

THE NEW YORK CITY
**GREENER,
GREATER
BUILDINGS PLAN**
AND HOW IT AFFECTS YOU

G.Works

WE MAKE IT EASY TO BE GREEN

GREENER GREATER BUILDINGS PLAN

NEW YORK CITY LEGISLATION – PASSED 12/9/2009

As part of PlaNYC, the City has passed four pieces of legislation that make the energy code stricter, require installation of lighting upgrades and tenant meters in non-residential spaces, and require most buildings over 50,000 SF to undertake benchmarking and audits, and implement retro-commissioning measures. The legislation will ultimately save New Yorkers \$700 million in annual energy costs, create thousands of construction-related jobs, and reduce greenhouse gas emissions by over 5%, the largest single component of the citywide goal of 30%. The key points of each City legislative measure are summarized below.

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For more information about G.Works and how we can help you comply, go to: www.g-works-group.com

NYC ENERGY CONSERVATION CODE (LOCAL LAW 85)

Introduction

Like most states, New York utilizes the International Energy Conservation Code (IECC) as the State code. However, it uniquely allows renovations affecting less than 50% of a building system to be exempted from compliance. As a result, most commercial square footage in the state has been exempted from compliance with the Code because most of the state’s square footage is in New York City, where renovations are frequently undertaken floor-by-floor or space-by-space. The City has decided to close this loophole by requiring that all alterations or renovations adhere to the IECC, and thereby created the New York City Energy Conservation Code (ECC).

Requirements

The legislation requires all renovations, repairs, and alterations to an existing building, system or portion thereof to comply with the ECC. Changes to mechanical systems that require a permit must also adhere to the ECC, as well as all additions that increase the conditioned floor areas or height of a building. The only exemptions are any installations of storm windows or glass-only replacements in existing structures, any use of insulated cavities during construction, or any construction where the existing roof, wall or floor cavity is not exposed (provided building energy use is not increased).

Deadline

The Energy Conservation Code goes into effect on July 1, 2010.

Documentation

All project applications to the Department of Buildings (DOB) must include the following: a signed and sealed statement by a registered design or lead energy professional, and both an energy analysis and supporting documentation that demonstrates compliance with the ECC. For work that is exempt from permit, per section 28-105.4 of the New York City Administrative Code, only a signed and sealed statement from a registered professional is necessary.

Applicability: Building Type

Building Type	Required to Adhere to Code	Exempt from Code
City Buildings	All Buildings	Any Landmarks, or State or National Historical Places
Commercial Buildings	All Buildings	Any Landmarks, or State or National Historical Places
Residential Buildings	All Buildings	Any Landmarks, or State or National Historical Places

LIGHTING UPGRADES AND INSTALLATION OF ELECTRICAL SUB-METERS (LOCAL LAW 88)

Introduction

Non-residential lighting is responsible for 18% of New York City buildings' energy use and carbon emissions. Efficient lighting systems not only drastically reduce energy consumption, but are also low-cost and therefore pay for themselves in a relatively short period. The installation of electrical sub-meters will also allow tenants to better monitor their spaces' electricity consumption.

Requirements

The City will now require all large, non-residential buildings to upgrade lighting systems to meet ECC standards. Electrical sub-meters must also be installed in commercial tenant spaces that are over 10,000 SF. Each tenancy must have its own meter, sub-meter or share a sub-meter with other tenancies on the floor. Meters must individually measure each tenant space, and each tenant must receive a monthly statement. If sub-meters are shared, tenants must also receive notification of the percentage of space they inhabit.

Deadline

The lighting upgrades, installation and use of electrical sub-meters, and report filing must be completed by January 1, 2025. Regardless of changes in the ECC, compliance must only be demonstrated once: at time of the lighting upgrade.

Documentation

A report must be prepared by either a registered design professional, a licensed master, or special electrician certifying both that the lighting systems are updated in compliance with the ECC, and that sub-meters have been installed.

