

New York City Green Building Legislation

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INTRODUCTION

On December 9, 2009, New York City (NYC) passed a package of green building legislation to improve the energy efficiency of existing buildings, reduce greenhouse gas emissions, lower energy costs, create thousands of green jobs, and establish a New York City Energy Conservation Code (NYCECC).

Under the umbrella of PLANYC, which outlined measures to reduce NYC's total carbon footprint 30% by 2030, the four (4) new bills are known as the "Greener Greater Buildings Plan". These new bills as a whole are expected to reduce NYC's carbon footprint by nearly 5%. Keeping in mind that buildings in NYC account for approximately 80% of the carbon emissions, with energy costs estimated at \$15 billion a year.

The "Greener Greater Buildings Plan" consists of the following bills:

- **1 - Energy Conservation Code:** For years, attempts to improve the energy efficiency of existing buildings have suffered from what is known as the "50% rule" in the Energy Conservation Construction Code of New York State. This rule means that buildings do not need to comply with contemporary codes when renovating less than 50% of a building system. For example, in a 50-story building, if 24 floors of lighting are replaced, the building does not need to comply with the lighting provisions of the current Energy Code. In a place like NYC where buildings are often renovated only a few floors at a time, this loophole has stymied the introduction of energy efficient technologies. The creation of the NYCECC closes this giant loophole, and gives NYC direct control over its building energy standards.
- **2 – Energy Audits & Retro-Commissioning:** Requires energy use Audits and Retro-Commissioning every 10 years. The Audit process will identify capital improvements that will pay for themselves within a "reasonable" period. Retro-Commissioning involves returning measures that will ensure building systems are operating efficiently. However, the bill does NOT require owners to embark on capital expense projects to increase efficiency. Owners can waive the Audit requirement if they are Energy Star or LEED Certified for Existing Buildings. City owned buildings are required to institute any measure that the Audit and Retro-Commissioning determine has a less than a 7-year payback.
- **3 - Benchmarking:** Requires an annual assessment of water and energy use performance through the free, on-line tool provided by the Environmental Protection Agency (EPA) called Portfolio Manager. This allows buildings to compare their performance over time with themselves and with other buildings of similar size and type. It will empower building owners to take steps towards minimizing energy use, and maximizing the economic benefits inherent to energy conservation. The bill accounts for some of the difficulties of implementing Portfolio Manager in NYC by waiving public disclosure of performance for data centers and other high intensity energy users.
- **4 - Lighting & Sub-Metering:** Requires major tenants be sub-metered, and lighting systems to be upgraded to current code whenever a renovation is pursued (whether you intended to do electrical work or not). Upgrading lighting is an extremely effective means to both reduce energy consumption and improve the environmental quality of commercial spaces.

ENERGY CONSERVATION CODE

Article 1001 – The New York City Energy Conservation Code (NYCECC)

1. **Background:**

- a. The current Energy Conservation Construction Code of New York State (ECCCNYS) indicates that for “existing buildings” the code only applies when an alternation leads to the replacement of at least 50% of a building’s system or subsystem.
- b. This means that there are NO energy efficient requirements for many renovation projects of a lesser magnitude or lower threshold.
- c. As a result, NYC is failing to reap the benefits of energy improvements.
- d. Now, the NYC Council will impose energy standards to renovation projects at a lower threshold than that mandated by ECCCNYS.
- e. New York City Construction Codes shall now consist of the following:
 - (1) NYC Building Code
 - (2) NYC Mechanical Code
 - (3) NYC Plumbing Code
 - (4) NYC Fuel Gas Code
 - (5) NYC Energy Conservation Code (NYCECC) - new

2. **Where is this Required?**

- a. Additions, alternations, renovations or repairs to an existing building, building system or portion thereof shall conform to the provisions of the NYCECC, as such provisions related to new construction.
- b. The unaltered portions of the existing building or building system are NOT required to comply with NYCECC.

3. **What is Required?**

- a. The ECCCNYS 2007 and any amendments that are more stringent than such code are adopted by New York City as the minimum requirements for the design, construction and alteration of buildings. These will now be known as the New York City Energy Conservation Code (NYCECC).
- b. Whenever any provision of the ECCCNYS provides for a more stringent requirement than imposed by the NYCECC, the more stringent requirements shall govern.

4. **When do you need to Comply?** The law shall take effect on July 1, 2010, and shall apply to work for which applications for construction document approvals are submitted to the Department of Buildings on and after such date.

5. **What is Submitted?**

- a. Professional Statement
- b. Energy Analysis
- c. Supporting Documentation

6. **What is the Application Fee?** The department may impose a fee for filing and review of such documentation. However, the exact fee amount has yet to be determined.

7. ***What are the Construction Exceptions?***

- a. Storm Windows installed over existing fenestration.
- b. Glass only replacements in an existing sash and frame.
- c. Existing ceiling, wall or floor cavities exposed during construction, provided that these cavities are filled with insulation.
- d. Construction where the existing roof, wall or floor cavity is not exposed.

8. ***What are the Building Exceptions?***

- a. Any building or structure that is listed in the State or National Register of Historic Places is exempt from this code.
- b. Any building or structure that is designated by the Landmarks Preservation Committee is exempt from the envelope and exterior lighting requirements of this code.
- c. Any interior that is designated as a NYC landmark is exempt from this code.

9. ***Future Amendments:*** Amendments shall be proposed as follows:

- a. Following any revision of the ECCCNYC that establishes a more stringent requirement.
- b. No later than the end of the third year after the effective date of this section, and every third year thereafter.

10. ***Advisory Committee:*** The commissioner shall establish a NYC energy conservation code Advisory Committee to provide advice and recommendations regarding such code and subsequent revisions.



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ENERGY AUDITS & RETRO-COMMISSIONING

Article 308 – Energy Audits & Retro-Commissioning of Base Building Systems

1. **Background:**

- a. According to the US Department of Energy, buildings consume approximately 37% of the energy, and 68% of the electricity produced annually in the US.
- b. The energy used in a building can greatly impact the environment in many adverse ways, so it is critical to maximize the efficiency of the building systems.
- c. Everyone benefits from an efficient building. For example an owner of an efficient building minimizes building operating costs, increases reliability of building systems, and improves indoor environment quality for tenants and their occupants.

2. **Definitions:**

- a. **Energy Audit:** A systematic process of identifying and developing modifications and improvements of the base building systems, including but not limited to alterations of such systems and the installation of new equipment, insulation or other generally recognized energy efficiency technologies to optimize energy performance of the building and achieve energy savings.
- b. **Retro-Commissioning:** A systematic process for optimizing the energy efficiency of existing base buildings systems through the identification and correction of deficiencies in such systems, including but not limited to repairs of defects, cleaning, adjustments of valves, sensors controls or programmed settings, and/or changes in operational practices.
- c. **Base Building Systems:** The Base Building Systems is defined as systems or subsystems of a building (common, public, shared, storage, mechanical/electrical rooms, and back-of-house spaces) that use energy and/or impact energy consumption including:
Building Envelope.
HVAC Systems.
Conveying Systems (elevators and escalators).
Domestic Hot Water Systems.
Electrical and Lighting Systems.
- d. **Covered Building:** As it appears in the records of the department of finance: (i) a building that exceeds 50,000 gross square feet, (ii) two or more buildings on the same tax lot that together exceed 100,000 gross square feet, or (iii) two or more buildings held in the condominium form of ownership that are governed by the same board of managers and that together exceed 100,000 gross square feet.
- e. **Simple Building:** A “Covered Building” with neither a central chilled water system, nor a central cooling system that covers more than 10% of the building’s gross area.

3. **Where is this Required?** The requirements of this article apply to “Covered Buildings” defined above by the department of finance:

4. **What is Required?** The article states that the owner of a “Covered Building” shall:
 - a. Conduct an ASHRAE Level II Energy Audit on the “Base Building System”.
 - (1) All reasonable measures, including capital improvements, that would, if implemented, reduce energy use and/or the cost of operating the building.

- (2) For each measure, the associated annual energy savings, the cost to implement, and the simple payback, calculated by a method determined by the department.
 - (3) The building's benchmarking output consistent with the EPA Portfolio Manager tool.
 - (4) A breakdown of energy use by system, and predicated energy savings by system, after implementation of the proposed measures.
 - (5) A general assessment of how the major energy consuming equipment and systems used within tenant spaces impact the energy consumption of the base building systems based on a representative sample of spaces.
- b. Perform a Retro-Commissioning on the "Base Building System".
 - (1) Operating protocols, calibration and sequencing.
 - (2) Cleaning and repair.
 - (3) Training and documentation.
 - c. After completing the items above, submit an Energy Efficiency Report. This report must be submitted on the appropriate due date, and then resubmitted every 10th year.
5. **When do you need to Comply?** The law goes into immediate effect. However, the Energy Efficiency Report (EER) shall be filed between January 1 and December 31 of the calendar year in which the report is due, and every 10th calendar year thereafter. The first reports are due in the year 2013. The "due date" is determined by the calendar year with a final digit that is the same as the last digit of the building's tax block number. For example, if the last digit of a tax block number is 3, then the EER is due 2013. If the tax block number is 4, then the EER is due 2014, etc., etc.
6. **What is Submitted?** An Energy Efficiency Report (EER) is submitted to the Department of Buildings that is prepared by a certified professional, and shall contain the following:
 - a. Energy Audit Report (must be within 4 years prior to filing EER)
 - b. Retro-Commissioning Report (must be within 4 years prior to filing of EER).
7. **Who are the Certified Professionals?** The Department of Buildings does have the following criteria for performing and certifying both reports:

Energy Audit Report	Retro-Commissioning Report
<input type="checkbox"/> Registered Design Professional	<input type="checkbox"/> Certified Building Commissioning Professional (CBCP)
<input type="checkbox"/> Certified Energy Manager (CEM) or Certified Energy Auditor (CEA)	<input type="checkbox"/> Commissioning Process Management Professional (CPMP)
<input type="checkbox"/> High Performance Building Design Professional (HPBD)	<input type="checkbox"/> Certified Commissioning Professional (CCP)
<input type="checkbox"/> Multi-Family Building Analyst (MFBA)	<input type="checkbox"/> Accredited Commissioning Process Authority Professional (CxAP)
<input type="checkbox"/> An individual with at least three years of professional experience performing energy Audits on buildings larger than 50,000 gross square feet	<input type="checkbox"/> Retro-Commissioning team with at least one years of professional experience performing energy audits on buildings larger than 50,000 gross square feet

8. **What is the Application Fee?** The department may impose a fee for filing and review of such reports. However, the exact fee amount has yet to be determined.

9. *What are the Exceptions?*

- a. Energy Efficiency Report is not required if:
 - (1) The building does not meet the definition of “Covered Building”.
 - (2) If the property classified as Class 1 (1,2 and 3 family residential) pursuant to subdivision one section 1802 of the real estate property tax law of the state of New York.

- b. Energy Audit Report is not required if:
 - (1) The “Covered Building” has received an EPA Energy Star label for at least 2 of 3 years prior to the filing of the building’s Energy Efficiency Report, and certified by a registered design professional.
 - (2) A registered design professional submits supporting documentation and certifies the building’s energy performance is 25 or more points better than the performance of an average building of its type over a 2-year period, and within the 3-year period prior to the filing of the Energy Efficiency Report.
 - (3) The covered building has received certification under LEED 2009 rating system for Existing Building published by the USGBC within 2 years prior to the filing of the building’s Energy Efficiency Report.
 - (4) A simple building that is in compliance with all the requirements defined in the legislation and certified by a registered design professional.

- c. Retro-Commissioning Report is not required if:
 - (1) The “Covered Building” has received certification under LEED 2009 rating system for Existing Building published by the USGBC within 2 years prior to the filing of the building’s Energy Efficiency Report, and earned LEED point EA 2.1 for Existing Building Commissioning (Investigation), and Analysis and EA 2.2 for Existing Building Commissioning (Implementation).

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Energy Audit & Retro-Commissioning Compliance Flow Chart

1. Is my building > 50,000 gsf?
2. Are 2 or more of my buildings on the same tax lot totaling > 100,000 gsf?
3. Are 2 or more of my buildings held in the condominium of ownership governed by the same board of managers totaling > 100,000 gsf?

4. Is my building(s) classified under subdivision 1 of section 1802 of real property tax law of the state of NY?

My building must comply with the new legislation.

My building is exempt from complying with the new legislation.

5. Has my building received an EPA Energy Star Label at least 2 year prior to the Energy Efficiency Report due date?

OR

6. Has my building received LEED 2009 certification for "Existing Building" at least 2 year prior to the Energy Efficiency Report due date?

9. Has my building received LEED 2009 certification for "Existing Building" at least 2 year prior to the Energy Efficiency Report due date? And obtain LEED Point EA 2.1 & 2.2?

Submit an Energy Analysis Report.

Yes

My building is exempt from conducting an ASHRAE Energy Audit.

No

7. Is my building a "Simple Building"?

Yes

8. Is my "Simple Building" in compliance?

Yes

First year Energy Audit is exempted.

No

Conduct an ASHRAE Energy Audit.

Yes

My building is exempt from conducting Retro-Commissioning.

No

Conduct a Retro-Commissioning.

My building complies with the new legislation.

BENCHMARKING

Article 309 – Benchmarking Energy and Water Use

1. *Definitions:*

- a. *Benchmark:* To input and submit to the benchmarking tool the total use of energy and water for a building for the previous calendar year, and other descriptive information for such building as required by the benchmarking tool.
- b. *City Building:* A building that is more than 10,000 gross square feet, as it appears in the records of the department of finance, that is owned by the city or for which the city regularly pays all or part of the annual energy bills, provided that two or more buildings on the same tax lot shall be deemed to be one building. The exceptions are as follows:
 - (1) Any building not owned by the city in which the city is a tenant and for which the city does not pay all the energy bills;
 - (2) Any building owned by the city that participates in the tenant interim lease apartment purchase program; or
 - (3) Any building owned by the city that (i) is 50,000 gross square feet or less, as it appears in the records of the department of finance, and (ii) participates in a program administered by the department of housing preservation and development.”
- c. *Covered Buildings:* As it appears in the records of the department of finance: (i) a building that exceeds 50,000 gross square feet, (ii) two or more buildings on the same tax lot that together exceed 100,000 gross square feet, or (iii) two or more buildings held in the condominium form of ownership that are governed by the same board of managers and that together exceed 100,000 gross square feet. The exceptions are as follows:
 - (1) Any building that is a City Building.
 - (2) Any building that is owned by the city.
 - (3) Real property classified as Class 1 pursuant to subdivision one of section 1802 of their real property tax law.

2. *Where is this Required?* The requirements of this article apply to:

- a. All City Buildings.
- b. All Covered Buildings.

3. *What is Required?* Benchmarking information is required for:

- a. Consumption for each energy source (electricity, gas, fuel oil, steam).
- b. Water use per gross square feet.

4. *When do you need to Comply?* The law shall take immediate effect, but requirements for:

- a. City Buildings must comply no later than May 1, 2010, and no later than every May thereafter.
- b. Covered Buildings must comply no later than May 1, 2011, and no later than every May thereafter.

5. *What is Submitted?* Information will need to be uploaded to EPA’s benchmarking website in the following ways:

- a. Directly by the owner or owner representative.
- b. Direct upload from utility company and EPA.

