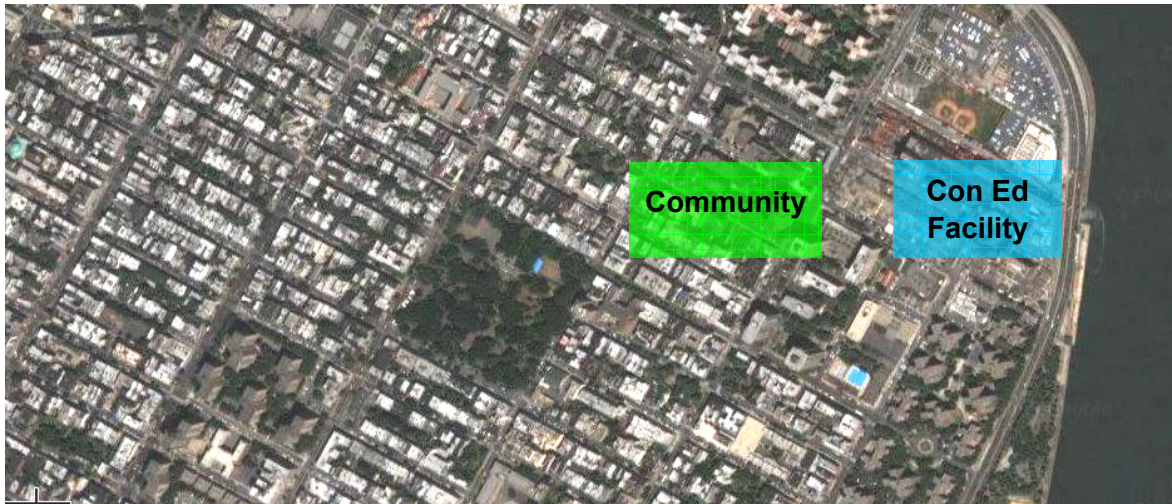


# Greening A BLOCK

*A Project to Promote Community Health and  
Environmental and Economic Sustainability  
through Energy Efficiency  
on the Lower East Side of New York City*



## **Feasibility Study – Executive Summary**

January 2006

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**A Project of the Neighborhood Energy Network**

**Under the Sponsorship of the  
Association for Energy Affordability, Inc.**

*[www.greeningablock.org](http://www.greeningablock.org)*



## ***Charles Komanoff***

Economist and environmental activist Charles Komanoff was an expert witness for East River Environmental Coalition (EREC) in contesting Con Edison's East River Power Plant expansion. He has researched and reported on energy-efficiency policies at the local and national levels since the 1970s. He has managed a comprehensive Natural Resources Defense Council (NRDC) study of Con Edison's residential and commercial energy-efficiency programs conducted with the co-operation of Con Edison. Charles has been an expert witness on power plant economics, efficiency and environmental impacts for dozens of city and state agencies, including New York City and State, and has published numerous monographs and journal articles on energy and environmental issues. He also "re-founded" the bicycling advocacy group Transportation Alternatives in the mid-1980s and helped found the policy-oriented Tri-State Transportation Campaign in the 1990s. An economics graduate of Harvard, Charles lives with his wife and two children in lower Manhattan. A more detailed biography and links to publications are at [www.komanoff.net](http://www.komanoff.net).

## ***Jeff Perlman***

Energy efficiency, renewable energy and green buildings consultant Jeff Perlman has a wide range of experience in clean energy technology. His firm, Bright Power, Inc. ([www.brightpower.biz](http://www.brightpower.biz)), provides services ranging from advising building owners and architects on the most viable solar and energy efficient solutions for their buildings, to financial analysis and market research of green buildings and clean energy technologies. He has installed solar energy systems on building rooftops, conducted energy audits, and has designed small solar powered devices as well as a solar powered car. As a co-founder of the community solar energy outreach organization BASIC ([www.basicsolar.org](http://www.basicsolar.org)), he earned a reputation as a competent and enthusiastic community educator and organizer, as well as someone who can make complicated energy concepts simple to understand. Articles he has written on energy and science appeared in a variety of general interest publications. Jeff holds a degree in Applied Physics from Yale. A native New Yorker, Jeff spent his early years in Stuyvesant Town and currently lives in Brooklyn.

## ***Neighborhood Energy Network***

The Neighborhood Energy Network (NEN) is a coalition of community, health, social justice, environmental justice and energy advocates seeking better energy solutions for New York City neighborhoods. NEN created the venues and supplied much of the creative sparks that led Charles and Jeff to develop the conception of Greening A Block. To learn more about NEN, to join people working in your neighborhood, or to start a forum in your neighborhood, please contact NEN at <http://www.neighborhoodenergynetwork.org>.

**Copies of the complete feasibility study, along with a spreadsheet of the underlying analysis, may be downloaded from [www.greeningablock.org](http://www.greeningablock.org)**

## Acknowledgments

A very special thank you to Lois Sturm of the Neighborhood Energy Network (NEN) and East River Environmental Coalition (EREC) for sparking Greening A Block with invaluable insights, comments and ideas every day from the conception of the project through completion of this study.

Thanks to the staff of Greening A Block's fiscal sponsor, the Association for Energy Affordability, Inc. (AEA).

Thanks to all who have helped with their insights as we have developed this project and with reviews of earlier drafts of this document, especially: Nancy Anderson (Sallan Foundation), Michael Bobker (AEA), Wendy Brawer (Green Map), Michael Colgrove (NYSERDA), Pat De Angelis (EREC), Joanne Derwin (NYC Apollo), Henry Gifford (Gifford Fuel Saving), Daniel Gutman, David Hepinstall (AEA), Cary Hirschstein (HR&A), Greg Kats (Capital E), Carol Kostik (EREC), Richard Leigh (CEC), Ed Lloyd (Columbia Law School Environmental Law Clinic), John Nettleton (Cornell University Cooperative Extension), F.L. Andrew Padian (Steven Winter Associates), Courtney Reed (HR&A), Verina Reich (EREC), Dan Rieber (NMIC), Nando Rodriguez (ORNY), Harvey Sachs (ACEEE), Mary Spink (LESPMHA), Dean Zias (NYC Energy Smart Communities).<sup>1</sup>

Thanks to our research assistants: Brian Go, Geoff Hockert, Julia Holland, Jonathan Levine, Carina Molnar, Sophie Nimmannit, Jennifer Veilleux.

We thank the following for their encouragement of Greening A Block:

- Members of Manhattan Community Board No. 3, members of the CB3 Public Safety and Transportation Committee, and CB3 district manager Susan Stetzer.
- Former City Council Member (District 2) Margarita Lopez and her staffers Eric Lugo and Adelaide Connaughton.
- State Senator Martin Connor and his staffer Matt Viggiano.
- Gil Quinones and Ariella Rosenberg at the NYC EDC.
- US Congresswoman Nydia Velazquez and her staffer Melissa Maldonado.

We thank the following for their generous and essential financial support for Greening A Block: the Energy Foundation, the Surdna Foundation, and the Common Sense Fund.

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<sup>1</sup> A glossary of acronyms appears on pp. viii-ix.

# Executive Summary

Greening A Block is an innovative project to transform a city block on the Lower East Side of Manhattan into a showcase of community-scale sustainability, energy efficiency and renewable energy. The project will improve air quality and indoor comfort while saving money for residents, merchants and property owners. It will create good jobs and spark economic activity in the community.

Greening A Block will demonstrate and quantify the benefits that community-based programs can achieve in delivering energy efficiency to middle- and low-income urban areas, making it a model for sustainability efforts on other blocks and in other communities.

The project has four primary components:

- Educating building owners and occupants about energy efficiency and sustainability.
- Performing energy efficiency improvements to buildings and units.
- Financing energy efficiency improvements to maximize participation.
- Monitoring improvements to ensure that they perform as anticipated.

The benefits of the project include:

- Energy savings.
- Monetary savings.
- Improved air quality.
- Improved comfort.
- New jobs in the community.
- Water savings.
- Defining new frontiers in energy efficiency and renewable energy in NYC multifamily residential buildings.

The pilot block, not yet selected, will be in Manhattan near the Con Edison East River Generating Station, just south of 14th Street between Avenues A and D. The envisioned “block” will consist of the entire north and south sides of a street, along with four short sides on the avenues bounding the street (see Figure ES-1). To ensure that the selection process is thorough and fair, the block will be chosen with community input after the project has received the necessary approvals from the Community Board. Preference will be given to blocks that are representative of the Lower East Side in terms of building stock (building size, age, heating systems, etc.) and demographics (owners vs. renters, proportions of children and seniors, income, etc.).

**Figure ES-1: Diagram of a “Model Block”**



*Note: the shaded areas are the buildings to be covered under the project.*

At an anticipated participation rate of 75%, Greening A Block will encompass roughly 40 buildings, 450 apartments and three dozen storefronts. Building heating systems, common areas (lobbies, hallways and stairwells) and “envelopes” (roofs, walls, exterior doors, windows and window frames) will be optimized for efficient energy performance – in both heating and electrical systems – with state-of-the-art equipment, materials, and design and installation techniques. Individual residential and commercial units will be made more efficient with Energy Star lighting, appliances and fixtures. Demonstrations of solar panels, green planted roofs and other emerging sustainable technologies will be installed on the block. The project will also include a program to care for and plant more street trees.

There is a strong outreach component included in Greening A Block to educate and inspire project participants. Building owners, supers and occupants will be invited to workshops and trainings to learn about methods for saving energy and improving comfort. These workshops will complement the installation of energy saving technologies. Maximum energy savings will be achieved through a combined effort of physical improvements to buildings and the proper use and maintenance of these improvements.

The occupants of the block will be encouraged to invest their effort in the project through signs and other visible indicators that they are living on a Green Block — something in which to participate and in which to take pride. “Friendly competition” between buildings will be encouraged, comparing progress and rewarding the buildings that achieve highest levels of participation or highest energy savings. Outreach will be vital to maximizing participation and ensuring seamless communication between the project management team and all parties on the block.

