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WinterGreen is a monthly publication from **Steven Winter Associates** designed to keep you updated on the latest news and information regarding energy efficiency, sustainability, and high performance buildings.

VENTILATION IN MF BUILDINGS



Why Ventilate?

Nearly all buildings require mechanical ventilation and fans to effectively exhaust pollutants generated from bathrooms, kitchens, and material off-gassing. At the same time, pulling in and filtering outside air reduces

contaminates and allergens in homes, which can improve occupant health and comfort by limiting exposure to mold and moisture. However, many systems are noteworthy for rampant inefficiencies in their operation resulting in sub-optimal performance. We'll explore the economics of full cleaning, sealing, and balancing systems, and alternate low-cost solutions. Continue to the [Party Walls blog](#) for in-depth analysis of three air-flow measurement tools and various duct sealing methods.

Economics of Whole Building Exhaust Ventilation

The economics of ventilation retrofits are not always straightforward and are best approached conservatively. Estimated ventilation retrofit costs for the New York market range from \$350-\$700 per register for materials and labor, with larger and more complicated buildings representing the higher-end. Getting to high performance can mean a substantial investment for some systems, and justifying the retrofit on the basis of energy savings alone will probably work only in significantly over-ventilated buildings in cold climates with expensive fuel.

Low-cost Alternatives

While a full cleaning, sealing, and balancing approach may be beyond a project's budget, there are less expensive options. Short of a full retrofit, there are three things that every auditor should consider:

1. Target poor connections and faulty workmanship from past repairs
2. Seal every crack or gap in the system, especially the final connection between register boot and apartment drywall.
3. Reassess the size of fans and consider replacing the fans if they are oversized for current needs.

Read more on [Party Walls](#).

**UNIQUE NGBS
CERTIFICATION**


Home Innovation Research Labs' National Green Building Standard™ (NGBS) goes beyond the norm by offering certification paths for new land development and remodeling projects. Here's a closer look at these unique verification options.

Reinforcing a core benefit of NGBS certification, the land development option emphasizes flexibility and inclusiveness to accommodate a broad spectrum of applications. Regardless of size or location, all land is eligible for NGBS certification as long as it includes parcels marked for residential or mixed use construction. Certification can take place incrementally for larger developments with longer build-out plans, or cumulatively when the project concludes and all NGBS green practices are incorporated into the development.

NGBS Green Home Remodeling system offers builders and consumers an affordable process to green existing residences. The rating system offers two options for certification: a whole-home remodel and a small-project remodel. To meet mandatory minimum performance standards for a whole-home remodel, projects must demonstrate a 15% reduction in energy consumption and a 20% reduction in water consumption. Applicable on kitchens, bathrooms, basements, and additions (under 400 sq. ft.), the small project remodel requires a single inspection upon project completion.

Encouraging innovation and growth of the rating system, Home Innovation Research Labs recently created a new designation to recognize green building professionals who have demonstrated advanced knowledge and extensive experience as National Green Building Standard™ (NGBS) Verifiers. Having certified over 1,470 units of multifamily space using the NGBS system, Karla Butterfield, SWA Senior Sustainability Specialist, is among the industry's first to receive the title of NGBS Green Master Verifier™.

For more information on NGBS, contact Karla Butterfield at kbutterfield@swinter.com.

**'PUREBLUE' NET
ZERO-ENERGY
HOME**

Brookfield Residential set out to design a model house for the firm's Avendale community in Bristow, VA, that was a cut above their standard production models. What they created, dubbed "PureBlue" by the Brookfield team, artfully melds sustainability with a classic aesthetic into one of the most energy-efficient homes in the Washington, DC area.

By employing 6 ½" SIP wall panels, triple-pane windows, and an ERV, the PureBlue home cuts heating and cooling loads in half compared to its neighbors. To achieve net-positive energy, the home's roof-mounted 10-kilowatt photovoltaic (PV) system will generate enough onsite electricity to cover operational needs and sell back excess to the local utility company. Water efficiency is addressed by collecting, filtering, and storing greywater from sinks and showers in a 500-gallon cistern piped for drip irrigation. According to an estimate by SWA Senior Building Systems Engineer Elliot Seibert, Avendale homes constructed using PureBlue's energy conservation measures will save residents around \$2,100 in gas and electric bills compared to standard-performance neighborhood homes of similar size (4,100 ft²).

Working with Mark Leahy of Pinnacle Design in Fairfax, SWA helped the team select a cost-effective balance between efficiency measures and solar panels to meet their net-zero goal. The Washington Post offers a [detailed profile](#) on the PureBlue home that examines how architecture interacts with innovative energy conservation measures.



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