concepts. We have worked closely with City Council Speaker Christine Quinn's "Municipal Entrepreneurial Testing System" (or METS) program. The City has invited green product companies to submit applications for beta-testing of their products in City-owned and managed buildings, and technologies are current being installed within 6 City agencies.

Another area of innovation has been the City's effort to create the foundation for a smarter grid network for City government buildings through real time energy metering. This system will help us perform automatic peak load shedding, which will help to reduce strain on the grid on really hot days like today. The City currently commits 20 MW of peak load reduction and we are in the process of procuring a vendor that will help us expand to 50MW.

New York City Economic Development Corporation

Now I'd like to tell you about the efforts of the New York City Economic Development Corporation. The overarching theory of EDC's efforts is that "greening" our economy will be driven both by generating increased demand for "green products and services" in the City and ensuring that our City is home to leading companies and suppliers to meet that demand. That is why EDC has launched numerous initiatives to encourage New York City based businesses to take advantage of economic opportunities made possible by the urban sustainability agenda, thus cultivating "green industries" that we believe will have competitive advantages here in NYC.

On the demand side, EDC is working to position NYC as one of the nation's major consumers of renewable energy by championing industries like solar and wind energy. As a member of NYC's groundbreaking Solar America City Partnership with Sustainable CUNY and the Mayor's Office, EDC helped to obtain and administer funding from the US Department of Energy to create resources that would foster the growth of the local solar industry. These efforts included establishing five Solar Empowerment Zones—or areas where installing solar photovoltaic (PV) energy systems would yield the greatest benefits to the electricity grid. To encourage installation in these zones, special benefits and support are available both from the Solar America Cities Partnership. Additionally, the partnership created the NYC Solar Map, a free, interactive tool that helps New Yorkers understand the potential for solar energy anywhere in the city. Users can determine the technical potential for their rooftops, evaluate project economics and available incentives, and compare these characteristics to surrounding rooftops. Since its launch in 2011, the NYC Solar Map has received tens of thousands of visits and has

helped to document the increasingly strong value proposition for installing solar in New York City.

In 2009, NYCEDC launched the Solar Thermal Pilot Program, a competitive grant program that provided financial assistance to City-based building owners that installed solar hot water systems. The program offered grants of 30% of installation costs and up to \$50,000 per solar thermal system. Four projects were selected and built as demonstration projects. NYCEDC continues to monitor the systems' performance with the goal of releasing an evaluation of findings later this year. Other solar and wind installations being undertaken include the planned solar array at the Brooklyn Army Terminal and an Urban Wind Demonstration project, which involves installing a small roof-top mounted, vertical axis wind turbine at the Hunts Point Food Distribution Center.

To ensure New York City's capability as a supplier of "green products and services," NYCEDC and other City agencies work diligently to foster the growth of cleantech in NYC. That is why EDC has built a network of "incubators" across the city that provide low-cost office space—currently over 120,000 square feet—as well as training and networking opportunities to hundreds of start-ups and small businesses. Approximately 600 startup businesses currently reside at City-sponsored incubators and these companies have raised more than \$78 million in investor funding as of mid-2012. Successful incubator "graduates" include Ecologic Solutions, a manufacturer of green cleaning products founded in our NYU-Poly Incubator on Varick Street in Manhattan.

This past January, we went a step further by announcing plans to launch a Clean Teach Entrepreneur Center, which will become the City's first incubator dedicated to assist cleantech and energy entrepreneurs with the unique challenges they face in starting and growing early-stage companies in New York City. The center will serve to develop new sustainable technologies through collaboration, innovation, commercialization and entrepreneurship, supporting our growing ranks of cleantech innovators. It will provide affordable workspace for entrepreneurs, as well as space for demonstrating and showcasing products and services. Entrepreneurs will be able to work with mentors in the field to guide their work and participate

in programming crafted to the needs of cleantech product development. NYCEDC will select an operator to manage the center by this summer, with the goal of opening it by the end of 2013.

In order for the cleantech industry to sustain long-term growth in New York City, NYCEDC and the City are also ensuring the next generation of leading scientists and researchers train and work here, which is why a significant element of the Mayor's Applied Sciences NYC initiative will be focused on issues of sustainability. We've already announced three new engineering projects to be built across the City – a campus development by a joint venture of Cornell and Technion, a campus being developed by a consortium led by NYU and including academic partners like The Indian Institute of Technology, Bombay and Carnegie Mellon University, and a new institute to be run by Columbia University. Together, these projects will leverage investments of \$3 billion by some of the world's top research universities, ultimately more than doubling the number of full time graduate engineering students in the five boroughs. Not only will campuses themselves be green, like Cornell's new campus featuring the largest net zero energy use building on the East Coast, but much of their academic focus will also be green. Cornell and Technion announced that one of their three initial areas of concentration will be developing new technologies to make the built environment more sustainable; NYU's consortium will use data analysis and informatics to monitor and address energy consumption and transportation issues in New York City and large cities around the globe; and Columbia's new Smart Cities Center will aid the development of green infrastructure and the use of smart grid technology to improve the power supply. Although the Applied Sciences NYC initiative is still in its infancy, it is important to note that the investment the City and these institutions are making in environmental advancement will serve businesses for years to come.

