

reimagining the metropolis: *new york city's green building revolution*
High Performance Building in 2005 and 2010

June 22, 2005
Opening Panel

Moderator: Nancy Anderson, Executive Director, Sallan Foundation
Kate Ascher, Exec. Vice President for Infrastructure, NYC Economic Development Corp.
Ariella Rosenberg, Senior Project Manager, NYC Economic Development Corp.

PlaNYC—which would be officially released in 2007—was the focus of the first forum, with panelists addressing the EDC viewpoint of the forthcoming document. High performance buildings were discussed in the context of how they related to the Plan's goals of developing 2,600 megawatts (MW) of new electric resources by 2008, reducing 675 MW off peak demand. EDC recommended LEED certification and wind power for their projects to promote sustainability. PlaNYC represented a shift from the conventional paradigm that views energy from the supply side to a more comprehensive approach that includes efficiency and conservation.

September 30, 2005
The Clients' Perspective

Moderator: Susan Szenasy, Metropolis Editor and Chief
Susan Boyle, Partner, Big Sue Inc
Jeff Perlman, President, Bright Power Inc.
Cecil Corbin-Mark, Associate Director, West Harlem Environmental Action

Speakers examined three high performance projects: the award winning Brooklyn Ice House development, the Lower East Side Greening a Block initiative, and the West Harlem Environmental Justice Center.

The Brooklyn Ice Project incorporated a number of new building techniques including: increasing the concentration of locally sourced fly ash in concrete to strengthen concrete; a focus on permeability for natural drainage, and use of low cost “off the shelf” solutions such as individual boilers, radiant heating, and dual pane windows. Boyle noted that you “need to stimulate the private sector to really grab the attention of those who can create tax incentives and policies”.

Greening a Block initiative proposed using funding from a Con Edison power plant settlement case to complete energy audits on individual buildings. With the goal of 30% energy savings per building the program intended to focus primarily on tuning boilers and heating systems, better insulating buildings, retrofitting lighting fixtures and updating appliances Perlman estimated that the energy savings for one block will be 180,000 gallons of fuel per year, which is equivalent to \$360,000 or 300 cars off the road.

The West Harlem Environmental Justice Center centered its focus around finishing construction debt-free, which they planned to achieve through capital campaign funding that would persuade elected officials to also contribute. The project successfully fused together a variety of environmental justice issues while transforming a row house into a community training center, a library, an art space, a gathering place and offices for the organization (WE ACT).

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October 30, 2005

Architects and Developers

Moderator: Carlton Brown, Chief Operating Officer, Full Spectrum

Bruce Fowle, Principal ,FXFOWLE Architects, formerly Fox & Fowle Architects

Lydia Tom, Deputy Director, Enterprise Foundation New York

John Kriebel, Director of the Office of Sustainable Design, NYC Department of Design and Construction

This panel's objective was to "try and comprehend what the barriers are in each of these sectors (private architecture design, non-profit development, and public administration), and how we can begin to work with each other" according to moderator Brown. Panelists spoke about the use of green architecture; how labeling is often arbitrary and how US standards are different than those used in other countries, as well as how fluctuating technology costs can be a challenge. While Fowle noted that the Durst-developed Helena hi-rise apartment building uses a black water system and under floor air conditioning, the cost saving was not yet enough to compel traditional builders. Rather, his projects stand as demonstrations of what it can be achieved.

Tom described the \$500 million that Enterprise Foundation gives in the form of grants, loans and direct capital contributions to green housing units. In NYC, this figure was \$27 million in investment that created 500 affordable green housing units. She explained that tax credit investors are increasingly interested in her developments because of the growing understanding that the life cycle costs of green buildings will out-perform developments of similar size without green features.

The conversation turned to discussions of LEED and Intro 324-A and the challenges of a using the rating system for all new construction and renovations in NYC. Said Kriebel, "LEED is like a SAT score. It can only show the direction a project is moving. The whole process should be simplified and although simplicity is important, credibility is what matters most."

