

Piecing together a fresh start—and a model for energy-efficient housing



The MacDougal Street Apartments, Brooklyn, NY

About Multifamily Energy Performance Portfolio (MEPP)

NYSERDA offers a portfolio of programs and incentives for owners, facility managers, developers, and condo/co-op boards of multifamily buildings with five or more units in New York State. NYSERDA's programs make it easier to assess, fund, implement, and measure energy efficiency upgrades that improve building performance and save money.

Concern for Independent Living, Inc.'s apartment building at 330 MacDougal Street in central Brooklyn is much more than a place to call home. For its residents—some 65 individuals coming out of psychiatric care centers or homelessness—it's a new beginning. For the greater community, it's a glimpse into the future of sustainable design.

The first supportive housing project in New York State to utilize modular construction, **The MacDougal Street Apartments were fabricated along off-site assembly lines to incorporate a variety of energy-saving**

features. The individual units—or modules—were later stacked together to create what is now a landmark of energy efficiency.

The complex boasts a high-efficiency heating system, more than 100 solar photovoltaic (PV) panels, energy-efficient appliances and lighting, a state-of-the-art gearless elevator, and a modern heat recovery ventilation system. **These features helped the building to earn the ENERGY STAR® designation** and were made possible in part by the Multifamily Performance Program administered by the New York State Energy Research and Development Authority (NYSERDA), along with the project's Multifamily Performance Program Partner, the Association for Energy Affordability, Inc. (AEA).

The MacDougal Street Apartments are not only a haven for those who need it most. With 26 percent projected annual energy savings compared to similar buildings built with conventional construction methods and materials, **they are a model for supportive housing development,** showing how making energy-conscious decisions from the start can have positive payback.



Partnering for a special purpose

Concern for Independent Living, Inc. (Concern) had a mission when they set out to develop The MacDougal Street Apartments: provide affordable housing to help individuals get back on their feet. In choosing the Association for Energy Affordability, Inc. (AEA) as its Multifamily Performance Partner, the nonprofit supportive housing provider found an equally passionate ally with deep experience delivering energy efficiency solutions to similar organizations. AEA worked with Concern’s management and development team—a team that grew to include Jim Mutton, Director of NYC Operations—throughout the entire process to ensure the building’s 65 studio apartments and 20 shared spaces were modeled and tested to achieve a minimum of 20 percent energy savings. This savings threshold was the target goal of NYSERDA’s Multifamily Performance Program at the time of this build.

Modular precision yields powerful results

While the foundation was constructed at 330 MacDougal Street, each module was built along off-site assembly lines at the Brooklyn Navy Yard to ensure high quality and uniform results. The factory-controlled process is what makes modular construction a faster, greener way to build—there are fewer site disturbances and less construction waste. After electrical, sprinkler, HVAC, and plumbing installations were added, every module was completed with energy-efficient lighting fixtures, low-flow devices, ENERGY STAR® fiberglass windows, and exterior air barrier and wall insulation.

The modules were then transported, stacked, and secured to the building facade in just a matter of days. Final energy-efficient measures included the installation of ENERGY STAR clothes washers and refrigerators, four high-efficiency condensing heating boilers, a gearless elevator that uses only 40 percent of the energy of a traditional elevator, and 120 solar PV panels that today cover the electricity consumption of all common area lighting. Incentives totaling \$115,294 from NYSERDA helped make the project a reality.

An energy-saver to be proud of

AEA staff conducted inspections and blower door tests in pre-installed controlled conditions and again at the completed building site. Their diligence paid off, as The MacDougal Street Apartments exceeded program goals and achieved a projected 26 percent annual energy savings. For residents who call 330 MacDougal Street home—and for the greater community—it’s a space to feel good about.

Background & Challenges

- Build an affordable supportive housing residence for individuals coming from psychiatric care settings or homelessness.
- Achieve a minimum of 20 percent energy savings relative to a similar building built according to ASHRAE 90.1-2004 standards.

Solution

- Four condensing heating boilers and one condensing DHW boiler.
- ENERGY STAR clothes washers, refrigerators, air conditioners, windows, and lighting fixtures.
- Low-flow devices in kitchens and bathrooms.
- Increased insulation.
- Gearless elevator.
- Heat recovery ventilation system.
- 120 solar PV panels.

Benefits

- Modular construction facilitated speed, efficiency, and quality control.
- NYSERDA’s Multifamily Performance Program incentives covered a significant portion of the costs of energy efficiency measures.
- Building owners and tenants save a projected \$36,743 per year.
- The MacDougal Street Apartments earned the ENERGY STAR Multifamily High-Rise status.

Owner	Concern for Independent Living, Inc.
Number of Units	65
Project Financials	
Estimated Incremental Costs of Energy Efficiency Measures	\$501,186
MPP Incentive Funds	\$115,294
Projected Annual Cost Savings (\$)	\$36,743
Projected Annual Cost Savings (%)	26%
Simple Payback	13.6 years
Savings to Investment Ratio	1.15

“ *Helping people was always our number one priority with this project. Including energy efficiency was an added bonus. Now we have a building our community can be proud of—one that has a positive impact on our tenants and the environment alike.* ”

—Jim Mutton, Director of NYC Operations at Concern for Independent Living, Inc.

Opportunity’s knocking! Call 1-866-NYSERDA or visit nyserdera.ny.gov/multifamily



Green Jobs – Green New York (GJGNY)

Green Jobs – Green New York (GJGNY) provides funding for energy assessments, low-cost financing for energy upgrades, and technical and financial support to develop a clean energy workforce. GJGNY is a statewide effort to strengthen communities through energy efficiency and uses constituency-based organizations to support program outreach in underserved communities. GJGNY enables New Yorkers to make a significant difference in homes, businesses, and neighborhoods—making them more comfortable, more sustainable, and more economically sound. GJGNY is administered by NYSERDA and made available by the Green Jobs – Green New York Act of 2009.

About NYSERDA

NYSERDA offers objective information and analysis, innovative programs, technical expertise, and funding to help New Yorkers increase energy efficiency, save money, use renewable energy, and reduce reliance on fossil fuels. NYSERDA professionals work to protect the environment and create clean-energy jobs. A public benefit corporation, NYSERDA has been advancing innovative energy solutions since 1975.