NYCEDC and the City also recognize that the green sector is evolving, which is why in 2011 we began work on a study called Green NYC 2025. Through this study, we are taking a closer look at the changes within the industry, what it means for New York City and NYC-based companies, and what NYCEDC and the City can do to further support growth in the rapidly emerging green sector. Currently, NYCEDC is finalizing the study and we anticipate releasing its findings later this year.

Conclusion

In closing, I'd like to suggest that we are experiencing a tremendous period of innovation in the sustainability and energy sectors, no more so than here in New York City. New York City is working to solve some of the nation's biggest energy challenges—particularly in the realm of energy efficiency, and this is helping to unlock private sector investment.

What's unique about NYC is that almost 75% of our carbon emissions originate from energy consumed in buildings. This means that buildings are incredibly valuable assets in our sustainability strategy. Understanding the very DNA of our building stock—how buildings consume and produce energy—will help us build an information economy around buildings.

In late-2009 we worked with Chairman Gennaro and the City Council to pass a suite of legislation known as the Greener Greater Buildings Plan, which requires buildings over 50,000 square feet to report their energy consumption—a process known as benchmarking—and undertake cost-effective efficiency measures. These buildings represent just 2 percent of our total number of buildings, but they are responsible for approximately 45 percent of total electricity consumption. To date, over two billion square feet of real estate have measured annual energy and water consumption to gauge the performance of their buildings. To put this in perspective, this amount of real estate is equivalent to the combined built area of San Francisco and Boston. The resulting data set is the largest ever assembled by a municipality and as the data becomes public it will be a key driver for private sector investment in energy efficiency.

One key takeaway of the first two years of benchmarking is that there is significant variability of energy use within every building category. From multi-family buildings to commercial offices, the worst performing buildings use 3-5 times more energy than the best performing buildings in any sector. This means that if we can bring the most inefficient buildings up to the median energy use intensity, we can save up to 20% in energy use in this sector, which could mean 10% citywide. On the whole, we are finding that the most energy efficient buildings—the top quartile of performers—are distinguished by their consistent maintenance practices and lack of outmoded or broken equipment. This is a remarkable result as it gives us an initial indication that there is significant and cost effective energy efficiency potential in the City.

All of this energy efficiency potential means business. By creating what we like to call an “Energy Information Economy” we have made energy performance data a key aspect of the real estate equation. It is our goal to foster home-grown enterprise to lead in this economy. New York City already has some of the greatest minds and most competitive businesses, and our goal is to attract more of them. We are on a path to becoming a world class center for clean energy investment and innovation. We look forward to working with you to making that vision a reality, and a driver of economic growth in New York City. Thank you for the opportunity to testify and we are happy to answer any questions you may have.



**New York City Council Hearing: Leveraging Green Business in New York City
April 29, 2013**

Testimony of Kevin Mannle
Associate Vice President for Facilities Management
New York Hospital Queens
City Council Committees on Small Business and Environmental Protection

Good morning Chairs Gennaro and Reyna and the members of the Environmental Protection and Small Business Committees. I am Kevin Mannle, Associate Vice President for Facilities Management at the New York Hospital Queens located at 56-45 Main Street in Flushing. Thank you for the opportunity to testify today.

New York Hospital Queens (NYHQ) is a premier healthcare institution serving our borough with world class health services in clinical care, patient safety, education, clinical research, and service. NYHQ is a proud member of the New York-Presbyterian Healthcare system and an affiliate of the Weill Medical College of Cornell University. We have grown to become a 535-bed acute care hospital that last year saw hospital discharges of 35,366 patients, performed 16,829 inpatient surgical procedures, 4,366 new born deliveries, 15,186 ambulatory surgery / Endoscopy procedures, 126,431 emergency encounters, and 143,529 ambulatory care visits. The hospital employs over 3,600 people.

NYHQ has had a deep commitment to sustainability for at least a decade and has employed a number of strategies that reduce Hospital emissions, improve City air and water quality, and help NYHQ save money on waste and energy costs. I plan to share these with you today. I will note, however, that to successfully move a program forward, we had to partner closely with important stakeholders including our employees, the local community, other hospitals, the Environmental Protection Agency, The New York City Office of Sustainability, NYSERDA, and other State and Federal agencies.

In 2009, NYHQ joined the PlaNYC Mayoral Challenge to healthcare institutions. The challenge would provide NYHQ with an opportunity to explore means and methods to increase sustainability efforts with a group of challenge partner hospitals. In 2008, NYHQ became an EPA Healthcare Partner through the signing of a MOU to make energy conservation and awareness a priority across the institution. An awareness campaign was already established whereby a section of the monthly employee newsletter was dedicated to promote conservation tips and raise awareness. The section was called "bright ideas."

NYHQ recognizes the link between human health and the condition of the natural and built environment. NYHQ employees and physicians are frequently inquiring as to what sustainable and green practices are in place at the hospital and how NYHQ was reducing its environmental impact. NYHQ recognizes the importance of these stakeholders' concerns and recognizes the need to advance sustainability efforts and raise awareness among staff, patients, and the public. The Mayor's carbon challenge has been a spring board to a much larger sustainable movement at NYHQ.



