

PARTY WALLS

"ONE MAN'S CEILING
IS ANOTHER MAN'S FLOOR"

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A bimonthly update on Steven Winter Associates, Inc.'s work in the realm of multifamily housing

Ribbon Cutting Unveils the Second ENERGY STAR Multifamily High-rise in the Country

On October 9, a ribbon cutting for the second ENERGY STAR® multifamily high-rise building in the country was celebrated at Myrtle Avenue Apartments in Bedford-Stuyvesant, Brooklyn. The project was a joint venture between **Dunn Development Corp.**, a socially-conscious real estate developer specializing in affordable and supportive housing and the **Northeast Brooklyn Housing Development Corp.**, an organization committed to the preservation, development and management of affordable rental housing in central Brooklyn. On hand for the dedication was a wide range of local politicians and industry players including Marty Markowitz, Brooklyn Borough President and Deborah VanAmerongen, Commissioner of the NYS Division of Housing and Community Renewal (DHCR). Capital funding for the 33-unit building was provided by the **NYS DHCR**, **The Richman Group**, the **NYS Housing Trust Fund** and **Citibank and Community Preservation Corporation**. The **New York State Energy Research and Development Authority (NYSERDA)** provided additional hard and soft cost funding to improve the energy performance of the building in accordance with the requirements of the NYSERDA Multifamily Performance Program (MPP). The recently launched NYSERDA MPP is being looked at by other states as a model for encouraging high performance in the traditionally overlooked multifamily sector.



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As a result of their openness to new building technologies and skills as a developer in implementing new ideas, Dunn Development has now been responsible for both the first (www.swinter.com/PartyWalls/PWOctober06.pdf) and second Energy Star rated high rise multifamily buildings in the country through the NYSERDA MPP. On both of these projects, Steven Winter Associates (SWA) has worked with Dunn Development to evaluate a package of Energy Conservation Measures (ECMs) to reduce whole building energy use by 20% compared to a "baseline" ASHRAE 90.1-2004 compliant building.

As a result of this process, the following ECM's were implemented at Myrtle Avenue Apartments:

- Roof insulation: 6" poly-isocyanurate
- Wall insulation: 1" mineral wool between steel studs and CMU block; R-13 fiberglass batts in steel stud cavities.
- Windows: Low-e argon with thermally broken aluminum frames
- Foundation insulation: 1 3/8" (R-8) dense fiberglass board installed on exterior of foundation wall.
- Heating and DHW: Lochinvar sealed combustion 87% efficient gas boilers with indirect storage tanks for DHW. Low flow faucet aerators.
- Ventilation: Central exhaust ventilation system with ALDES Constant Air Regulator (CAR) Dampers at each floor to achieve 25 CFM exhaust ventilation in kitchens and 30 CFM in bathrooms.
- Apartment Lighting: Linear fluorescent or compact fluorescent fixtures in kitchen, bath, foyer, living rooms and bedrooms.
- Stairwell Lighting Controls: Occupancy sensor bi-level stairwell fixtures with dimmable ballasts to reduce lighting when these spaces are not occupied.
- Corridor Lighting Controls: Occupancy sensors to turn non-emergency overhead fixtures OFF when these spaces are not occupied.
- Appliances: Energy Star refrigerators and clothes washers.

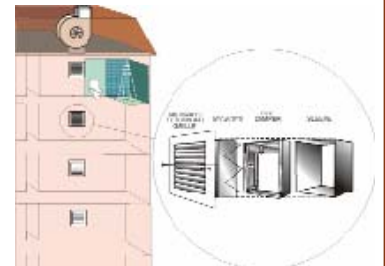


Ted Leopkey, Program Analyst for the EPA, with the ENERGY STAR plaque

Fixing Multifamily Ventilation Systems

Central exhaust ventilation systems are one of the biggest drivers of energy and indoor air quality performance in multifamily buildings. Despite the critical nature of these systems, the vast majority do not work as designed in either existing buildings or new construction. As a rule, upper floor apartments (closer to the fan) are over-ventilated, lower floor apartments are under-ventilated and poorly sealed ventilation ductwork can result in roof fans exhausting as much air from building cavities as they draw from the bathrooms and kitchens that actually require ventilation! With funding from the **New York Energy Research and Development Authority**, SWA is halfway through a project to demonstrate a fix for these systems that incorporates the **Carrier AEROSEAL** process to seal ventilation shafts and the **American ALDES'** Constant Air Regulator Dampers (CAR) to balance exhaust ventilation flows from floor to floor.

AEROSEAL works by sealing holes from the inside with a polymer based sealing agent that is injected into duct systems after exhaust grilles at each floor are removed and duct openings are temporarily blocked with friction fit foam blocks. The sealing agent does not coat the ducts, remains rubbery over time and can seal holes up to 3/8". CAR dampers are used to regulate airflow at each exhaust grille location. A silicon bladder mechanism expands as the pressure drop across the damper increases, which results in a constant airflow rate over a wide range of conditions. With existing buildings CAR dampers can be installed immediately after AEROSEALING, minimizing apartment access requirements.



Central Exhaust Ventilation System

To date, SWA has worked closely with **Dunn Development**, **Phipps Houses** and the **Women's Housing and Economic Development Corporation** to evaluate the costs and benefits of this approach in four NYC buildings (three existing, one new construction). As a result of our work with these early adopter building owners, SWA has developed and fine tuned a strategy to coordinate and implement AEROSEALING and CAR dampers to improve the energy and indoor air quality performance of multifamily buildings.



CAR damper installation with exhaust grille removed
Echo Apartments (Phipps Houses)

Results indicate that the AEROSEALING can reduce ventilation shaft leakage by 90% and that CAR dampers can be used to "dial in" exhaust airflows at each floor to precisely meet code requirements. Moreover, the two technologies complement each other since sealing duct leaks increases suction at the bottom of the shafts, allowing CAR dampers to better regulate airflow. SWA is still quantifying the energy savings benefits associated with shaft duct sealing and eliminating over-ventilation; however initial results indicate that simple paybacks of well under five years can be expected. While the economic benefits may be attractive to building owners, residents also benefit from a ventilation system that actually works.



AEROSEAL System at MLK Apartments (Dunn Development)

For more information on this project, contact Marc Zuluaga, marcz@swinter.com.