A South Bronx apartment building has gotten an energy retrofit. Daniella Zalcman for The Wall Street Journal

At first glance, the most notable thing about a cream-colored rooftop box at a Bronx housing project might be the incredible view it commands of Yankee Stadium. But the real significance of the metal box will be in helping to produce clean energy at significantly reduced cost.

Older, multiunit apartment buildings are among the city's worst polluters. Building administrators hope the $1.5 million energy overhaul of the Urban Horizons building on East 168th Street can be a model for other large, low-income or rent-controlled complexes, both for the energy-saving retrofit and for the project's creative financing.
"If a nonprofit in the South Bronx can do it, others can do it, too," says Rebecca Eigenbauer, the director of housing development for WHEDco, the nonprofit that owns and runs Urban Horizons.

The local ZIP Code, 10452, ranks among the city's poorest. The average tenant is a family of three with an income of $29,000 who pays $567 in monthly rent, Ms. Eigenbauer says.

Apartments range from studios to three-bedrooms. The complex houses a Head Start preschool, a health clinic and a commercial kitchen where catering entrepreneurs can rent space.

The Bronx building started as the municipal Morrisania Hospital in the 1920s, but was abandoned in 1976. WHEDco opened the 132-unit low-income apartment complex in 1998 after a $23 million overhaul.
The building formerly was Morrisania Hospital. Daniella Zalcman for The Wall Street Journal

Nancy Biberman, WHEDco's president, said finances—more than environmental concerns—initially drove their decisions. Within a few years of opening, Urban Horizons administrators realized that their predictions about energy use, based on federal guidelines, were well below reality. Utility costs ran more than a third over budget.

"We would have gone bankrupt," Ms. Biberman says.

City rent regulations allow the landlord to pass the cost of major capital improvements on to tenants, but as a nonprofit, Ms. Eigenbauer says that wasn't an option for WHEDco. Instead, WHEDco conducted an energy audit and crafted a plan that touched every floor in the building.

A grant from the Deutsche Bank Americas Foundation for $25,000 a year for three years, plus a $50,000 loan, paid for feasibility studies and the creation of a building-wide energy plan, Ms. Eigenbauer says. Tenants received new refrigerators and toilets and upgraded ventilation systems. The commercial kitchen was rewired, and pipes were sealed throughout the building.
Both electrical power and heating or cooling come from the rooftop box, known as a CHP unit for "combined heat and power."

Urban Horizons system uses natural gas to create energy to light the common areas, with the leftover energy powering the boilers. The CHP unit is set to go online as soon as Con Edison and the Department of Building give their approvals.

The CHP system cost $430,000, but Ms. Biberman expects to see $89,000 in savings during the first full year of operation compared with the previous system that used natural gas to feed the boilers and drew power from the electrical grid. The other measures have resulted in a 28% reduction in utility costs already, with a total estimated savings of $164,448 annually for the entire retrofit. Since the first energy-saving measures were instituted, tenants' electric bills have dropped 6% from 2008 to 2010, even as residential bills rose an average of 8% citywide during that time.

Energy retrofitting and other green projects are more common with commercial, industrial and higher-income properties "where there are more resources to pay for it," says Denise Scott, managing director of LISC New York City, which helps community organizers revitalize impoverished neighborhoods and which has worked with Urban Horizons. "But the fact that there's more of a focus on lower-income properties makes this unique and vitally important," she says.

LISC has worked with 95 other buildings, with more than 2,200 apartments, on energy retrofits since late 2010, in Harlem, Washington Heights, Bedford-Stuyvesant, Brownsville, East New York and other areas. Most have been weatherization projects, with a few boilers swapped out.
Dayle Zatlin, a spokeswoman for the New York state Energy Research and Development Authority, which gave Urban Horizons $190,000 for energy-efficient projects, says requests to her agency for similar grants rose from 10,000 in 2011 to more than 15,000 in 2012, and requests this January from affordable-housing units have more than doubled over a year earlier.

The Urban Horizon residents aren't the only beneficiaries. City buildings, especially large apartment buildings, account for more pollution than the city's vehicular traffic, according to a 2011 report released by Manhattan Borough President Scott M. Stringer.

At Urban Horizons, Ms. Biberman's team anticipates that the new system will be almost twice as efficient at reducing polluting CO2 emissions compared with the previous system.

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