In making the decision to join the Mayor's Carbon Challenge we considered the following: We are invested in our buildings, some of which we have owned since the 1950's. We will be the owner and caretaker of these facilities for many years to come. We recognize that any enhancements and improvements in efficiency would benefit the hospital for years to come. We also saw the opportunity to pool resources and ideas with challenge partner hospitals and other participating agencies such as NYSERDA, DEC, Con Edison, USDOE, EPA, and others. We hoped to become an environmental role model through the reduction of our greenhouse gas emissions, reducing our impact on the city's aging infrastructure, and assisting in the development of the city's future. An increase in access to program resources was also anticipated and considered a benefit.

NYHQ signed on to the carbon challenge program December 22, 2008 and was present at the May 2009 press conference at Bellevue Hospital announcing the participating hospitals. We have actively participated in the challenge program from its inception through attendance at challenge partner meetings, education sessions, and conferences. NYHQ also hosted an early challenge partner meeting and presented its early progress to the challenge partners.

At the beginning of the carbon challenge, NYHQ began to use the EPA Portfolio Manager to benchmark energy usage across a national database of hospitals. We continued to run our Bright Ideas messages in the monthly employee newsletter and began to further publicize our efforts at the annual employee bar-b-q. Regular meetings to engage senior leadership in energy management and energy reduction strategies were initiated. We became an EPA Watersense partner as well and committed to reviewing water conservation methods. Two flex tech studies were undertaken with NYSERDA assistance. The studies involved chilled water piping analysis and retro-commissioning an existing piece of infrastructure. NYHQ also began to explore green purchasing, green computing, solar energy, and CHP.

Our first major project was the **replacement of our high pressure boilers** with dual fuel high pressure boilers that primarily operate on natural gas. The original boiler plant operated on #2 fuel oil which results in heavier carbon emissions. The new boilers are more efficient and they run on natural gas which is cleaner burning. We went from an annual burn of approximately 725,000 gallons of oil to an average burn of 20,000 gallons. As a result the new boiler plant uses 20% less energy due to the higher efficiency of the new equipment. The combination of less energy and the cleaner burning gas, results in the elimination of 3,400 metric tons of carbon emissions. This is equal to the annual carbon emissions from 708 passenger vehicles. There is also an economic benefit to the new boiler plant. In addition to using less energy which relates to lower costs, natural gas is a cheaper fuel. Due to the increase in fuel oil prices and lower natural gas prices, in 2012 our annual savings are \$2.1m annually.

Another early project targeted **electricity usage**. All campus air handlers and spaces were surveyed to identify spaces that are not occupied 24/7. Areas identified were then cross referenced to the campus air handler scheduler. When an area was identified and it was served by a dedicated air handling unit, the Building Maintenance System and air handler controls were upgraded and programmed to set back space temperatures and in some occasion to shut down the air handling unit all together. This saved just over 500,000 kWh of electricity per year. That is a 2% reduction in electricity use. This results in the elimination of 211 metric tons of carbon emissions, and is equal to the annual



carbon emissions from 44 passenger vehicles. Once again there is a financial benefit as NYHQ saves approximately \$62,000 annually in electricity costs.

In the past 15 years, there have been several **lighting upgrade** projects at NYHQ, and many spaces have been renovated to include new lighting, so there were few lighting upgrades opportunities. However, the ability to better control lighting was explored. Occupancy sensors and photo cell controls were subsequently installed to control over 500 light fixtures. Occupancy sensors sense motion and turn lights on when someone enters a room, and shut lights off when the room is vacant for a period of time. These switches were installed in offices, patient bathrooms, pantries, store rooms, locker rooms and similar locations where lights are often left on all day as patients and staff are often entering and using these rooms. Photo cells pick up natural light and keep light fixtures turned off when enough natural light is present. These are used in rooms and corridors with large amounts of windows and they keep the lights off during daylight hours. This initiative saves 70,000 kWh of electricity per year. This results in the elimination of 30 metric tons of carbon emissions, and is equal to the annual carbon emissions from 6 passenger vehicles. These lighting controls save approximately \$12,000 annually in electricity costs. The installation costs were \$18,000 and paid for themselves in just 1 ½ years.

In 2011, NYHQ began a project to **retro-commission** a large air handling unit. This was a follow up to the NYSERDA flex study previously mentioned. The equipment was underperforming and the areas served had seen a huge increase in use, occupancy, and intensity as well resulting in poor temperature control. The motors were replaced with energy efficient motors. New heating and cooling coils were installed along with new controls and variable frequency drives. A VFD allows the motor to operate at lower speeds when the space temperatures are adequate, thus saving electricity. Previously the motors operated at 100% all the time. Today this unit uses 25% less electricity than before and the areas served have much better heating and cooling capabilities. NYSERDA helped fund the study and designs, and Con Edison helped fund the actual work on the unit. This initiative saves 250,000 kWh of electricity per year. This results in the elimination of 106 metric tons of carbon emissions, and is equal to the annual carbon emissions from 22 passenger vehicles. Annual electricity costs are cut by \$40,000.

