



LOCAL LAW 87: ENERGY AUDITS & RETRO-COMMISSIONING

Version 9: March 2015

GREENER, GREATER BUILDINGS PLAN

Four laws created to improve the energy and water efficiency of New York City's largest buildings.



Local Law 84
Benchmarking

Local Law 85
NYC Energy Conservation Code

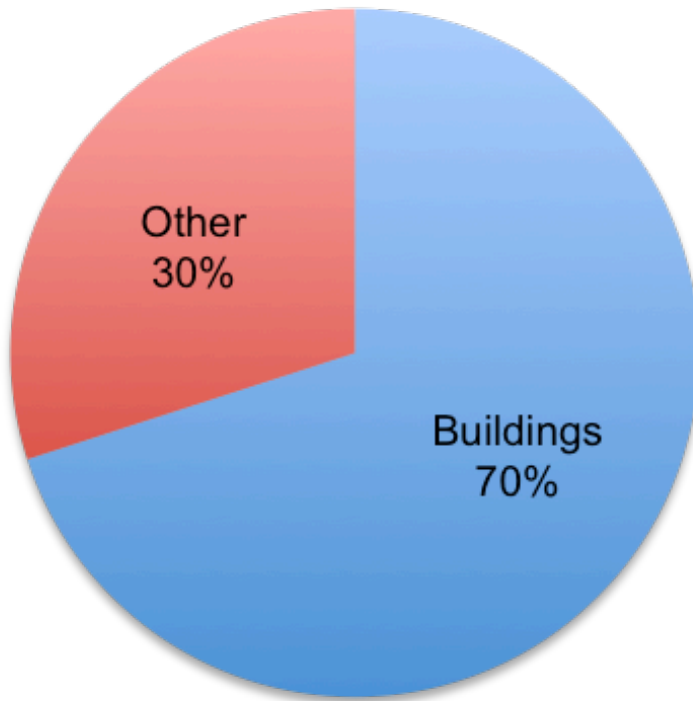
Local Law 87
Energy Audits & Retro-Commissioning

Local Law 88
Lighting Upgrades & Sub-metering

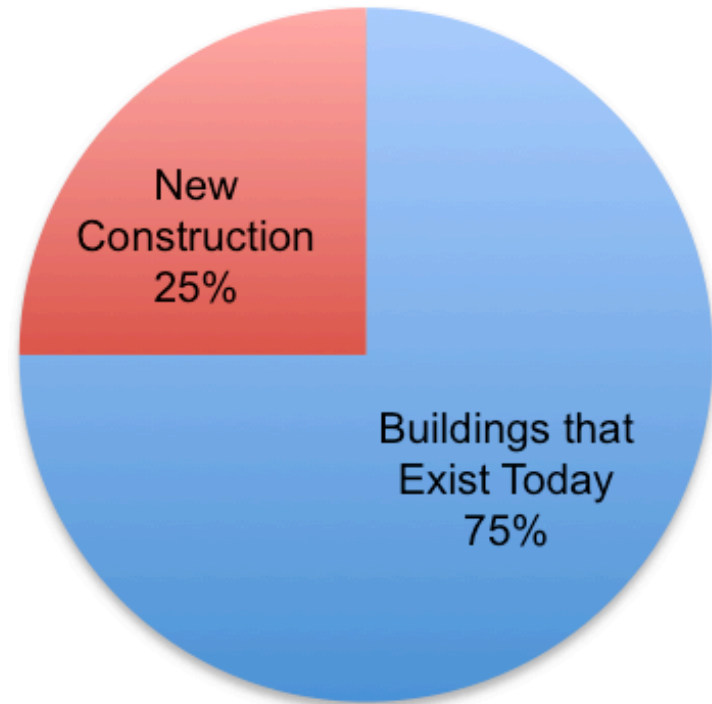
See <http://nyc.gov/ggbp> for more info

WHY TARGET EXISTING BUILDINGS?

**NYC Greenhouse Gas
Emission Sources**



NYC Buildings in 2030



WHAT IS LOCAL LAW 87?

LOCAL LAWS
OF
THE CITY OF NEW YORK
FOR THE YEAR 2009

No. 87

Introduced by Council Member Gennaro, the Speaker (Council Member Quinn), Brewer, Comrie, Dickens, Garodnick, Gioia, James, Koppell, Lappin, Mitchell, Palma, Recchia Jr., Reyna, Rivera, Stewart, Liu, Yassky, Sears, White Jr., Mendez, de Blasio, Mark-Viverito, Vann, Avella, Vacca, Gerson, Jackson, Gonzalez, Ferreras, Vallone Jr., Barron, Arroyo, Crowley and Mealy

A LOCAL LAW

To amend the New York city charter and the administrative code of the city of New York, in relation to requiring energy audits and retro-commissioning of base building systems of certain buildings and retro-fitting of certain city-owned buildings.

Be it enacted by the Council as follows:

Section 1. Chapter 3 of title 28 of the administrative code of the city of New York is amended by adding a new article 308 to read as follows:

ARTICLE 308
ENERGY AUDITS AND RETRO-COMMISSIONING OF BASE BUILDING SYSTEMS

§28-308.1 Definitions. As used in this article, the following terms shall have the following meanings:

BASE BUILDING SYSTEMS. The systems or subsystems of a building that use energy and/or impact energy consumption including:

1. The building envelope.
2. The HVAC (heating ventilating and air conditioning) systems.
3. Conveying systems.

Local Law 87 requires buildings to conduct energy audits and retro-commissioning every 10 years.

The combined reports which must be filed are called **Energy Efficiency Reports (EER)**.

WHAT IS LOCAL LAW 87?

The EER forms must be submitted via email to LL87@buildings.nyc.gov by December 31st of the building's filing year:

- **EERC1: Professional Certification: Energy Auditor and Owner Statements and Energy Audit Reporting Tool**
- **EERC2: Professional Certification: Retro-Commissioning Agent and Owner Statements, Retro-Commissioning Tool**

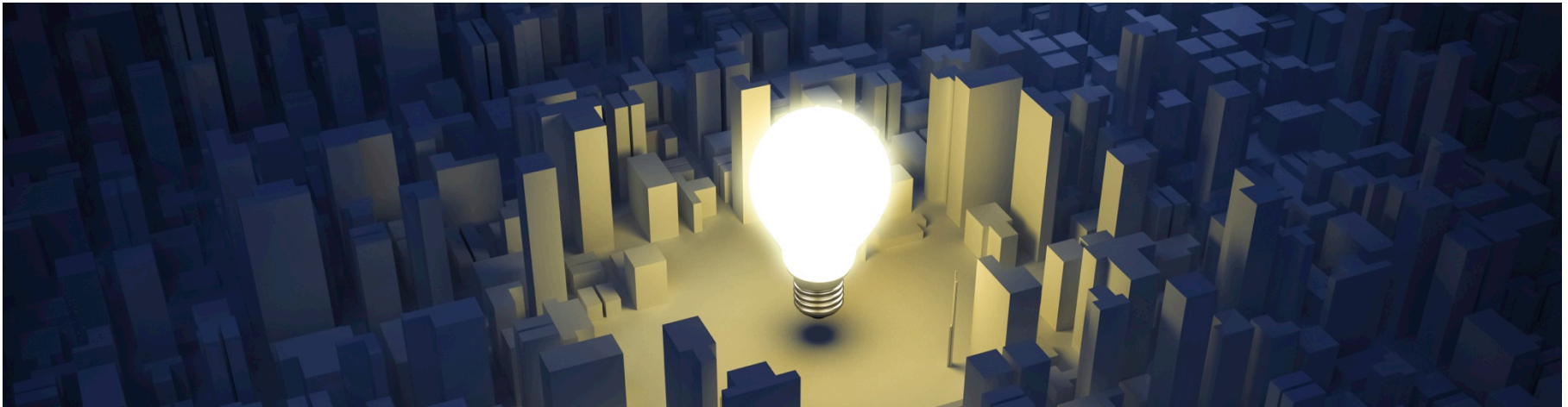
Payment must be mailed to the DOB.

No Forms will be evaluated until payment is received by the DOB. Filing forms without payment does not constitute being in compliance.

ENERGY AUDITS AND RETRO-COMMISSIONING

Energy audits and retro-commissioning are complimentary activities:

- Energy audits focus on new and better equipment / systems a building could invest in.
- Retro-commissioning focuses on fixing equipment / systems a building already has in place.



ENERGY AUDIT

An energy audit is an analysis of a building's energy equipment, systems, envelope, and operations, that:

- Identifies cost effective options to save energy
- Recommends energy saving strategies
(including cost estimates and payback)

An energy audit focuses on what equipment/systems a building should consider acquiring. The recommendations often include new, better, smarter equipment that would require a capital investment.

Local Law 87 DOES NOT require property owners to implement the recommendations.

RETRO-COMMISSIONING

Retro-commissioning is the testing and re-tuning of systems in an existing building to improve energy efficiency, for example:

- Checking HVAC controls
- Calibrating lighting sensors
- Ensuring pipe insulation

Retro-commissioning focuses on equipment / systems that a building already has. The focus is fixing what exists.

Local Law 87 DOES require property owners to correct problems found during retro-commissioning.

REQUIREMENTS

All “base building” energy systems are covered in the Energy Audit and Retro-Commissioning, including:

- HVAC (Heating, Ventilation and Air Conditioning)
- Electrical and Lighting
- Domestic Hot Water
- Building Envelope
- Conveying Systems

Exclusions:

- Tenant Systems
- Tenant Equipment



ENFORCEMENT

NYC Department of Buildings is responsible for enforcing compliance.

Failure to comply with LL87 subjects properties to fines of \$3,000 the first year and \$5,000 for each additional year.

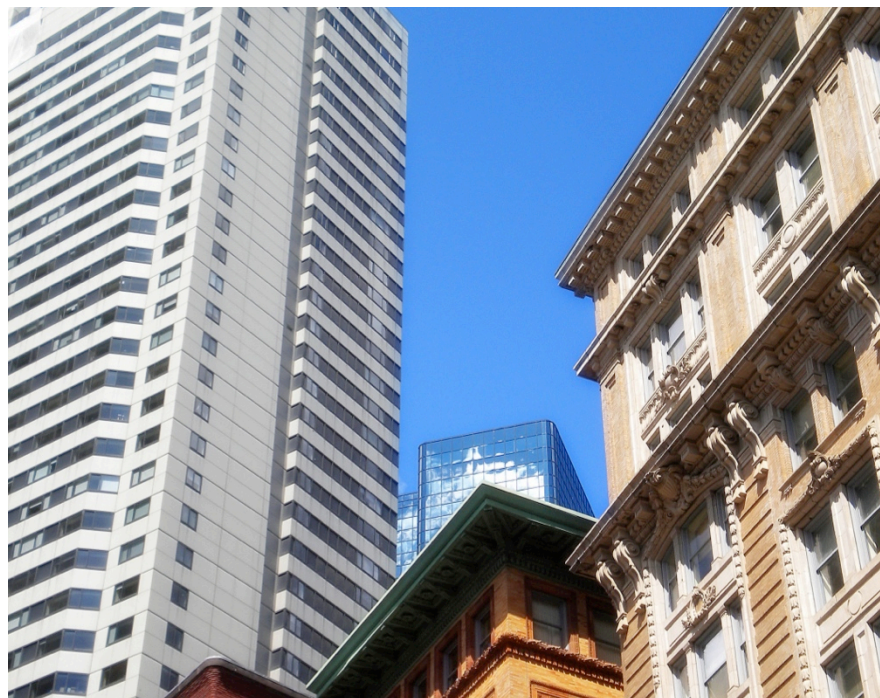
DOB conducts random reviews of documentation.



GETTING STARTED

Step 1: Determine if your property is subject to the energy audits and retro-commissioning law.

- A single building on a lot over 50,000 gross square feet
- 2 or more buildings on the same tax lot that together are more than 100,000 gross square feet
- 2 or more buildings held in condo ownership that together are more than gross 100,000 square feet.



Visit http://www.nyc.gov/html/gbee/html/plan/ll87_covered_buildings_list.shtml for a list of buildings covered by the laws.

GETTING STARTED

Step 2: Determine your property's reporting year.

Year first EER is due	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Last digit of tax block number	4	5	6	7	8	9	0	1	2	3

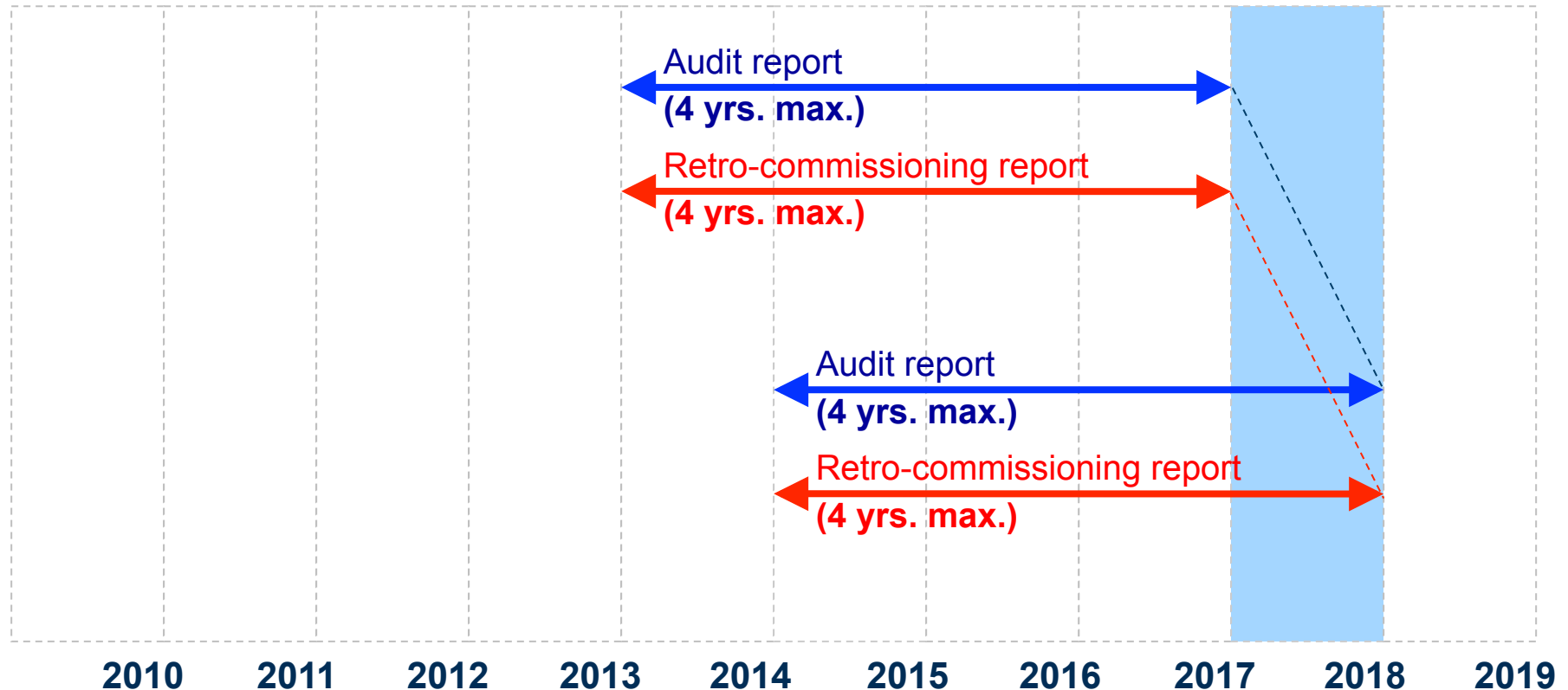
Every 10 years, owners must complete an energy audit, retro-commission their buildings, and file an Energy Efficiency Report.

Staggered deadlines are based on the last digit of a building's tax block number.

GETTING STARTED

Step 2: Determine your property's reporting year.

Standard Compliance Timeline: 2017 EER – Filing Block #7



GETTING STARTED

Step 3: Determine if your property is EXEMPT from the ENTIRE LAW (both energy audit and retro-commissioning).

Exemption from the entire Energy Efficiency Report (EER):

Building owners do not have to conduct an energy audit or retro-commissioning, or file the EER, if the building is classified as Class 1 pursuant to subdivision 1802 of the real property tax law of the state of New York.

This includes 1, 2, or 3 family dwellings that are not condominiums or 1, 2, or 3 family condos of 3 stories or less. The status should be indicated on your tax bill from the Department of Finance

GETTING STARTED

Step 3: Determine if your property is **EXEMPT** from performing **RETRO-COMMISSIONING**.

Building owners do not have to conduct retro-commissioning if the building has **received LEED Certification within 2 years prior** to the filing of the building's EER AND has earned both:

- the LEED point for Existing Building Commissioning investigation and analysis, AND
- the LEED point for Existing Building Commissioning implementation



GETTING STARTED

Step 3: Determine if your property is **EXEMPT** from conducting an **ENERGY AUDIT**.

Building owners do not have to have an energy audit conducted if:

- The building has received an EPA Energy Star label for at least *2 of the 3 years preceding* the filing of the building's Energy Efficiency Report
- The building has received LEED Certification within 4 years prior to the filing of the building's EER
- The building is a **SIMPLE BUILDING** (lacks central AC or has a system that cools less than 10% indoor area) and has implemented 6 of the 7 energy and water efficiency elements written in the law (certified by an RDP) *Note: This is an alternate compliance path that is only available for first reporting year.*

GETTING STARTED

Step 3: Determine if your property qualifies for a DEFERRAL of filing an Energy Efficiency Report

Owners can **defer** filing an EER until the next filing year (10 years) if:

- The building is less than 10 years old on their due date, and/or
- The building has substantially changed its base building systems within 10 years of their due date
- The building can demonstrate that it meets the energy code that was in effect for new buildings constructed on or after July 1, 2010 **OR** the energy code that was in effect at the time the building was built/altered, whichever is later

GETTING STARTED

Step 3: Determine if your property qualifies for an EXTENSION of time to comply with the law.

Time extensions are available if:

- Building is unable to complete the energy audit and retro-commissioning prior to the report due date despite good faith efforts. For example: If Superstorm Sandy wiped out base building systems and the building is unable to complete LL87 work. A building can only be granted two one-year extensions for good faith efforts.
- Building is suffering from financial hardship as defined by LL87

Note: Request for extension must be filed by October 1 of the year the Energy Efficiency Report is due

GETTING STARTED

“Financial Hardship” as defined in LL87, includes property that:

- Has property taxes in arrears within 2 years prior to filing of EER on the DOF’s annual New York City tax lien sale list
- Is exempt from real property taxes pursuant to sections 420-a, 420-b, 446 or 462 of the real property tax law
- Has outstanding balances under the Department of Housing Preservation and Development’s Emergency Repair Program that resulted in the property’s inclusion, within 2 years prior to filing of EER, on the DOF’s annual New York city tax lien sale list
- Has an active or effective commitment letter from a governmental agency that provides for the financing of the rehabilitation, within a period of 5 years or less, for the purposes of affordable housing for low or moderate income families

DOING THE WORK

Step 4: Select your Greener, Greater Buildings Plan administrator (“GGBP Project Manager”), the person in your management team structure responsible for managing compliance with the law.

Options include:

- A property manager, superintendent, or operator knowledgeable about building operations
- A property manager, superintendent, or operator who you send to training
- Consultant Owner’s Representative



DOING THE WORK

Step 5: Decide whether to complete your energy audit at the same time as retro-commissioning.

Advantages to doing both at same time may include:

- Saving staff time
- Qualifying for bundling discounts from consultants
- Ensuring capital projects are necessary
- Clarifying the scope of required retro-commissioning



DOING THE WORK

Step 6: Search for and select a qualified energy auditor.

The auditor CANNOT be a member of the building staff. The auditor must be a licensed architect or professional engineer OR be a registered as an energy auditor with DOB (as one of the following):

- NYSERDA approved Flex-Tech contractor (not the only option, but a good starting point)
- Certified Energy Manager (CEM)
- Certified Energy Auditor (CEA)
- High Performance Building Design Professional
- Building Energy Assessment Professional
- For audits of multi-family buildings only, a BPI Multi-family Building Analyst (MFBA)

If the auditor is not registered with the DOB as an energy auditor (one of list above), then an individual under the auditor's direct supervision must be.

DOING THE WORK

Step 6: Search for and select a qualified energy auditor.

Choose a vendor who has done energy audits in buildings of similar size and type to yours.

Your contract should include a requirement that the report provide information on available financial incentives for each energy conservation measure recommended.

Consider NYSERDA FlexTech and Multifamily Performance Program vendors.

DOING THE WORK: ENERGY AUDIT

Step 7: Begin your energy audit at least 12 months before it is due.

Audit must be equivalent to ASHRAE Level II, 2011 (minimum) including:

- Interviews with operating personnel
- Reviews of utility bills and other operating data
- Detailed analysis of energy consumption for each base building system

GETTING VALUE

Get the most out of the energy audit by reviewing the Energy Audit Report with the auditor. Discuss options and make an action plan, focusing on:

- What is immediately feasible (low cost)
- What improvements could be made in the next capital planning cycle or refinancing cycle
- Compare energy audit and retro-commissioning recommendations, and if possible combine with projects towards compliance with other legislation

DOING THE WORK: RETRO-COMMISSIONING

Step 8: Search for and select a qualified retro-commissioning agent.

The agent CANNOT be a member of the building staff.

The agent performing or supervising the retro-commissioning must be either: an architect, engineer, Certified Refrigerating System Operating Engineer or Licensed High Pressure Boiler Operating Engineer OR be a certified commissioning professional who is also registered with the DOB (one of these):

- Certified Commissioning Professional (CCP)
- Certified Building Commissioning Professional (CBCP)
- Existing Building Commissioning Professional (EBCP)
- Commissioning Process Management Professional (CPMP)
- Accredited Commissioning Process Authority Professional (ACPAP)

If the agent is not a registered, certified commissioning professional (one of list above), then an individual under the agent's direct supervision must be.

DOING THE WORK: RETRO-COMMISSIONING

Step 8: Search for and select a qualified retro-commissioning agent.

Few firms have experience retro-commissioning for LL87.

- Choose a vendor who has done retro-commissioning in buildings of similar size and type to yours
- Consider NYSERDA FlexTech and Multifamily Performance Program vendors

DOING THE WORK: RETRO-COMMISSIONING

Step 9: Begin your retro-commissioning at least 6-15 months before it is due. Not allowing enough time for retro-commissioning is one of the most common mistakes reported by the DOB.

Retro-commissioning takes longer than energy audits, because:

- Retro-commissioning must be performed in heating and cooling seasons to properly test
- Buildings are required to correct any deficiencies / noncompliant issues prior to submitting the Energy Efficiency Report (Note: Specific exceptions are listed in the Rule)

DOING THE WORK: RETRO-COMMISSIONING

Your building must comply with the list of 28 building operation measures specified in the law. The Rule provides sample rates for each required measure, as well as thresholds for what types of equipment are subject to retro-commissioning.

Basic steps for the retro-commissioning process are:

1. Assess building's intended use and expected operating parameters
2. Test building systems and verify performance of all building equipment
3. Document a corrective action response for all systems and equipment that deviated from expected performance parameters
4. Update the building operating plan and/or systems narrative as required

GETTING VALUE

Make the most of retro-commissioning by hiring an experienced retro-commissioning agent.

Review the report to ensure all 28 building operation measures were covered thoroughly.

Keep building superintendent or operator involved. Retro-commissioning agent may make simple repairs during retro-commissioning, but building staff (or maintenance contract workers) will make most of the repairs based on the report.

Document findings and create an operations manual for future reference.

DOING THE WORK

Step 10: Submit your Energy Efficiency Report and pay the filing fee by the end of the reporting year.

The report will consist of the following, as applicable:

1. DOB Energy Audit Form and Prof. Certification form for Auditors
2. DOB Retro-Commissioning Form & Prof. Certification Form for Retro-Commissioning Agent
3. Or, proof that your property is exempted, or qualifies for an exception or deferral from one or both reports

No forms will be reviewed by DOB before payment is received. Submission of paperwork without payment does not qualify as being in compliance with the law.

Initial Filing	\$375
Extension Report	\$155
Amendment	\$145

DOING THE WORK

Before submitting your energy audit and retro-commissioning reports, check with your agent for common mistakes.

Energy Audit

- Inconsistent unit conversions
- Incomplete building description
- Implementation costs that are too high or too low
- Over or under-estimated projected savings
- Missed opportunities

Retro-Commissioning

- Citing estimated costs in place of actual cost of implementation
- Missing testing
- Missing sample rates tested
- Missing master list of findings
- Over or under-estimated projected savings

DOING THE WORK

Maintain records for 11 years from the required submission date.





CONGRATULATIONS!
YOU COMPLIED WITH
LOCAL LAW 87!

GETTING VALUE

Invest in staff training.

- **GPRO:** Green Professional Building Skills Training, Operations & Maintenance Essentials – gpro.org
Additional offering: GPRO Post-Training Coaching
- **BPI:** Building Performance Institute – bpi.org
Association for Energy Affordability Inc. (aeany.org) and Solar One (solar1.org) offer BPI training in NYC
- **BOC:** Building Operator Certificate – CUNY Building Performance Laboratory (www.cunybpl.org)

Training operators and managers is a cost-effective way to expand best practices – teaching green practices and giving staff a common language to achieve efficiency improvements.



GETTING VALUE

Contact NYSERDA for resources and support.

NYSERDA's network of partners offering energy efficiency solutions include:

- FlexTech Consultants
- Multifamily Performance Partners
- Lighting, HVAC, and Motors Business Partners

Visit: <http://www.nyserda.ny.gov/Contractors/Find-a-Contractor>

For support to make energy efficiency improvements, install clean power generation, and demonstrate new technology in NYS buildings, visit:

<http://www.nyserda.ny.gov/Business-and-Industry>

<http://www.nyserda.ny.gov/Business-and-Industry/Housing-and-Development>

GETTING VALUE

Contact information to reach someone at NYSERDA:

Commercial and Industrial

Outreach@nyserda.ny.gov

866-774-8818

Multifamily

Anthony Sellers

Anthony.sellers@nyserda.ny.gov

212-971-5342 ext. 3614

GETTING VALUE

Contact Con Edison for resources and support.

Commercial and Industrial

Amelia Axtell

Lockheed Martin/Con Ed Commercial and Industrial

amelia.l.axtell@lmco.com

646-574-0095

Multifamily

Martha Sickles

Association for Energy Affordability

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