

building the future

Energy efficient buildings are central to New York City's climate policy goals. With knowledge and technology available today, we can start making buildings healthier, more comfortable, and dramatically more efficient.

the old way

Many New York City buildings suffer from an array of problems that negatively impact energy efficiency and increase emissions, including:

- On-site fossil fuel (natural gas and oil) combustion, resulting in harmful greenhouse gas emissions and pollution
- Inefficient, outdated, and oversized equipment
- Underutilized rooftops
- Costly system maintenance
- Uncomfortable and unhealthy occupant spaces

the path forward

Buildings designed for an energy efficient future provide many benefits to owners and occupants alike, including:

- Renewable, clean energy
- Predictable and responsive equipment and systems
- Enhanced resilience in the face of extreme weather events
- Reduced utility and maintenance expenses
- Quiet and comfortable occupant spaces
- Healthy indoor air

tools to get there

This future is achievable, and within sight. Long-term capital planning, strategic upgrade approaches, financial programs, and sophisticated building management tools will help building decision makers get the most out of future building improvements.

Long-term Capital Planning

Long-term capital planning can help decision makers anticipate future building improvements and align financing for a holistic response that increases lifecycle savings, improves building performance, and reduces disruption to tenants. When a major piece of equipment fails, having a replacement plan ready to implement will maximize return on investment and energy savings. A building's long-term capital plan should include:

- Lifecycle analysis that considers the operation, maintenance, and replacement costs of equipment and other building assets
- Scope and cost of future improvements or equipment replacements and the sequence in which these upgrades will be carried out
- List of funding from various sources
- Projected return on investment as well as future operating and maintenance costs
- Anticipated changes to local building code and other energy- or building-related mandates

Commissioning

Commissioning is a process that ensures the optimal performance of building systems, beginning in the design phase and continuing through construction, occupancy, and on-going building operation. It can also be applied to existing buildings to address problems that have developed over time. The commissioning process:

- Dramatically improves energy efficiency and building performance
- Minimizes operations and maintenance costs
- Provides a benchmark for baseline building energy use

Operations and Maintenance

Investing in operations and maintenance best practices ensures that building systems run optimally, enabling proper performance in existing equipment and maximizing return on investment in new systems. Operations and maintenance staff trained in best practices will:

- Perform continuous commissioning and equipment optimization
- Maintain a long-term plan and anticipate problems before they occur
- Know when to engage qualified contractors for assistance
- Stay up to date on the latest operations and maintenance best practices

Property Assessed Clean Energy (PACE) Financing

As part of the Climate Mobilization Act, New York City created a PACE financing program to help building decision makers implement energy efficiency upgrades to their buildings. PACE financing differs from conventional financing mechanisms in that it:

- Is tied to properties rather than property owners
- Transfers with the property at the time of sale
- Allows building decision makers to complete energy efficiency upgrades that may otherwise not be financially feasible

Building Management Systems (BMS)

One of the best ways to optimize energy use is through using a computer-based BMS. A BMS automates the operation of a building's mechanical and electrical equipment such as heating, cooling, and ventilation systems, as well as lighting, elevators, and alarms. These systems provide consolidated data that can be used to:

- Improve understanding of system performance and reporting
- Prioritize energy upgrades based on cost-effectiveness and impact
- Monitor energy consumption and proper system functioning