Applicability: Building Type

Building Type	Required to Adhere to Code	Exempt from Code
City Buildings	<ul style="list-style-type: none"> • All buildings over 50,000 SF, • Or 2 or more buildings together exceeding 100,000 SF that either share a tax lot or are held by the same condominium ownership 	<ul style="list-style-type: none"> • Buildings with systems already in compliance with the ECC
Commercial and Mixed-Use Buildings	<ul style="list-style-type: none"> • All buildings over 50,000 SF, • Or 2 or more buildings together exceeding 100,000 SF that either share a tax lot or are held by the same condominium ownership 	<ul style="list-style-type: none"> • Buildings with systems already in compliance with the ECC • Residential units in R-2, R-3 and spaces serving these units (all long-term residences, other than dormitories and supportive housing)
Residential Buildings	<ul style="list-style-type: none"> • Buildings over 50,000 SF, or two or more buildings together exceeding 100,000 SF that either share a tax lot or are held by the same condominium ownership, • Applies to: <ul style="list-style-type: none"> ○ Base building ○ Spaces within occupancy group R-1 (i.e. college dorms and supportive housing) ○ Non-residential spaces within multi-family buildings (such as ground floor retail) 	<ul style="list-style-type: none"> • Buildings with systems already in compliance with the ECC • All residential property classified as Class One under subdivision one of Section 1802 of the Real Property Tax Law, which includes: <ul style="list-style-type: none"> ○ 1,2,or 3-family non-co-op or non-condo residences and dwelling spaces ○ Co-ops or condos with 3 or less dwellings ○ Condos 3 or less stories high, provided that none were previously classified as non-condos • Dwelling units and spaces serving these units within occupancy groups R-2 and R-3 (all long-term residences) • Spaces within occupancy group A-3 that are within a house of worship

BENCHMARKING ENERGY AND WATER USE (LOCAL LAW 84)

Introduction

Benchmarking reveals the relative efficiency of underlying systems, enabling owners, managers, tenants and prospective buyers to evaluate operational performance in comparison to similar buildings. The legislation now requires owners of large buildings to annually benchmark energy and water consumption. Water Benchmarking is voluntary for 2011. The NYCDEP will upload water data automatically, commencing 2012.

Requirements

Benchmarking requires the use of the EPA's internet based Portfolio Manager, through which the compliance report is filed to the NYC department of Finance. The owner is required to submit comprehensive energy data including oil, gas, steam, and electricity, as pertains to the building. The owner is also required to submit letters of energy data collection, for separately metered non-residential tenants. Additionally, the owner must provide certain commercial and retail tenant information such as the hours of operation, numbers of shift workers, and number of PCs used. Additional requirements include determining space allocation for type-of-use within the building.

Deadline

For City buildings, Benchmarking reporting begins no later than May 1, 2010 and is due every May 1, thereafter. For privately-owned buildings, Benchmarking reporting begins no later than May 1, 2011, and is due every May 1 thereafter. In 2011, fines for non-compliance will not be assessed until August 1.

Documentation

Benchmarking metrics include the energy utilization index, a rating comparing energy and water use to that of similar buildings, and comparison of data for the building across multiple years. The information will not be made public. The owner is required to keep for three years all corresponding records, such as proof of submittal of relevant energy data request forms, the EPA letter of confirmation of Benchmarking report, energy records for the building, as well as all calculations and assumptions relevant to the Portfolio Manager report.

Applicability: Building Type

Building Type	Required to Adhere to Code	Exempt from Code
City Buildings	<ul style="list-style-type: none"> • All buildings over 10,000 SF • Two or more buildings on the same tax lot are considered one building 	<ul style="list-style-type: none"> • Buildings in which the City is a tenant and does not pay the energy bills • Buildings participating in HPD programs that are under 50,000 SF • Buildings participating in the tenant-interim lease apartment purchase program
Commercial and Mixed-Use Buildings	<ul style="list-style-type: none"> • All buildings over 50,000 SF, • Or 2 or more buildings together exceeding 100,000 SF that either share a tax lot or are held by the same condominium ownership 	<ul style="list-style-type: none"> • Any buildings with data centers, television studios, or trading floors exceeding 10% of gross SF (they are exempt until appropriate adjustments can be made in the EPA PM)
Residential Buildings	<ul style="list-style-type: none"> • Buildings over 50,000 SF, or two or more buildings together exceeding 100,000 SF that either share a tax lot or are held by the same condominium ownership, • Applies to: <ul style="list-style-type: none"> ○ Base building and master meters ○ Spaces within occupancy group R-1 (i.e. college dorms and supportive housing) ○ Non-residential spaces within multi-family buildings (such as ground floor retail) 	<ul style="list-style-type: none"> • All residential property classified as Class One under subdivision one of Section 1802 of the Real Property Tax Law, which includes: <ul style="list-style-type: none"> ○ 1,2,or 3-family non-co-op or non-condo residences and dwelling spaces ○ Co-ops or condos with 3 or less dwellings ○ Condos 3 or less stories high, provided that none were previously classified as non-condos • Dwelling units and spaces serving these units within occupancy groups R-2 and R-3 (all long-term residences) • Spaces within occupancy group A-3 that are within a house of worship

ENERGY AUDITS AND RETRO-COMMISSIONING OF BASE BUILDING SYSTEMS (LOCAL LAW 87)

Introduction

Building audits are used to identify all potential energy-saving retro-commissioning (operational) and retrofit (capital) measures. Once every 10 years, the legislation requires large buildings to perform both an energy audit and retro-commissioning study of central (base building) systems. The energy audit and retro-commissioning reports are combined into an Energy Efficiency report. Individual tenant spaces are exempt from both processes.

Requirements

The energy audits and retro-commissioning studies only apply to buildings' central systems, including the building envelope, HVAC systems, conveying systems, domestic hot water systems, and electrical and lighting systems. This includes systems within tenant spaces that are owned and maintained by the owner, such as perimeter heating. It does not include systems that are within tenant spaces that are owned and maintained by the tenant, such as unitary HVAC. Industrial processes (chemical or mechanical procedures involved in manufacturing an item) are also exempt from this legislation.

Energy audit

The energy audit must be an ASHRAE Level II Audit. This process identifies at a minimum:

- o All potential energy use-reducing measures
- o The associated cost, annual savings, and simple payback for each measure
- o The building's benchmarking output, consistent with the USEPA Portfolio Manager tool
- o A breakdown of energy use by system and related predicted savings
- o How tenant-space energy use impacts the central system's energy consumption

Retro-commissioning

Through analysis, corrections and testing, the agent must certify that all systems and operations are running efficiently. These include all valves, sensors, controls, programmed settings and/or operational practices regarding HVAC, lighting, water, and other systems.

Retro-commissioning compliance can be demonstrated by completing all of the following:

- Operating protocols, calibration, and sequencing:
 - o HVAC temperature and humidity set points and setbacks are appropriate and operating schedules reflect major space occupancy patterns and the current facility requirements.
 - o HVAC sensors are properly calibrated.
 - o HVAC controls are functioning and control sequences are appropriate for the current facility requirements.
 - o Loads are distributed equally across equipment when appropriate (i.e. fans, boilers, pumps, etc. that run in parallel).
 - o Ventilation rates are appropriate for the current facility requirements.
 - o System automatic reset functions are functioning appropriately, if applicable.
 - o Adjustments have been made to compensate for oversized or undersized equipment so that it is functioning as efficiently as possible.
 - o Simultaneous heating and cooling does not occur unless intended.
 - o HVAC system economizer controls are properly functioning, if applicable.
 - o The HVAC distribution systems, both air and water side, are balanced.
 - o Light levels are appropriate to the task.
 - o Lighting sensors and controls are functioning properly according to occupancy, schedule, and/or available daylight, where applicable.
 - o Domestic hot water systems have been checked to ensure proper temperature settings.
 - o Water pumps are functioning as designed.
 - o System water leaks have been identified and repaired.

- Cleaning and repair:
 - o HVAC equipment (vents, ducts, coils, valves, soot bin, etc.) is clean.
 - o Filters are clean and protocols are in place to replace, as appropriate.
 - o Light fixtures are clean.
 - o Motors, fans, and pumps, including components such as belts, pulleys, and bearings, are in good operating condition.
 - o Steam traps have been replaced as required to maintain efficient operation, if applicable.
 - o Manual overrides on existing equipment have been remediated.
 - o Boilers have been tuned for optimal efficiency, if applicable.
 - o Exposed hot and chilled water and steam pipes three (3) inches or greater in diameter with associated control valves are insulated in accordance with the standards of the New York city energy conservation code as in effect for new systems installed on or after July 1, 2010.
 - o In all easily accessible locations, sealants and weather stripping are installed where appropriate and are in good condition.

(LOCAL LAW 87) CONTINUED

- Training and documentation:
 - Permits for all HVAC, electrical and plumbing equipment are in order.
 - Critical operations and maintenance staff have received appropriate training, which may include labor/management training, on all major equipment and systems and general energy conservation techniques.
 - Operational and maintenance record keeping procedures (log books, computer maintenance records, etc.) have been implemented.
 - The following documentation is on site and accessible to the operators: the operations and maintenance manuals, if such manuals are still available from the manufacturer, the maintenance contracts, and the most recent retro-commissioning report.

Deadline

Schedule

Energy efficiency reports must be filed once every ten years on a staggered schedule; deadlines for the first set of reports range from 2013 – 2022. Submission is required in the calendar year whose last digit coincides with the last digit of the building’s tax block number. As examples: if the building’s tax block number ends in 3, the first set of reports are due in calendar year 2013; if the tax block number ends in 2, the reports are due 2022. The Department of Finance will notify each building of the requirements three years prior to the due date, and every year thereafter until the due date. Buildings must report within their due year.

Extensions

All buildings that are less than 10 years old, or have undergone substantial rehabilitation in the last decade, may defer the filing of an energy efficiency report for up to 10 years. Limited extensions are also allowed for owners unable to complete the required energy audit and retro-commissioning on time. This extension does not affect the next reporting date. Finally, extensions may also be granted for buildings subject to financial hardship.

Early compliance

Buildings may pre-comply with the first due date by submitting an energy efficiency report between January 1, 2013 and December 31, 2013. This early submission does not affect the next reporting date. For all documents submitted early, a registered design professional must certify that the processes and reports meet all specified criteria.

- An early audit will be accepted if it was:
 - Completed after January 1, 2006
 - ASHRAE Level II or performed under a NYSERDA or NYPA contract

- An audit completed after December 9, 2009 must also:
 - Be ASHRAE Level II
 - Consult the building's O & M staff before and during the auditing process
 - Have a team that includes someone who is either a NYSERDA-approved Flex Tech contractor, CEM, CEA, HPBD (certified by ASHRAE), MFBA (certified by BPI), or someone with at least 3 years of experience auditing buildings larger than 50,000 GSF
- Early retro-commissioning will be accepted if it is performed:
 - After December 9, 2009
 - Under NYSERDA contract, or certified by a retro-commissioning agent
 - Alongside pre, and ongoing, consultations of the building's O & M staff
 - By a team that includes an individual who is either a CCP (BCA-certified), CBCP (AEE-certified), CPMP (ASHRAE-certified), ACAP (certified by UWisconsin), or department-certified; or has least one year of experience retro-commissioning buildings larger than 50,000 GSF

Documentation

The energy audit report must be conducted under the supervision of an energy auditor (a registered design professional). The retro-commissioning study must be completed by a retro-commissioning agent. Both must be completed within four years before the energy efficiency report is filed. Documentation must be kept at every building.

The audit report must list:

- All information found in the audit (see information above)
- The audit's date
- The auditor's signature and certification of credentials
- Any additional cost estimates due to compliance with landmark or historic places regulations

The contents of the retro-commissioning report must include:

- All project and team information, including appropriate certification
- All building information, including central systems and benchmarking output
- The testing protocol used, including all equipment used, and for each:
 - A list of sample rates
 - The testing methodology (such as any diagnostic equipment used)
 - The test results
- All findings, including, for each:
 - A brief description
 - All recommended corrections
 - The predicted benefits
 - The estimated annual savings (energy and cost)
 - The estimated implementation costs
 - The simple payback
- All deficiencies corrected
 - Who corrected them and the date of repair
 - The actual cost
 - The projected savings

Applicability: Building Type

Building Type	Required to Adhere to Code	Exempt from Code
City Buildings	<ul style="list-style-type: none"> All Buildings over 50,000 SF, Or 2 or more buildings together exceeding 100,000 SF that either share a tax lot or are held by the same condominium ownership Buildings must be owned by the City, or City must pay all or part of the annual energy bills 	<ul style="list-style-type: none"> Buildings participating in HPD programs Buildings participating in the tenant-interim lease apartment purchase program Buildings managed by the NYC HHC Any senior college in the CUNY system Any cultural institution within the Cultural Institutions Group, per DCA
Commercial Buildings	<ul style="list-style-type: none"> All Buildings over 50,000 SF, Or 2 or more buildings together exceeding 100,000 SF that either share a tax lot or are held by the same condominium ownership 	<ul style="list-style-type: none"> All systems within individual tenant spaces
Residential Buildings	<ul style="list-style-type: none"> All Buildings over 50,000 SF, Or 2 or more buildings together exceeding 100,000 SF that either share a tax lot or are held by the same condominium ownership Includes systems in tenant spaces that are owned and maintained by the owner (ie. heating). 	<ul style="list-style-type: none"> All systems owned by tenants, or for which tenant bears full maintenance responsibility and is within tenant space All residential property classified as Class One under subdivision one of Section 1802 of the Real Property Tax Law, which includes: <ul style="list-style-type: none"> 1,2,or 3-family non-co-op or non-condo residences and dwellings Co-ops or Condos with 3 or less dwellings Condos 3 or less stories high, provided that none were previously classified as non-condos

Applicability: Energy Performance

Some buildings are exempt from parts of the energy efficiency report due to their energy performance.

Report Component	Any Building is Exempt if...								
Energy audit	<ul style="list-style-type: none"> It has one of the following: <ul style="list-style-type: none"> EPA Energy Star Certification for two of the three previous years LEED EB Certification within the past 4 years Energy performance 25 or more points higher than the average performance of a similar building for 2 of the 3 previous years A simple building (one with neither a central chilled water system nor a central cooling system that covers over 10% of gross area) is exempt from only the first audit if it meets 6 of the following 7 criteria: <table border="0" style="width: 100%;"> <tr> <td>o Individual heating controls</td> <td>A cool roof</td> </tr> <tr> <td>o Low flow faucets and shower heads</td> <td>Insulated exposed pipes</td> </tr> <tr> <td>o Insulated domestic hot water tanks</td> <td>Front loading washing machines</td> </tr> <tr> <td>o Common area and exterior lighting</td> <td></td> </tr> </table> 	o Individual heating controls	A cool roof	o Low flow faucets and shower heads	Insulated exposed pipes	o Insulated domestic hot water tanks	Front loading washing machines	o Common area and exterior lighting	
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o Low flow faucets and shower heads	Insulated exposed pipes								
o Insulated domestic hot water tanks	Front loading washing machines								
o Common area and exterior lighting									
Retro-commissioning report	<ul style="list-style-type: none"> It received LEED EB certification within the 2 years prior to filing, and received the retro-commissioning LEED points. 								

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