6. ***What is the Application Fee?*** At the current time no fees have been established. We anticipate there will be no fee for data submission to the web-based platform.
7. ***What are the Exceptions?*** No upgrades are required for:
- a. Covered Buildings that contain the following, and which together exceed 10% of gross square footage:
 - (1) Data Center;
 - (2) Television Studio; and/or
 - (3) Trading Floor
 - b. Benchmarking of water use shall not be required unless the building was equipped with automatic meter reading equipment by the EPA for the entirety of the previous calendar year.
8. ***Disclosure:***
- a. The Department of Finance shall make the information generated by the benchmarking tool available to the public on the Internet as outlined below.
 - (1) City Buildings: September 1, 2011, and no later than every September 1 thereafter.
 - (2) Covered Buildings whose primary use is not Residential: September 1, 2012, and no later than every September 1 thereafter.
 - (3) Covered Buildings whose primary use is Residential: September 1, 2013, and no later than every September 1 thereafter.
 - b. The information will include:
 - (1) The energy utilization index.
 - (2) The water use per gross square foot.
 - (3) Where available, a rating that compares the energy and water use of the buildings to that of similar buildings.
 - (4) A comparison of data across calendar years for any years such building was benchmarked.
9. ***Reports:*** No later than December 31 of 2011, 2012 and 2013 respectively, the office of long-term planning and sustainability shall prepare, submit and post to the Internet a report reviewing and evaluating the administration and enforcement of this article and analyzing data obtained from the benchmarking tool. Such report shall contain the following information:
- a. The energy and water efficiency of buildings in NYC.
 - b. The accuracy of benchmarked data and whether there is a need to train and/or certify individuals who benchmark.
 - c. Compliance with the requirements of this article.
 - d. Any administrative and legislative recommendations for strengthening the enforcement of this article.
 - e. The effectiveness of the benchmarking tool in accounting for NYC conditions, including, but not limited to, high density occupancies, use of steam, large building size, and specific high-energy users such as data centers, TV studios, and trading floors.
 - f. Such other information and analyses as the office of long-term planning and sustainability deems appropriate.

LIGHTING

Article 310 - Required Upgrade of Lighting Systems

1. **Background:**
 - a. Non-residential lighting is responsible for almost 18% of energy used in NYC buildings, and roughly 18% of carbon emissions from buildings
 - b. Improvements in lighting technology make it feasible to reduce energy consumption.
 - c. Investments in more efficient lighting systems are realized through operation savings.
2. **Where is this Required?** The requirements of this article apply to “Covered Buildings” defined by the Department of Finance:
 - a. Properties in excess of 50,000 gsf.
 - b. Two or more buildings on the same tax lot that together exceed 100,000 gsf.
 - c. Two or more buildings held in the condominium form of ownership that is governed by the same board of managers and that together exceed 1000,000 gsf.
3. **What is Required?** The article states to comply with standards required for new systems, including lighting controls (interior, light reduction, automatic shutoff), tandem wiring, exit signs, interior lighting power requirements, and exterior lighting. The code for “new systems” is to comply with the standards set forth in Section 805 of the NYCECC (see next page.)
4. **When do you need to Comply?** The law goes into immediate effect, and the lighting systems of “Covered Buildings” shall be upgraded to comply with the standards required for new systems prior to January 1, 2025.
5. **What is Submitted?** File a report to the Department of Buildings that is prepared by a registered professional or licensed master electrician certifying that such upgrade has been completed, and work is in compliance with the technical standards of the NYC Electric Code. The exact report format has yet to be determined.
6. **What is the Application Fee?** The department may impose a fee for filing and review of such reports. However, the exact fee amount has yet to be determined.
7. **What are the Exceptions?** No upgrades are required for:
 - a. An element of a lighting system that is already in compliance with the NYCECCC standards.
 - b. Lighting power densities in any space bound by permanent floor-to-ceiling partitions and/or closeable doors that are already in compliance with NYECCC standards.
 - c. Dwelling units in occupancy group R-2. These are buildings containing sleeping units or more than 2 dwelling units for shelter and sleeping accommodations on a long-term bases for a month or more at a time. These include adult homes, apartment houses, apartments hotels, convents/monasteries with more than 20 occupants, student apartments, etc.
 - d. Dwelling units in occupancy group R-3. These are buildings containing no more than 2 dwelling units for shelter and sleeping accommodation on a long-term basis for a month or more at a time. These include convents/monasteries with fewer than 20 occupants, group homes, 1-2 family dwelling units, etc.
 - e. Spaces in occupancy group A-3 (assembly) that is within a “House of Worship”.
 - f. Renovations with construction costs of less than \$50,000, within a 1-year period.

NYCECC, Section 805 – Electrical Power & Lighting Systems

1. Lighting Controls

a. Interior Lighting Controls

- (1) Required in each area with enclosed walls or floor-to-ceiling partitions.
- (2) One manual control is required to be located:
 - Within the area served
 - Remotely with identification of which lights served and indication of status.
- (3) Exceptions:
 - Areas designated as security or emergency areas that must be continuously lighted.
 - Lighting in stairways or corridors that are elements of the means of egress.

b. Additional Controls

- (1) Light Reduction Controls allows occupant to reduce load by 50% (dual switching, switching each luminaire or lamp, etc.).
- (2) Auto Lighting Shutoff:
 - For buildings larger than 5,000 square feet, and controls areas that do not exceed 25,000 square feet, and are not more than 1 floor.
 - Needs manual override switch that is readily accessible and where the occupant can see the lights controlled.
 - Override switch will add a maximum of 2 hours.
 - Control areas should not exceed 5,000 square feet.
- (3) Exceptions:
 - Areas that have only 1 luminaire.
 - Areas that are controlled by an occupant-sensing device.
 - Corridors, storerooms, restrooms, or public lobbies.

c. Exterior Lighting Controls: Auto switching or photocells are required.

2. **Tandem Wiring:** Share ballasts between 2 fluorescent fixtures. The exceptions are if you use electronic ballasts, lights are on emergency circuits, or lights with no available pair.
3. **Exit Signs:** Power cannot exceed 5 watts.
4. **Interior Lighting Power Requirements:** The calculated load must be less than the pre-calculated table loads. Loads should include screw lamp holders, low-voltage lights, other lights, track lighting, and plug-in busway lights. The load does NOT include specialized medical/dental research lighting, professional sports arena playing field lighting, display lights for exhibits (in galleries, museums, monuments, etc.), guestroom lighting (in hotels, motels, boarding houses, etc.), and emergency lighting that is normally OFF.
5. **Exterior Lighting:** All exterior lighting must have a source efficiency of at least 45 lumens/watt. The exception is low-voltage landscape lighting.

SUB-METERING

Article 311 - Installation of Electric Sub-Meters in Tenant Spaces

1. **Background:**
 - a. Tenants do not often know electric consumption in tenant spaces. But they account for the majority of electricity consumed in a building.
2. **Where is this Required?**
 - a. Tenant spaces larger than 10,000 gsf on one or more floors.
 - b. A floor larger than 10,000 gsf consisting of tenant spaces let/sublet to 2 or more persons.
 - c. Where a floor has multiple tenancies, each tenancy that is 10,000 gsf or less shall (i) have a separate sub-meter; (ii) share a sub-meter with other tenant space on the floor; or (iii) share a sub-meter covering the entire floor.
3. **What is Required?** The article states to provide a meter or sub-meter that measure the flow of electricity.
 - a. Meter: This is provided by the utility company and measures the flow of electricity to a building or defined space. This will be used to bill the consumers for electrical service.
 - b. Sub-Meter: This is provided by the building OR tenant (approved by the Public Service Commission) and measures the flow electricity to a defined space in the building. This may, but need NOT, be used for apportioning the cost of electricity to building tenants or sub-tenants.
 - c. Monthly statements shall be provided to each tenant or sub-tenant with a sub-meter showing electric consumption and the amount charged to each tenant or sub-tenant for electricity use. For multiple tenancies on one floor with one sub-meter, the statement will show the electric consumption of the sub-meter and the percentage of the floor area that is leased by the tenant.
4. **When do you need to Comply?** The law goes into immediate effect, and the sub-meter requirements for existing covered tenant spaces must be completed prior to January 1, 2025.
5. **What is Submitted?** File a report to the Department of Buildings that is prepared by a registered professional or licensed master electrician certifying that sub-meters have been installed in all tenant spaces. The exact report format has yet to be determined.
6. **What is the Application Fee?** The department may impose a fee for filing and review of such reports. However, the exact fee amount has yet to be determined.
7. **What are the Exceptions?**
 - a. Dwelling units in occupancy group R-2. These are buildings containing sleeping units or more than 2 dwelling units for shelter and sleeping accommodations on a long-term bases for a month or more at a time. These include adult homes, apartment houses, apartments hotels, convents/monasteries with more than 20 occupants, student apartments, etc.
 - b. Dwelling units in occupancy group R-3. These are buildings containing no more than 2 dwelling units for shelter and sleeping accommodation on a long-term basis for a month or more at a time. These include convents/monasteries with fewer than 20 occupants, group homes, 1-2 family dwelling units, etc.
 - c. Sub-meters are not required in spaces for which the electrical consumption with such space is measured by a meter dedicated exclusively to that space.

FREQUENTLY ASKED QUESTIONS

Q1: *What version of NY State Code is currently required in New York City?*

Energy Conservation Construction Code of New York State (ECCCNYS-2007) is the current code. It allows the use of ASHRAE/IESNA Standard 90.1-2004 for prescriptive or performance paths. Beginning July 1, 2010, NYC will have its own energy code (NYCECC), which will allow either ECCCNYS-2007 or ASHRAE/IESNA Standard 90.1-2004.

Q2: *Are we required to comply with the ECCCNYS if our building alternation involves less than 50% of the building, or the subsystem, being replaced?*

As of today, your project is not required to comply. However, beginning July 1, 2010, all alterations will be required to comply with the new NYCECC.

Q3: *When using the prescriptive compliance path, is it required that all systems (lighting, HVAC, envelope) use the same standard?*

No, individual systems may select either ECCCNYS-2007 or ASHRAE/IESNA Standard 90.1-2004. So lighting can use ECCCNYS, while HVAC uses ASHRAE/IESNA or vice-versa. The new NYCECC will not change this choice.

Q4: *Related to Lighting Energy Codes, what submittals are required by the New York City Department of Buildings (DoB)?*

1. Professional Statement of compliance with the ECCCNYS as part of the Plan/Work Application (Form PW1, item 10). The form is signed and sealed by a licensed professional (architect or engineer).
2. Energy Analysis: COMcheck or Energy Model Report. This should be part of the drawing set/package for the initial filing.
3. Supporting Documentation: lighting layouts with fixture type designations, and specification information on lighting fixtures, wattages, and controls.

Q5: *What lighting code submittals are required for Residential Buildings in NYC?*

There are no lighting requirements for residential buildings under three stories in height. Lighting is not a component of REScheck software. For high-rise residential, COMcheck should be used for the general building spaces, but dwelling units are currently exempt.

Q6: *What if I do not comply with the new legislation?*

The current legislation does not stipulate the consequence of non-compliance, but we do suspect DOB would impose some sort of financial penalty.

Q7: *What is an ASHRAE Level 2 Energy Audit?*

This approach requires more effort in the building survey and energy analysis by including system performance testing. This method provides a breakdown of how energy is used in the building, as well as a broader range of savings options, including simple capital investments. This procedure also explores maintenance procedures and assesses probable saving measures.

WHY ADDRESS THIS LEGISLATION NOW?

Commercial building owners in NYC should quickly recognize the value of energy efficiency upgrades, with key marketing benefits going to the more aggressive early movers.

Benchmarking:

For most commercial buildings, the first benchmarking submission will be in 2011. The information for the submission uses data from the prior year of 2010. Therefore, there is no time like the present to start benchmarking now. It basically involves research and gathering the energy consumption from the utility bills (electric, gas, fuel oil, steam, water, etc.) and inputting this information into EPA's Portfolio Manager.

E&Z can help kick-start the benchmarking process by preparing and developing the appropriate data gathering spreadsheets for building owners. We would propose to gather and update this information on a quarterly basis. When this process is complete, we would input this information into EPA's Portfolio Manager. After the benchmarking is completed for the first year, the building will have the ability use this information as a baseline to complete their in-house benchmarking moving forward.

Energy Audits & Retro-Commissioning:

For most commercial buildings, the first energy audits will be in 2013, but we feel that there is no reason for building owners to wait that long to start this process. Keep in mind that NYSERDA has a Technical Assistance Program where a building owner can be reimbursed up to 50% of the soft-cost engineering fees. It is our opinion that this NYSERDA program will be eliminated by 2013.

After benchmarking is complete, the figures and information will need to be analyzed. E&Z can provide the Energy Audit and Retro-Commissioning for the Base Building Systems, which will enable building owners to:

1. Understand and interpret the utility bills.
2. Find potential permanent reduction in energy use and operating costs.
3. Determine annual energy savings, the cost to implement, and simple payback.
4. Determine design improvements. It is our understanding that there is a \$16 million revolving loan fund created with federal stimulus money that would help support a first round of retrofits. This would be on a first-come first-serve basis.
5. Determine operational improvements, training and documentation.

Lighting & Sub-Metering:

Commercial building owners do not have to fully complete until 2025. But this legislation accounts for both base building and tenant spaces. Therefore, a game plan should be established sooner than later.

E&Z can survey a building and prepare a due diligence report of the existing lighting and sub-metering throughout a building. This report would include the existing conditions assessment for both the physical conditions of equipment and how it relates to the NYCECC. We will also provide recommended upgrades, both immediate and long-term, on how to comply with NYCECC by 2025. We would also provide estimated design and construction costs for these upgrades, as well as the payback.

ADDITIONAL INFORMATION

Report by Evan Mills, “Building Commissioning: A Golden Opportunity for Reducing Energy Costs and Greenhouse-Gas Emissions”

This report provides the world’s largest database of commissioning case studies for new and existing buildings. The report has analyzed data on 643 buildings, representing 99 million square feet of floor space, from 26 states, and incorporates the work of 37 commissioning providers. The intent of this report was to respond to a widely held concern that end-users do not have confidence in the nature and level of energy savings that can be achieved through the commissioning process. But the results demonstrate that commissioning is arguable the single most cost effective strategy for reducing energy, costs and greenhouse-gas emissions in buildings today. The key findings of this report are outlined below.

1. Median Commissioning Costs: \$0.30/sf - existing buildings; \$1.16/sf - new buildings.
2. Median Whole-Building Energy Savings: 16% - existing buildings; 13% - new buildings.
3. Median Payback Times: 1.1 years – existing buildings; 4.2 years – new buildings.
4. Cash-on-Cash Returns: 91% - existing buildings; 23% - new buildings.
5. Very considerable reductions in greenhouse-gas emissions were achieved.
6. High-tech buildings are particularly cost-effective, and saved large amounts of energy and emissions due to their energy-intensiveness.
7. Projects employing a comprehensive approach to commissioning attained nearly twice the overall median level of savings, and 5-times the savings of projects with a constrained approach.
8. Non-energy benefits are extensive and often offset part or all of the commissioning cost.
9. Limited multi-year post-commissioning data indicate that savings often persist for a period of at least 5 years.
10. Uniformly applying the Median Whole-Building Energy Savings value to the stock of US non-residential buildings yields an energy savings potential of \$30 billion by the year 2030, and annual greenhouse-gas emissions reduction of about 340 megatons of CO₂ each year. An industry equipped to deliver these benefits would have a sales volume of \$4 billion per year, and support approximately 24,000 jobs.