Another significant energy project at NYHQ was a **central chiller replacement**. Our central plant consisted of 3 large chillers which provide air conditioning to the campus. One unit needed to be replaced, and we explored using the most energy efficient unit possible. A "super efficient" electric centrifugal chiller was selected. This unit uses 17% less electricity than standard units. The additional cost for the super-efficient chiller was \$180,000 and NYSERDA provided a rebate of \$87,000 which brought the simple payback on the upgrade to less than 3 years. Overall this chiller reduced our carbon emissions by 1,655 metric tons per year and is equal to the annual carbon emissions from 325 passenger vehicles. Annual energy costs have also been reduced by over \$300,000 per year. The simple payback on the complete project is approximately 7 years.

In 2010, NYHQ opened a brand **new building** which houses ambulatory surgery, interventional cardiology and radiology, 80 new inpatient beds, physician practice space, a mechanical floor and two shell floors for future use. New technology and new equipment have helped to make this building a more efficient and sustainable part of our campus. Higher quality insulating materials and windows



improve the exterior envelope while energy efficient infrastructure minimizes our energy consumption, and low flow lavatory and toilet fixtures reduce water consumption.

All of the above energy related projects provide significant **benefits to our community**. By virtually eliminating the use of fuel oil NYHQ improves air quality. Fuel oil discharges soot and pollutants into the air, deplete the ozone layer, increase the occurrence of asthma and other respiratory problems, and can increase a variety of other health risks such as cancer and cardiovascular disease. By reducing overall carbon emissions, NYHQ is contributing to improved air quality throughout New York City. In addition, by reducing our consumption of natural gas and electricity, we reduce stress on the city infrastructure thereby helping the utility companies avoid gas and electric interruptions to consumers. Operational savings within the hospital allow for this money to be spent on improving NYHQ's healthcare services to our community.

All of the above projects made a financial impact at NYHQ. They also **helped the local economy** through the hiring of designers, contractors, and suppliers. NYHQ hired design engineering firms to develop and design the retro-commissioning project and chiller plant upgrade. Several of these firms are "green" companies. Boorum Energy Engineers performed our initial chilled water study and they are a NYSERDA approved contractor. We have also used the services Lizardous Engineering, Cannon Design, and AKF Commissioning. All of these firms have been in the consulting engineering business for many years and all have experts on staff who are LEED certified professionals working on sustainable projects. Many local contractors and suppliers provided services and supplies for these projects as well.

NYHQ also employs a full service energy advisor to assist in managing energy budgets, commodity procurement, regulatory compliance, financing energy projects, and developing sustainable practices. **Gotham 360** is a woman-owned business and Energy Star Service Provider. The staff at Gotham 360 have been instrumental in helping NYHQ shape its many green strategies. Gotham 360 has assisted NYHQ in the selection and hiring of NYSERDA flex tech providers, researching energy financing opportunities, and obtaining energy incentive grants and rebates. They also manage our compliance with New York City Local Law 87 (Energy Audits).

In addition to energy related projects NYHQ has embarked on a variety of efforts aimed at reducing our consumption, increasing our recycling efforts, reducing hazardous and medical waste streams, and improving air and water quality in our community. NYHQ has created a **Sustainability Council or Green Team**. The main charge of the Green Team is to further enhance and expand existing green practices and encourage further participation by all NYHQ stakeholders. The team researches and develops sustainable initiatives for consideration at NYHQ. The Green Team sponsors an annual Earth Day Fair to promote the many sustainable initiatives currently in place at NYHQ.

One of our newest initiatives is the installation of a **green roof**. The project's goal is to decrease the amount of storm water and sewer overflow into adjacent waterways. The project is part of a New York City Department of Environmental Protection (DEP) grant entitled "Flushing and Gowanus Green Infrastructure Grant Initiative." The grant program was created to encourage the large scale development of green infrastructure projects that will reduce storm water runoff during wet weather.



Storm water runoff can carry sediment, trash, fertilizers, solvents, and automobile fluids from paved surfaces into the local waterways. The negative impacts of these elements entering our waterways are well documented. Additionally, in New York City the sewer system and the storm water system are combined. During heavy storms, this system often reaches capacity and a mixture of storm water and wastewater is discharged into local waterways. Our installation was targeted by the City due to its proximity to Flushing Bay, as it suffers from very poor water quality.

Manhattan College was the grant recipient and they championed the project. Scott Lowe, Ph.D., P.E., associate professor in Manhattan College's school of engineering and lead investigator for the project, is partnering with HDR Engineering, an architectural, engineering and consulting firm, to design and install 20,000 square feet of modular green roof. Manhattan College engineering students will be involved at every stage of the project. Once the roof is installed, students will gather and analyze data over a four-year period to determine how much water is being captured.

The green roof uses vegetation and soils to absorb and evaporate water. The main benefit of this installation will be improved water quality in nearby Flushing Bay. In addition, this project will help shade and cool the City, improve air quality, and reduce energy costs within our buildings.

Another water related project is the installation of point of use **water coolers and hydration stations** in the hospital. Traditional water coolers that use 5 gallon water jugs were removed and replaced with point of use water coolers. These coolers use city water and filter and cool the water at the point of use. This eliminates the need to have 5 gallon bottles of water delivered to the hospital weekly, resulting in reduced truck traffic and vehicle emissions. Hydration stations were installed in several staff and public locations to reduce the amount of plastic water bottles used at NYHQ. In almost two years these stations have filled the equivalent of 50,000 single use water bottles. It is estimated that 39 billion water bottles are consumed annually in the U.S. and only 31% of these bottles are recycled. Our stations eliminate the use of water bottles and encourage the use of refillable containers. NYHQ handed out a refillable water bottle to all employees last year to further promote these efforts.

The Green Team also works to continually increase our **recycling** efforts and reduce harmful waste streams. Recycling bins are placed throughout the facility and "trash audits" are routinely performed to educate staff and find additional opportunities. Specific training is provided to departments who handle medical waste, universal waste, and hazardous waste. Today NYHQ recycles just over 17% of all waste and diverts over 21% of all waste from traditional municipal waste streams. Regulated medical waste accounts for less than 5% of all waste. Leading environmental organizations target 15% recycling rates in hospitals and RMW rates below 10% as first tier benchmarks, and NYHQ already exceeds both of these measures. Once again, our sustainable efforts have an impact on the economy. Our waste contractor, Stericycle, is committed to environmental protection and sustainable solutions and they provide a number of staff to oversee our waste programs at NYHQ. They are also a vendor partner member of our Green Team.

A recent initiative in our Pathology department was aimed towards reducing our use of formalin. Our formalin reduction program focused on offering several sized working containers in the labs and staff



education on the initiative. These efforts have resulted in a 35% reduction in the use of formalin, which translates into cost savings and a reduction in the amount of hazardous waste NYHQ generates.

At our loading dock, we now recycle all shipping pallets and shrink wrap in partnership with our largest suppliers. The pallets are reused and when they degrade, they are turned into garden mulch. The shrink wrap is sold to a vendor and turned into a material used in the production of Trex composite lumber. Our operating room is taking strides to reduce the amount of blue wraps used and to cut down on the quantity of packaging materials used.

In 2012, NYHQ completed the construction of a new central sterile department. The new equipment uses the latest technology and uses a water recycler to reduce water consumption. Most importantly, we eliminated all ethylene oxide sterilization equipment. ETO is a hazardous material used to sterilize operating room and invasive procedure equipment. Our new sterilizers are able to process this sensitive equipment without ETO. As a result, NYHQ now uses absolutely no ETO.

There are also many more initiatives in development. NYHQ is currently conducting a **co-generation** feasibility study. NYSERDA is assisting with partial funding of the study. Genysis Engineering, a green business and NYSERDA Flextech provider, is performing the study. If the study is favorable, NYHQ will look to develop an onsite co-generation plant to produce electricity on site. The benefits include cleaner energy and reduced costs.

NYHQ is also issuing an RFP for an **energy advisor firm**. This firm, once selected, will investigate smaller opportunities to improve infrastructure and reduce energy use and will try to find programs offering incentives to offset the installation costs. Project may include parking lot lighting, stairwell lighting, pump studies, and hot water production.

We are also taking proposals from vendors who provide utility monitoring oversight. These companies monitor our energy use in real time, and stay in touch with central plant operators and assist them in developing strategies to reduce energy use in central plants.

Our Food and Nutrition department is investigating the use of local suppliers which will reduce transportation costs and the associated environmental impact. They are also looking to begin a re-useable coffee mug program and cut down on the number of disposable coffee cups used at NYHQ. Green cleaning has been a long standing practice at NYHQ and we currently look to install no wax flooring as frequently as possible which reduces our use of floor wax.

TO CONCLUDE: I hope this testimony provides some valuable insight into the many green initiatives currently in place and in development at NYHQ. They have provided and continue to provide numerous benefits to our hospital and our community. Thank you for the opportunity to testify today and I would be happy to answer any questions you may have about New York Hospital Queens' green initiatives.

Green Choices Consulting Testimony
Oversight: Leveraging Green Business in New York City
Monday, April 29, 2013 at 10:00 a.m. in the
14th Floor Committee Room, 250 Broadway, New York, NY.

Introductory Remarks:

Thank you. My name is Billii Roberti and I am very honored to be invited, at the behest of Ms Samara Swanston, to give testimony to this joint hearing of the Environmental Protection and the Small Business Committees. Ms Swanston believes that I can offer a unique point of view to this hearing. It is my first experience, so please be as forbearing as possible.

You know, you don't have to wear ragged jeans and Birkenstocks and have a scraggly beard to be "green." In fact, you can wear a business suit and wingtip shoes or heels and still walk gently on the Earth. What distinguishes the "green" person is his or her commitment to "green values:"

- Wise use of planetary resources
 - Environmental 3 R's: Reduce, Reuse, Recycle
 - Energy efficiency & self-sufficiency using renewable energy
 - Clean air, clean water, clean soil
- Enhancing the health and safety of both indoor & outdoor environments
- Sustainability, working in partnership with others and the Earth
- Respect for the planet and its ecology

Who We Are

I am a native NYer, growing up in Bayside and attending public schools, including The Bronx High School of Science. I am grateful for the education and scientific rigor I received at this nationally-recognized school; this quality education continued at the University of Rochester, where I graduated in 1976. I have lived in Huntington since 1988.

My partner is Ira Zucker, who was born in Jamaica and moved to Plainview when he was in middle school. He graduated from Hofstra University around 1979.

Together we are Green Choices Consulting, of Huntington Station, NY. Our tag line is: "*Green advice that returns green to your pocket.*"

I am not here to give statistics about the greening of America's businesses or any other kind of statistics. I am here to give personal, real-life information about what I do, why I do it and how greening homes and businesses can be easier than most people think.

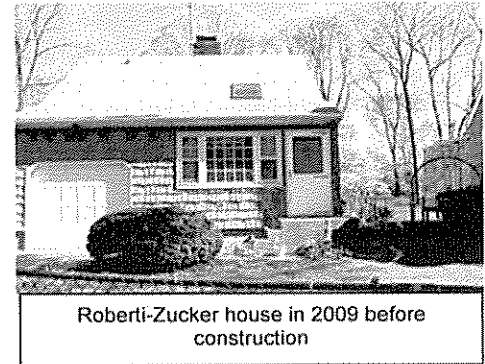
How We Became Green Choices Consulting

The seed from which this business sprouted was my desire to invest in green technologies. In the end I didn't invest in stocks or mutual funds—with the way the stock market was going in 2009 these investments seemed "theoretical" to me—but in our home. This way, instead of receiving a monthly brokerage statement on any losses or gains, I would receive *lower monthly utility bills guaranteed*. This was a return-on-investment I could live with!

Inspired by countless TV programs—Steve Thomas' *Renovation Nation*, *Greenovate* and *Life with Ed* (all on the PlanetGreen channel, which has since been re-named and re-branded) and the DIY Channel, among others—we sought out and evaluated the many green options and concepts presented on these shows.

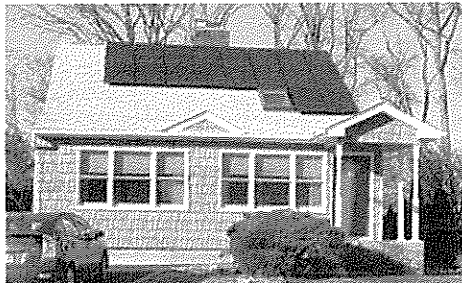
In 2010, after two years of researching the best methods and products for us, we moved out to live in a nearby apartment. With Ira in charge as general contractor, our subcontractor gutted our Cape Cod home. In addition to weather sealing and insulating the building envelope and replacing all the windows and doors with Energy Star® ones, we installed a geothermal heat pump system and solar panels.

Our goal was a “net-zero” house. A “net-zero” house is one with zero net energy consumption and zero carbon emissions. It produces all the electricity it needs to function.



Although this goal was not fulfilled because we couldn't install enough solar panels to meet our electricity needs, our total utility costs decreased from \$3186 in 2009 (the last full year we were in the house before construction) to \$1809 in 2012; that's a **43% reduction**, while heating oil prices have **increased 44%** from 2010, the last time we purchased fuel oil (based on NYSERDA's average home heating oil prices for Long Island dated April 16, 2013).

But we did realize a Home Energy Star (HERS) rating of 95. LIPA awarded us with \$10,000. We expect to attain a Leadership in Energy and Environmental Design (LEED) rating of silver or perhaps even gold. NYSERDA will grant us \$5,000 for this accomplishment.



Roberti-Zucker house in 2010 after construction

After our “greenovation” our Home Energy Star® Yardstick score, which can be calculated on the EPA's web site, rose from 4.3 to 9.2!

The Home Energy Yardstick is a basic performance-based home assessment that looks at the actual energy use of your home (based on your last 12 months of utility bills) compared to that of similar homes. To ensure that homes across the country can be properly compared, the Yardstick uses a statistical algorithm to take into account the effects of local weather, home size, and number of occupants on your home's energy use.

We also had a before and after home energy audit. Results showed our house went from 22 air changes an hour (ACH) before to 5 after our work was done. That had been one drafty house!

After the completion of this project, we realized few homeowners and commercial property owners would have the time, energy or technical know-how to adequately “greenovate” their buildings. So we tell our clients “We are here to help *you*. You know your business. Let us help you stay focused on it and leave the ‘green’ research to us.”

As a result of my interest and experience, I was nominated to the Town of Huntington Renewable Energy Task Force. Part of our mandate is outreach, so I helped develop a PowerPoint presentation for residents about home energy efficiency that we have given in local libraries. We talk about how we waste energy, how we can save it—and money!—and how homeowners can receive a free comprehensive home energy audit through NYSERDA and obtain funding and loans to make improvements outlined in the audit.

And then I became a charter member of the Long Island Geothermal Energy Organization (LI-GEO), which just incorporated in October of 2012. It is a 501(c)6 nonprofit trade association with the specific goal to advance the use of geothermal ground source heat pumps as a solution to Long Island's heating and cooling needs.

What We Do:

At Green Choices consulting our aim is to foster what is called the Triple Bottom Line:

- Environmentally
- Economically
- Socially

Responsible principles, projects and technologies in our consulting.

We work with home, business and commercial property owners to lower utility bills and bring more energy efficiency, health and environmental responsibility to their spaces. We help them set priorities and distinguish the "greenwashing" and "green-bashing" factoids from the proven facts.

This is ground-breaking work. No one else does what I call "360°-green" consulting—and we are only in the start-up phase of our business.

We ask our clients:

What are your goals?

Have you had a comprehensive energy audit? This energy audit is the first step. You have to know *where you are* to know how to get to your goal.

How old is your heating and cooling system? Is it reaching the end of its life?

Are you planning to do construction on your home or place of business?

Do you choose to know about:

Lowering your utility bills with energy efficiency measures?

Green and healthy building materials?

Green furnishings?

Insulation and weather sealing?

Air and water purification?

Renewable energy technologies?

Organic yard care?

Green household cleaning products?

Example

An example of what we do is what I call "re-lighting." A simple change we advise our clients to do is to replace their incandescent, halogen, etc. light bulbs with light emitting diode bulbs (LEDs). LEDs are more efficient than compact fluorescent bulbs (CFLs), contain no mercury, run cooler and last longer. They can pay for themselves within 12 months or less, and as the price drops so does the payback time. To determine your exact return on investment, you can go to one of many online LED ROI Calculators. Here is one table showing the relative costs of incandescent, CFL and LED lights.

Energy Savings Calculator for Replacing Light Bulbs

	Incandescent Light Bulbs	CFL (Compact Fluorescent Light Bulbs)	LED (Light-Emitting Diode Light Bulbs)
Life Span (in hours)	1,500	10,000	60,000
Watts	60	14	6
Cost of bulb	<u>\$1.345</u>	<u>\$2.98</u>	<u>\$54.95</u>
KWh of electricity used over 60k hours	3,600	840	360
Electricity Cost (@ \$0.23 per KWh)	\$821.72	\$191.73	\$82.17
Bulbs needed for 60k hours of usage	40	6	1
Equivalent 60k hour bulb expense	\$53.80	\$17.88	\$54.95
Total 60,000 Hour Lighting Cost	\$875.52	\$209.61	\$137.12

Note: 60,000 hours is about 6.8 solid years, or about 13.6 years of lighting 12 hrs/day, 365 days/year. Also note that the average LED bulb is now lower than \$55.

At one of the energy efficiency conferences I recently attended I saw new LEDs for outdoor lighting. This LED technology powers down the lights when no one is there and powers them up within milliseconds when a motion detector is triggered. This power-down capability saves even more electricity and helps counter nighttime light pollution. These Hybra LEDs use a tiny fraction of electricity compared to current lighting and last many more years. They are perfect for parking lots and garages, car dealerships, bridges, schools, hospitals and medical centers.

I won't say more because I do not sell them...

Existing Help for Businesses to Go Green:

NYSERDA currently grants \$5,000 to buildings that achieve a USGBC LEED rating.

Renewable Energy, such as Solar PV systems and geothermal heat pump systems are technologies that will help propel NYC towards its 30% reduction in greenhouse gas emission mandate and towards energy *self*-sufficiency.

Solar PV currently has the following incentives:

- Federal individual income tax credit (30% with no maximum)
- Federal Business Energy Income Tax Credit (**30%**)
- State Residential Solar Tax Credit (25% to a maximum of \$5000)
- State Solar Sales Tax Exemption on materials
- Utility rebates

Geothermal currently has the following incentives:

- Federal individual income tax credits (30% with no maximum)
- Federal Business Energy Income Tax Credits (**10%**)
- Utility rebates

Potential Help for Businesses to Go Green:

LI-GEO is focusing on procuring the same incentives as solar that the industry does not have:

- State Geothermal Sales Tax Exemption on materials
- State Residential Tax Credit (25% to a maximum of \$5000)

Albany has a bill in process to extend the Sales Tax Exemption on materials to geothermal systems. Legislators should be hearing from all of us to support this bill. This will lower the overall cost of installing a geothermal heat pump system AND remove the unfair competitive edge out-of-state geothermal installation companies enjoy at in-state companies' expense.

The geothermal heating and cooling industry and its customers would really thrive if this industry could have the **same advantages as Solar PV**. After all, geothermal is available 24/7 rain or shine. Having the same incentives as solar PV would make installation of geothermal systems almost equal in cost to natural gas systems. *Plus*, the same geothermal equipment provides air conditioning and free domestic hot water too.

Impediments to Businesses Going Green:

- Lack of funding by NYSERDA for Comprehensive **Business** Energy Audits
- Lack of public awareness of programs to help homeowners and businesses become more energy efficient
- Greenwashing that confuses people and makes it less likely money will be spent on practical changes that will make a difference.

Solutions:

- Public Service Announcements about these programs on buses and subways, train stations, bus shelters, on TV
- Educating accountants on the bottom-line benefits of energy efficiency to business owners, who are too busy running their businesses to take advantage of these programs.
- Legislative change to authorize NYSERDA funding for Comprehensive **Business** Energy Audits

In Closing

Thank you very much for inviting me here today to talk with you about helping residents and businesses go green. I am available to answer your questions or provide any addition information you might choose to have. Going green is our way into the future.

Contact info:

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Mission:

The Pratt Center works for a more just, equitable and sustainable city

Economic Development Strategy:

- Diversify economy with well-paying manufacturing jobs
- Promote sustainable business practices to increase competitiveness and create jobs



Green Manufacturing is a Growth Strategy

Q. Do you market your company as green or environmentally sustainable?

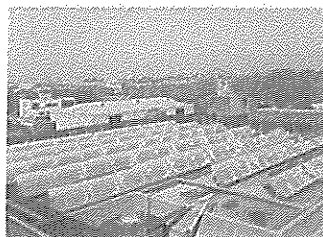
Q. Which of the following reflects your company's revenues over the past 12 months?

	Yes	No
Growing	52%	20%
The Same	17%	20%
Declining	23%	60%

What is Green Manufacturing?

Green manufacturing is a business strategy:

- Not limited to specific sectors – all businesses must be green
- Commitment to reducing negative environmental impacts; i.e. reduced consumption of water, energy, raw materials, etc.
- Continuous improvement
- Pervasive – product, process, marketing and workforce



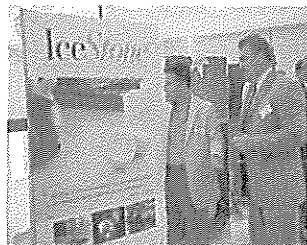
Steinway Piano, Queens, N.Y.



Duggal Printing, Brooklyn, N.Y.

Spec It Green Initiative

Strategy: Make Markets Work or “Show me the money”



- Spec It Green event series, mini-trade shows and www.madeinnyc.org to build awareness of market opportunities
- Extension services to help companies implement green practices and develop green products
- Aggregate demand by developers to stimulate product development

Sustainability at the BNY

- 84% of the companies support BNY's goal to create an eco- industrial park
- 33% said BNY has influenced company to adopt more sustainable business practices
- Top 5 green practices
 - Recycle paper/cardboard (64%)
 - Reuse materials (55%)
 - Use minimum packaging (53%)
 - Purchase recycled paper (48%)
 - Use energy efficient equipment or lighting (45%)
- 19% of firms market their company as green or environmentally sustainable; 53% of which believe this helps increase sales



renewableNY

A CLEAN ENERGY PROGRAM FOR NEW YORK

- Energy efficiency project demonstrating how to reach small businesses through small grants and extensive project management
- Distributed \$1 million in small grants to 39 local manufacturers employing more than 3,000 people
- Leveraged an additional \$2 million in private and public investment.
- Reduced costs and consumption by approximately 15% and deferred in excess of 2.2 Mw in demand



**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

[]

I intend to appear and speak on Int. No. _____ Res. No. _____

in favor in opposition

Date: 4/29/13

(PLEASE PRINT)

Name: Kevin Mannle

Address: 56-45 Main St. Flushing NY 11355

I represent: New York Hospital Queens

Address: _____

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

[]

I intend to appear and speak on Int. No. _____ Res. No. _____

in favor in opposition

Date: _____

(PLEASE PRINT)

Name: Billie Roberti

Address: 53 Hillwood Dr. Huntington Sta, NY 11746

I represent: Green Choices Consulting = my business

Address: same as above

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THE CITY OF NEW YORK**

Appearance Card

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I intend to appear and speak on Int. No. _____ Res. No. _____

in favor in opposition

Date: _____

(PLEASE PRINT)

Name: DONALD GIAMPETRO

Address: _____

I represent: SBS

Address: _____

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in favor in opposition

Date: _____

Name: Charles Sturcken (PLEASE PRINT)

Address: DEP

I represent: _____

Address: _____

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THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

in favor in opposition

Date: 4-22-93

Name: Joe Coletta & David Gilford (PLEASE PRINT)

Address: _____

I represent: SNYGERC Small Business Services

Address: _____

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THE CITY OF NEW YORK**

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I intend to appear and speak on Int. No. _____ Res. No. _____

in favor in opposition

Date: 4-29-13

Name: Donald Giampietro (PLEASE PRINT)

Address: _____

I represent: Small Business Services

Address: _____

Please complete this card and return to the Sergeant-at-Arms

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Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

in favor in opposition 4-29-13

Date: 4-29-13

(PLEASE PRINT)

Name: Steven Caputo

Address: 253 Broadway

I represent: Office of Long-Term Planning: Sustainability

Address: _____

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THE CITY OF NEW YORK

Appearance Card

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in favor in opposition 4-29-13

Date: 4-29-13

(PLEASE PRINT)

Name: Travis Caputo

Address: 205 Clinton Ave. #6, Brooklyn, NY 11205

I represent: Brooklyn It's Greening NY Planning: Sustainability

Address: 69 9th St, Brooklyn, NY

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THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

in favor in opposition

Date: 4-29-13

(PLEASE PRINT)

Name: Navy Catalina

Address: 75 MONTGOMERY ST

I represent: Vintage NYC / Xpert Corp

Address: Brooklyn Navy Yard

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THE CITY OF NEW YORK**

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I intend to appear and speak on Int. No. _____ Res. No. _____

in favor in opposition

Date: _____

Name: Adam Friedman (PLEASE PRINT)

Address: _____

I represent: Pratt Center for Community Dev.

Address: _____

◆ Please complete this card and return to the Sergeant-at-Arms ◆

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card



I intend to appear and speak on Int. No. _____ Res. No. _____

in favor in opposition

Date: 4/29/13

Name: Esteban Doran (PLEASE PRINT)

Address: 211 S. 4th Street, Bklyn NY 11211

I represent: El Puente

Address: same as above

◆ Please complete this card and return to the Sergeant-at-Arms ◆