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WINTERGREEN

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.

THE FUTURE OF ACCESSIBLE HOUSING

This April marks the 47th anniversary of President Lyndon B. Johnson signing the Fair Housing Act into law, making it illegal to discriminate in the sale or rental of housing, among other transactions, based on race, religion, color, sex, and national origin. However, it wasn't until 20 years later (1988) that the FHA was amended to include protections for people with disabilities, which instituted a host of accessibility regulations that are still the standard for multifamily housing design today.

April is Fair Housing Month

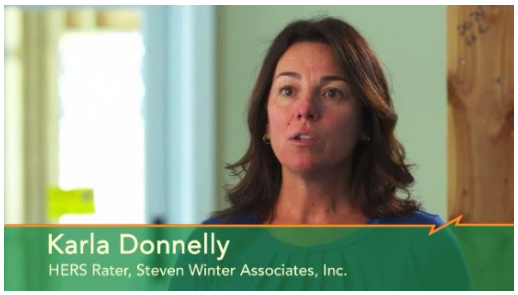
As our country and politics evolve, the face of accessible housing is likely to progress as more initiatives emerge that challenge us to look beyond current standards into federal laws and building codes. The Visitability Movement, for example, led by Eleanor Smith, champions a modest level of accessibility for single family homes, which currently are not required by federal law to meet any level of accessibility (see SWA staff present with Ms. Smith at the 2015 AIA National Convention).

To promote principals of Universal Design, SWA has been compiling an accessible product directory (forthcoming release) that features a wide range of sleek and modern products that enhance accessibility without compromising style. We've also been on the cusp of ventures that address health and wellness through design, such as the WELL Building Standard, which promotes accessibility as a main component of a building occupant's health and wellbeing.

SWA will certainly celebrate this Fair Housing Month and all the progress made towards housing that is inclusive to all; however, we would be remiss if we didn't think about what's in store for accessible design in the future.

SWA PROJECTS HONORD IN CT ZERO ENERGY CHALLENGE

The fifth annual CT Zero Energy Challenge featured 11 new homes from across the state exemplifying high-efficiency design. Participants competed to design and construct residences that best utilized innovative building techniques and new technology intended to lower energy use to near - or net-zero. Steven Winter Associates, Inc. (SWA) provided sustainability consulting services for four of the 11 projects entered into this year's challenge, including the first- and third-place winners.



Karla Donnelly—SWA Senior Sustainability Consultant

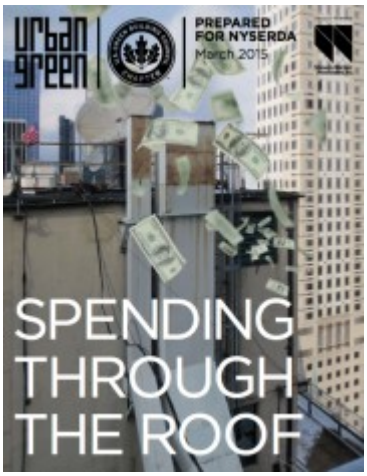
The Benker Residence, a four-bedroom home in South Glastonbury constructed by Glastonbury Housesmith, was selected as the CT Zero Energy Challenge Overall Winner. SWA provided certification support in the ENERGY STAR®, LEED® for Homes™ and National Green Building Standard™ (NGBS) programs. Innovative energy conservation measures include a solar tracking PV array, geothermal heating and cooling system, and a sealed thermal envelope that tested less than 0.06 ACH50. Get an inside look at the home that achieved a -23 HERS Index rating in this feature video: http://blog.swinter.com/?p=632

The third-place challenge winner is the Taft School's new faculty residence on its Watertown campus. The home was designed by Trillium Architects, and constructed by BPC Green Builders, with certification support for Passive House US™, LEED for Homes, Living Building Challenge™, and ENERGY STAR v3.1 provided by SWA. The residential project achieved a final HERS Index of -14 after activating the 13kW roof-mounted PV system, relying on double stud cellulose-filled walls plus insulated ZIPS™ sheathing and triple-pane windows as primary efficiency measures. Take a virtual tour of this near-zero winner here: http://blog.swinter.com/?p=632

Steven Winter Associates, Inc.

SPENDING THROUGH THE ROOF: IDENTIFY, CALCULATE, IMPLEMENT

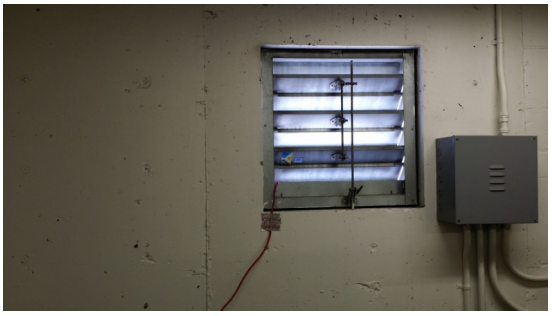
It's a building science blunder, magnified to New York proportions. Spending Through the Roof, a NYSERDA-sponsored report released by Urban Green Council and based on a Steven Winter Associates research study, examines the costly phenomenon of heated air escaping inextricably through elevator shafts in New York high-rise buildings. