Hoffmann Architects

NEWS

WHAT BUILDING OWNERS SHOULD KNOW ABOUT NEW YORK CITY'S NEW ENERGY LAW

On December 9, 2009, the New York City Council enacted a body of legislation that is arguably the most ambitious and substantial green retrofit initiative in a U.S. city to date. For owners of buildings over 50,000 square feet in the New York metropolitan area, the "Greener, Greater Buildings Plan" will mean more stringent energy code standards, mandatory energy and water use audits, and required energy efficiency retrofits. Hoffmann Architects, an architecture and engineering firm specializing in the rehabilitation of building exteriors, outlines the new legislation and explains its implications.

Creation of the New York City Energy Conservation Code (NYCECC)

Applicable building types

ALL buildings in New York City ***except***:

- State or National Register of Historic Places designations; OR
- Landmarks Preservation Commission designations.

Requirements

ALL additions, alterations, renovations, and repairs must conform to the NYCECC. Renovations of less than 50% of a building system or subsystem will no longer be exempt from energy code compliance. Portions of the building not being altered, however, do not need to meet the energy code.

Purpose

Of the 42 states that base their energy codes on the International Energy Conservation Code, only New York State exempts minor renovations from compliance. Many renovations in New York City, particularly in large buildings, don't meet this State Code threshold, and so are not required to comply. By establishing its own, more stringent, energy code, New York City aims to close this loophole.

Timetable

NYCECC will apply to all renovations for which construction document approval applications are submitted to the New York City Department of Buildings (DOB) on or after ***July 1, 2010***.

Implications

Even small renovations must meet the energy code. Whereas the replacement of a few windows out of 400 was previously not subject to energy code compliance, those replacement windows will now need to meet energy code standards.

New requirements will complicate building permit applications. Applications for building permits will need to demonstrate compliance with the NYCECC. Required documentation will include certification by a design professional, an energy analysis, and data supporting conformance to the energy analysis.

Building envelope components important to energy efficiency must be part of submitted plans. Insulation and vapor retardant elements, in particular, must be included in Building Code submittals, so involvement of an exterior rehabilitation architect from the outset of the project will be critical to avoiding delays.

Benchmarking for Energy and Water Use

Applicable building types

- Non-municipally owned buildings over 50,000 sf; OR
- two buildings on the same lot with combined square footage over 100,000 sf; OR
- condominiums owned by the same board with combined square footage over 100,000 sf; OR
- a building over 10,000 sf for which the City pays all or part of the energy bills.

Requirements

Report building energy and water use data. Information must be inputted annually into the U.S. Environmental Protection Agency's (EPA) internet database system, or other complementary system as designated by the Office of Long-Term Planning and Sustainability.

Purpose

To encourage energy efficient building operations, owners and facility managers will be able to compare their buildings' performance to that of similar buildings.

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Timetable

Applicable building types must be benchmarked annually.

For City buildings: beginning ***May 1, 2010***.

For privately owned buildings: beginning ***May 1, 2011***.

Thereafter, benchmarking must be completed before May 1 each year.

Implications

Prospective buyers and tenants will also have access to the benchmarking figures, so performance can critically impact property value. As early as possible, building owners should evaluate mechanical and electrical systems and make appropriate upgrades. A building envelope assessment by a design professional is crucial to addressing energy leaks quickly and efficiently, and to protecting against heat transfer in the long term.

Energy Audits, Retro-commissioning, and Retrofitting

Applicable building types

- Same as above, with the following exceptions.

Exemptions—Energy Audits:

- EPA Energy Star label for two of the three preceding years; OR
- Leadership in Energy and Environmental Design for Existing Buildings (LEED-EB) performance of 25+ points above average for two out of the three preceding years; OR
- LEED-EB certification within the preceding four years.

Exemptions—Retro-commissioning:

- LEED-EB certification within the preceding two years INCLUDING the point for investigation and analysis and commissioning implementation.

Requirements

Conduct an energy audit. Building evaluations will be required to identify opportunities for improved efficiency in mechanical, heating, electrical, and building envelope systems. Retrofits, such as new insulation, roofing, or seals, may be recommended, with analysis of the cost recovery period for such upgrades.

Undergo retro-commissioning. Assemble a retro-commissioning team to direct and conduct functional performance testing and to identify deficiencies in building systems, so as to optimize energy performance.

File a report. Owners will need to file an Energy Efficiency Report with the DOB, including the results of both the energy audit and the retro-commissioning.

Retrofit poorly performing components. FOR MUNICIPAL BUILDINGS ONLY, capital improvements recommended in the energy audit that would offset initial expense through energy savings within 7 years MUST be implemented. For other buildings, these are recommended, but not mandated.

Purpose

Energy standards for new buildings have become increasingly stringent. However, most of New York City is already built. As reported in PlaNYC 2030, the City's plan to reduce carbon emissions 30% by 2030, an estimated 85% of New York City's carbon emissions in 2030 will come from buildings that exist today. To achieve PlaNYC's ambitious carbon reduction goal, the energy performance of existing buildings must be evaluated and improved.

Timetable

Reports will be due ***every 10 years, beginning in 2013***. Due dates will be determined by block number. Owners can defer report submittal by 10 years if their building is less than 10 years old OR if it has undergone substantial rehabilitation AND complies with the NYCECC. City buildings have ONE year after report submission to complete mandated retrofits.

Implications

Owners will need to retain HVAC, building envelope, and other retro-commissioning specialists to collaborate on testing and evaluation. Retro-commissioning is a broad-spectrum, holistic evaluation that encompasses operations, maintenance and repair, and training and documentation. As such, diverse professionals will be required to consult both with one another and with building operations and maintenance staff. A team leader, usually a design professional, coordinates and oversees this process.

The retrofit provision has been scaled back, but owners should be at the ready. To make the plan an easier pill for building owners to swallow, the seven-year payback retrofit mandate, originally intended to apply to all buildings, now applies only to City buildings. Owners should be prepared, however, should the Council elect to broaden the scope of this provision at a later date. Planning for and implementing recommended retrofits now could spare headaches later should the law suddenly demand a slew of costly upgrades.

Lighting Upgrades

Applicable building types

- Same as for benchmarking, except as below.

Exemptions:

- Residential dwelling units
- Hallways, stairways, or corridors used for egress
- Emergency or security areas
- Assembly spaces in houses of worship

Requirements

Upgrade lighting systems to meet new standards. NYCECC will set requirements for common spaces, which will include lighting controls, tandem wiring, exit signs, interior lighting power requirements, and exterior lighting.

Install sub-meters to measure tenant electricity use. For any commercial tenant space over 10,000 sf, a sub-meter must be installed to measure electricity consumption separately from the rest of the building.

Provide a monthly electric statement to tenants. Owners are NOT required to charge tenants separately for electricity, but they must provide information on individual usage and electricity charges.

File a report with the DOB. A registered design professional or a licensed master or special electrician must certify that sub-meters have been installed in all covered tenant spaces.

Purpose

Because investments in lighting system upgrades are typically recouped through operational savings, the City justifies the required modifications as having minimal financial impact on building owners. Lighting efficiency standards for new construction are increasingly stringent, but without similar standards for existing buildings, regulations will have little impact on overall energy use.

Sub-meter installation aims to address the disconnect between tenants, who control much of building energy use, and building owners, who see the electric bills. By making commercial tenants aware of their patterns of electricity consumption, the City hopes to reduce usage.

Timetable

Lighting system upgrades, sub-meter installation, and DOB report filing must all be completed by ***January 1, 2025***.

Implications

Up-front costs can be substantial. While lighting upgrades may well pay for themselves over time, the initial expense of these modifications, coupled with sub-meter installation for all large commercial tenants, can be significant, especially for a large building. Advance planning lets owners phase lighting upgrades to gradually build on one another over time, without the approaching deadline forcing expensive last-minute renovations.

Green Building Financing

Although not directly included in the four-bill legislation package, a related financing program aims to help owners pay the up-front costs of efficiency upgrades. The U.S. Department of Energy has approved the City's application to use all $16 million of its Energy Efficiency and Conservation Block Grants from the American Recovery and Reinvestment Act to establish a revolving loan fund for any upgrades that will eventually pay for themselves. To take advantage of this funding opportunity, owners should act quickly to schedule energy audits, benchmarking, and retro-commissioning and to plan retrofits and repairs. The City expects to issue its first loans in mid-2010.

Summary

Reducing greenhouse gas emissions and improving energy efficiency of existing buildings is important. It is also expensive, and it requires planning, budgeting, time, and labor. No other city in the country has established so wide-reaching and bold a building energy plan, so New Yorkers will need, to a degree, to make this up as they go along.

Still, many of the provisions in the "Greener, Greater Buildings Plan" aren't completely foreign. Owners of large buildings in New York City have spent the past thirty years managing the facade ordinance inspections mandated under NYC Local Laws 10/1980 and 11/1998. The benchmarking, energy audit, and retro-commissioning portions of this new legislation can be handled in a similar fashion. By working with a design professional to coordinate all of the required assessments and repairs, owners can smoothly navigate the sea of new regulations without undue time and expense.

To find out more about how the "Greener, Greater Buildings Plan" will affect your building, contact Craig A. Hargrove, AIA LEED AP, with Hoffmann Architects at 212.789.9915 or c.hargrove@hoffarch.com.

Founded in 1977, Hoffmann Architects specializes in the rehabilitation of the building envelope. The firm's work focuses exclusively on the exteriors of existing structures, diagnosing and resolving deterioration within facades, roofing systems, windows, waterproofing materials, plazas/terraces, parking garages, and historic and landmark structures. Our technical professionals investigate and correct damage resulting from time and weather, substandard or improper construction, design defects, material failures, poor workmanship, structural movement, and stress.