December 31, 2005

The Policy Makers' Perspective

Moderator: Tom Hanrahan, Dean of Architecture, Pratt Institute

Ashok Gupta, Director, Air & Energy Programs, Natural Resource Defense Council

Randy Croxton, Principal, Croxton Collaborative Architects

Hillary Brown, New Civic Works

Patty Noonan, New York City Partnership

The final panel sought to project the conversation about high performance buildings into the future and focused on the drawbacks, benefits, and possibilities of integrating high performance buildings into the "new normal". For Gupta, smart growth means looking at efficiency through the lens of transportation access, land use and brownfield redevelopment; the next step in energy efficient buildings is making structures have a net-zero carbon footprint. By generating their own power sources new buildings could reduce dependence on a national grid that runs at "30% efficiency". Croxton praised LEED for making green building performance quantifiable but stressed that the next step should take into account the core tenets of sustainability. "Sustainability can not be done one building at a time"; rather should encompass all the elements and context of the human experience.

The panelists explored the synergy between building green projects and governance. Brown emphasized the importance of a holistic approach to sustainability—the "level of involvement and leadership is determined by the problem being addressed" but that if we change the process starting at conception and procurement, we could effectively create a "mission driven, democratic and collaborative process that recognizes the organizing principals of urban ecology." Noonan reiterated this stance for the private sector that she represented but stressed that developers "don't like mandates, but like incentives a lot".

October 28, 2010

Panel 1: The Big Picture

Moderator: Nancy Anderson, Executive Director, Sallan Foundation

Adam Freed, Deputy Director, NYC Mayor's Office of Long-Term Planning and Sustainability

Paul Freitag, Director of Development, Jonathan Rose Companies

Ashok Gupta, Director of Energy Policy, Natural Resource Defense Council.

Nancy Anderson, Executive Director of the Sallan Foundation introduced the panel by citing local landmarks in the green building movement created over the last five years, including the application of LEED standards to municipal construction, development of energy efficient new and retrofits of existing buildings, in addition to wider introduction of cutting-edge government initiatives, like PlaNYC. After lauding the accomplishments of the movement, Anderson posed the question, "Perhaps this means we are done?", which led to a few chuckles in the audience.

Adam Freed led off with an announcement about the April 2011 update to the first PlaNYC 2030 now being written by the Mayor's Office of Long-Term Planning and Sustainability. Freed noted that it will take into account the increase in the City's population from 8.3 million in 2007 with a projected population of 9.3 million in 2030. Responding to the natural resource impacts and infrastructure pressures created in this growing City, the Mayor's Office seeks to upgrade its water infrastructure by creating more permeable surfaces when replacing sidewalks and pavement, using the 1.6 billion square feet of rooftops to retain water during storms, and continuing work on the Third Water Tunnel — one of the largest municipal projects ever undertaken in New York. Focusing again on how to move toward more high performance building, Freed also emphasized the importance of benchmarking thousands of government and privately owned buildings to establish comparative base-line data on their energy and water consumption. This benchmarking requirement is in keeping with the Bloomberg administration mantra "What gets measured gets managed."

Paul Freitag spoke in depth about three projects the Jonathan Rose Companies (JRC) has pursued that incorporate new techniques and progress in the design of green multi-family buildings — the David and Joyce Dinkins Gardens green affordable housing, Tapestry, and Via Verde. At David and Joyce Dinkins Gardens JRC utilized a unique system of air recirculation first deployed by New York City-based architect Chris Benedict. The system maintains constant flow of air through the apartment, keeping indoor air quality high in the unit. The Tapestry project is 185 units, of which 50% are set aside for market-rate tenants; 30% for middle-income tenants with rents set at 130% of the area median income (AMI); and 20% for low-income tenants earning below 50% of AMI. It is LEED Silver certified, with green roofs, rainwater harvesting systems, efficient mechanical systems, ENERGY STAR-rated appliances and fixtures, low- or no-VOC paints and primers, and formaldehyde-free materials to enhance indoor air quality. Via Verde, currently under construction, will consist of 222 mixed-income residential units and 9,500 square feet of retail and community facility space with over 40,000 square feet of green roofs and open space for residents. Via Verde aspires to promote healthy living, both through the use of eco-friendly ideas like rainwater harvesting to grow fruits and vegetables and physical elements such as the creation of a fitness center and bike storage units.

Ashok Gupta articulated just how understanding markets and policies can help jump start the means to overcome some of the obstacles to building high performance buildings "at scale". In considering the potential contribution of green leases, Gupta outlined the split incentives between owners who would have to pay for goods or services that would financially benefit tenants that are created by conventional leases. He suggested the development of guidance documents and financial products that can help circumvent split incentives and generate demand for such building upgrades. Gupta also looked at the increasing role of software in gathering and analyzing data to allow both building managers and advocates of green building to make informed decisions, especially when it comes to building operations and tenants behavior modification. Turning to the nexus between typical building energy use and governmental electric power rules, he stressed that fifty separate state regulators set energy policy in the US; this adds up to the nationwide inefficient use of electricity. Gupta explained that natural resources do not follow political boundaries, which implies that that regulation of electric power is "a state's rights issue" not easily amenable to greening through federal litigation or rule-making.

November 30, 2010

Panel #2: Making it Happen

Moderator: Eva Hanhardt, Assist. Professor, Grad Center for Planning and the Environment, Pratt Institute
Ariella Maron, Dep. Commissioner for Energy Management, NYC Department of Citywide Admin. Services
Dan Nall, Senior Vice President and Director of Sustainability, WSP Flack+Kurtz
Andrew Padian, Vice President for Energy Initiatives, Community Preservation Corporation
Wendy Fleischer, Director, Sustainability Services, Pratt Center, Pratt Center for Community Development

Ariella Maron started the evening by framing her discussion around the goals of PlaNYC. By 2017 New York City seeks to reduce municipal GHG emissions by 30% and the Greener Greater Building Plan is a key to meeting this target. Currently the City is evaluating all government-owned buildings over 50,000 sq. ft. for their energy use, green house gas emissions and code compliance—in some instances sub meters are installed to monitor specific use over time. Lower lighting costs for government buildings is a good measure of progress. For Maron the key is using a data driven implementation strategy to verify the government claims of energy reduction. By benchmarking, doing efficiency retrofits, verifying measurements and looking at performance indicators City government is able to analyze the operations and management of a building and prioritize facilities in need of attention. In addition to internal audits, Maron's office offers incentives through an outreach strategy of motivation-conditional funding for energy managers, posting performance reports, conditional flexible funding and staff awards and recognition. To date, her office has benchmarked all government buildings over 10,000 sq. ft and completed 216 retrofits and 74 audits, saving NYC \$4 million in energy costs and 17,1000 metric tons of green house gas emissions.

Dan Nall examined the relationship between the building and the community where it is situated. He elaborated on the idea of energy efficiency and water conservation as being instrumental to achieving community goals like livability and “uplifting the human environment”. The main issues ahead, Nall contends, lay in the exploration of transportation, energy and carbon emissions, economic viability, solid waste and water use at a local scale. Strategies, not technology, would be key to finding solutions in all of these areas and these should include dense buildings, increased pedestrian access, access to amenities and enhanced accessibility from work to home. Nall used the example of community-centered utilities to illustrate how to find synergies between different issues traditionally viewed as separate, and put the most appropriate resources in the place they belong.

Andrew Padian outlined why “green lending” can be a contradiction in terms. He pointed to the roots of green lending—creating investment opportunities for distressed communities—and showed that the lending itself wasn't what was sustainable. Rather, it was the building improvements in underserved communities. Tightening the building envelope, upgrading building control of heating, air conditions and hot water helps create brighter spaces and save water. The ingenuity in building “green” over the last five years has come from prioritizing multifamily home retrofits. In the coming years we need to “green” those professionals that work within the field, such as borrowers, mortgage staff and service departments, to close the high performance building knowledge gap.

Wendy Fleischer highlighted the positive effects of retrofitting buildings: improved indoor and outdoor air quality, improved health and the environment, a more engaged civic community, job creation and increased affordable housing. But even with these plusses, there are many barriers to retrofitting homes. For many homeowners, the upfront cost is hard to swallow when the payback is over the long term. Many people are averse to the idea of being in debt and new “green” ideas can be unfamiliar and daunting. As well, there is a real degree of technical difficulty that makes retrofits harder to take on than the average home improvement project. She then turned to the Bedford-Stuyvesant Green Blocks Pilot Program run by the Pratt Center. In this program all willing homeowners receive energy assessments and residents are engaged directly in the environmental issues at stake as well as the retrofit process. Through this pilot the Pratt Center is also offering job training and placement for residents in green jobs. By tracking neighborhood results the program is able to “package” the incentives inherent in the retrofit process: community engagement, energy savings and job training and placement. “What we are really doing,” Fleischer pointed out, “is connecting the dots between behavior, health, energy and environment, and directly engaging homeowners in the process.”

February 2, 2011

Panel #3: A Banker, A Lawyer & An Underwriter Walk Into A Bar...

Moderator: Nancy Anderson, Executive Director, The Sallan Foundation

Sam Marks, Vice President, Deutsche Bank Americas Foundation

Sadie McKeown, Senior Vice-President, The Community Preservation Corporation
Lawrence Schnapf, Principal, Schnapf Law Offices

Sam Marks started the evening off with a look back at how affordable housing energy retrofits were financed five years ago. At that time, he was working for Women's Housing and Economic Development Corporation and realized that many of the buildings in its portfolio could be retrofitted to be more energy efficient. "Five years ago this kind of thinking was revolutionary." Marks went on to explain how greater awareness of our fossil fuel dependence and climate change has opened up the opportunities for initiatives like PlaNYC and Greener Greater Buildings to gain traction. The tricky part in incentivizing retrofits, is overcoming the obstacles on the demand side. In NYC, rent stabilization eliminates the right to pass along many building operating costs to tenants, and a skilled labour shortage make it difficult to aggregate demand. To change the split incentive equation, Marks proposed making the retrofits part of the housing marketplace and routinizing both the transactions and the measures taken. To accomplish this grand task the Deutsche Bank Living Cities Project put together a working group of stakeholders that developed a Request For Proposal for aggregating and amalgamating existing sets of benchmarking data that lenders would be comfortable to work with. At present, the main barrier for lenders is their lack of confidence in long-term energy savings. By assembling data on some 12,000 units of multi-family housing the Deutsche Bank Americas Foundation report will identify the best practices in use. The final piece of the project will involve reaching out to residential lenders and advisors about financing retrofits to see how current metrics and practices can be modified to include this groundbreaking data.

Sadie McKeown stressed that the world of underwriting is not as complicated as it seems, and went on to demystify an aspect of retrofitting buildings that often confounds even the most educated on building green. She asserted that if you added together all of the incentives currently available—from NYSERDA to Energy Star—you could impact just 1% of the building stock. While the housing market of five years ago would have allowed for extra financing to cover the marginal costs of retrofitting a building, many owners weren't opting for the long-term gain and were instead cashing out and moving on. The market today is under such scrutiny that many lenders are hesitant to make loans for energy retrofits. The solution, according to McKeown, lies in incorporating the financing for retrofitting into first mortgages. McKeown took the initial step in this process by training her staff in the benchmarking process; later, McKeown was approached by Freddie Mac and Fannie May to discuss how they might train their in-house staff in benchmarking. McKeown emphasized that when benchmarking becomes a routine part of the mortgage process, it starts to shift the overall attitude toward retrofitting buildings. Just as lead paint abatement and underground tank removal have become standard practices covered by first mortgages, McKeown believes that benchmarking should be just another regular step in a mortgage loan application. When incorporated into the process, a home buyer or developer not only secures the correct funding for the retrofits but also it creates the greatest overall impact on the efficiency of building stock. McKeown noted that there are some challenges to this change, such as the need to train building operators, raising tenant awareness and the need to amass more concrete data (like the Living Cities Project) to propel the move toward incorporating benchmarking into the underwriting process. But the truth is, McKeown stressed, "The math doesn't lie."

Lawrence Schnapf started off by taking a deep look back on the seminal environmental legislation and litigation of the last four decades. He pointed to 1978 federal legislation to establish stricter national building codes, which would have reduced energy use in buildings. In 1981, after the election of President Reagan, the word "voluntary" was inserted in to the text and remains that way to this day. Over time, state and municipal laws picked up the slack. More than twenty-five years later, the U.S. Supreme Court decided that carbon dioxide could be regulated by the federal Clean Air Act. Schnapf then made the case that the market needs more regulation -- as well as the usual municipal tools of ordinances, zoning and incentives--to help owners see further than three years ahead (the average time span an owner will consider when thinking about building improvements). Schnapf noted that the current NYC Greener Greater Building

benchmarking law compels owners to disclose information about their building. More typically, information about building costs are carefully guarded and this culture of non-disclosure may lead some owners to ignore the law. However, a failure to file benchmarking information does not entail major consequences. If an owner does not benchmark his or her property the current penalty is a violation that would perhaps hinder refinancing at some future date but has little immediate consequence. Schnapf predicted that the Department of Buildings will work to change the structure of the law and add in a direct penalty for non-compliance. After outlining several pending court cases related to green buildings, Schnapf concluded by directly addressing the law students and lawyers in the audience. “Green building law is to this generation what Superfund law was to mine.” Schnapf stressed that, “The economic incentives for greater efficiency in buildings means that green building is here to stay, regardless of any debate over climate change.”

April 26, 2011

Panel #4: Visions for a Near Future

Moderator: Chris Garvin, Partner, Terrapin Bright Green

Cas Holloway, Commissioner, NYC Department of Environmental Protection

Laurie Kerr, Senior Policy Advisor, Mayor’s Office of Long-Term Planning & Sustainability

Eric W. Sanderson, Senior Conservation Ecologist, Wildlife Conservation Society

Nancy Anderson and Chris Garvin welcomed everyone and framed their visions for how far we’ve come and where we could be going as we make the Green Building Revolution. Nancy contrasted facts on the ground in 2006 with 2011 and concluded with this appeal, “We should try to be the parents of our future rather than the offspring of our past”.

Eric Sanderson opened up the discussion by observing that while we are struggling to discover and deploy formulas for creating true urban and built-form sustainability, ecosystems inherently know how to exist sustainably because they are adaptive and self-organizing systems. Before European settlers came to Manhattan, the island was home to over 1,000 plant and animal species, all co-existing in a unique ecosystem. What needs to change today is our paradigm of the relationship between humanity and nature. Currently we assume that humanity dominates nature, or at best, exists side by side with nature. In Sanderson’s vision for the future, we would understand that humanity is part of nature, and have that insight drive our interactions with our natural and built environment. Only then can we map out what kinds of interactions our cities should have with nature. Human beings need a sense of being in addition to shelter, which is why we need cities; they provide meaning by giving us choice in our food, water and shelter. The future of Sanderson’s own research will include expansion of his Welikia (the Lenape Indian word that means “my good home”) Project that will extend the Mannahatta Project to include data and depictions of eco-systems in the Bronx, Brooklyn, Queens and Staten Island before first contact with Europeans.

“Predictions are always difficult, especially when they involve the future.” This witty one-liner set the tone for Laurie Kerr’s vision for the future of New York City. By exploring past predictions of the future we can begin to tease out not real predictors of life, but reflections of what our society was at that time. Fritz Lang’s 1930s dystopic vision of the future in his film Metropolis revealed the anxiety of a society still reeling from war and economic depression. In contrast, our latent vision of the future is a bucolic-nostalgic-utopian construct, filled with green roofs on every building and harmonious people walking to and from work. Kerr warned us not to get too wrapped up in these visions—the key to reaching our goals is not to move like a one-trajectory rocket but to sail like a ship, continually tacking and adjusting our course. In her office the motto is “Ambitious but achievable”, which favors new greenhouse gas reduction strategies inspired by the now-classic stabilization wedge model created at Princeton University. After outlining the actual energy reduction strategies that the Mayor’s Office is undertaking—including changing building operations, adding cost-effective measures and marginal supply reduction—Kerr shared her own vision for the metropolis. In 2050, we will only use energy when needed through installation of sensors and smart building controls. All-glass buildings will be oh-so retro and building maintenance will be as prestigious a profession as medicine or law. Roofs of the future will have no black tar, but 25% will host solar or PV panels while others will have

green roofs or be spaces for urban agriculture. Building sites would no longer be paved with asphalt, but will use permeable pavement. Lawns, with their watering and pesticide demands, will be universally disdained.

For Cas Holloway, the natural evolution of the newly updated PlaNYC is for City agencies to adopt and implement the report's initiatives. The Department of Environmental Protection is doing just this by launching a strategic plan to ensure the standard of municipal services and quality of life that New Yorkers expect, while attacking the chronic problem of storm water overflows and providing necessary capital for its new projects. To shape DEP's future trajectory, the agency recently released a green infrastructure program, which Holloway characterized as unlike anything that New York City has seen since the creation of the Catskill/Delaware municipal water supply. Green infrastructure program highlights include: cost-effective grey water systems; controlling runoff from 10% of urban impervious surfaces by optimizing road/sidewalks/roof tops; institutional adaptive management; and fostering sustained stakeholder engagement. DEP is strategically focused on finding solutions to pollution that are an advance over pre-green "end of pipe" public works. It is developing new ways of managing rainwater runoff before it hits the City's treatment plants. By quantifying the benefits of green infrastructure, DEP can now look in its portfolio and count runoff as a resource rather than a costly problem. Holloway stressed that DEP is "thinking green and small" and that every block can have "green serving a function" to benefit each community in the City.