This study is written with the intention of encouraging Community Board No. 3 to allocate a substantial portion of a Con Edison Settlement Fund to Greening A Block. These funds, combined with funds from state and federal energy efficiency programs, will enable Greening A Block to offer energy efficiency improvements with little monetary investment by building owners and occupants, which will maximize participation in the project.

The participating buildings and apartments will reap energy savings equivalent to 190,000 gallons of fuel oil per year. This assumes average energy savings of 30%, a reasonable estimate given the concentrated, synergistic nature of Greening A Block and the rapid paybacks resulting from the project's unique access to public funding sources. After deducting participants' share of the up-front cost of these measures (that is, expenditures by building owners and occupants), these energy savings equate to net monetary benefits for participants of approximately \$432,000 per year.<sup>2</sup>

Building owners and occupants will be asked to contribute, at most, only a small fraction of the costs of the work to make their properties energy-efficient. To protect renters, owners will be barred from increasing rents through the heavily-subsidized measures performed by Greening A Block, and a portion of the fund will be set aside to cover legal fees should any problems arise.

The block's reduction in energy consumption will generate environmental benefits, largely deriving from the reduction in the amount of fuel combusted in the buildings themselves for heat and hot water. Greening A Block will reduce ground-level air pollution, especially fine particulates that are exceptionally damaging to the health of children, seniors and other vulnerable groups. The primary benefit will be on the chosen block itself, but concentrations of particulates will also drop on surrounding blocks. Averaged across the 140 blocks of Manhattan Community Board No. 3, the air quality impact of Greening A Block will be superior to any other proposed expenditure of the Con Ed Settlement Fund.

Greening A Block will also create jobs — “direct” jobs installing, specifying and maintaining the energy-saving equipment, and “indirect” employment as workers spend some of their wages in the neighborhood and as residents and building owners spend and invest the savings from lower electricity bills and heating costs. The boost in New York City employment from Greening A Block is an estimated 96 “job-years,” i.e., 96 jobs lasting one year each, with a majority of these jobs created on the Lower East Side.

Greening A Block is designed to serve as a model for similar energy-saving projects throughout Community Board 3 and other New York City neighborhoods. The project will lift energy efficiency out of a single-building paradigm and into a community activity at a single or multi-block scale. In this sense, the model block is the beginning, not the end, of an energy revolution in New York City — one that has been made more vital than ever by the recent spike in oil and gas prices along with the exploding geopolitical and climate ramifications of inefficiency in energy use.

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<sup>2</sup> Savings are computed with energy prices of \$2.50/gallon for heating oil and \$18.00 per thousand cubic feet of natural gas (the same price as heating oil on a “BTU basis”) and 20¢ per kWh for electricity.

# Greening A Block — By The Numbers

(all numbers are approximate)

## *Participating*

<i>Buildings</i>	<b>40</b>
<i>Apartments</i>	<b>450</b>
<i>Commercial Units (stores, schools, etc.)</i>	<b>36</b>

## *Annual Energy Savings*

<i>Oil (gallons)</i>	<b>95,000</b>
<i>Natural Gas (therms)</i>	<b>130,000</b>
<i>Electricity (kilowatt-hours)</i>	<b>770,000</b>
<i>All energy savings as gallons of oil equivalent</i>	<b>190,000</b>
<i>Gross dollar value</i>	<b>\$478,000</b>
<i>Net of participants' amortized costs</i>	<b>\$432,000</b>

## *Cost of Project*

<i>Total (percentages don't equal 100% due to rounding)</i>	<b>\$3,839,000</b>
<i>Occupant or building owner participant share</i>	<b>14%</b> <b>\$537,000</b>
<i>Government Energy Efficiency Programs</i>	<b>25%</b> <b>\$957,000</b>
<i>Con Ed Settlement Fund</i>	<b>61%</b> <b>\$2,345,000</b>

## *Benefits*

<i>Net Job-Years Created by Greening A Block</i>	<b>96</b>
<i>Impact on Occupants' Comfort</i>	<b>Positive</b>
<i>Water Savings (gallons per year)</i>	<b>1,550,000</b>

## *Maximum Air Quality Improvement on one block (reduction in fine particulates in nanograms per cubic meter of air, in any year)*

<i>from Greening A Block</i>	<b>138</b>
<i>from Fuel Switching (the alternative to Greening A Block)</i>	<b>15</b>

## *Average Air Quality Improvement across CB3 (reduction in fine particulates in nanograms per cubic meter of air, averaged over 15 years)*

<i>from Greening A Block</i>	<b>2.6</b>
<i>from Fuel Switching</i>	<b>1.7</b>

*Total Rent Increases due to Greening A Block* **\$0**

## *Time from CB3 decision-to-support to*

<i>"first shovel in the ground"</i>	<b>12 months</b>
<i>to completion of model block</i>	<b>48 months</b>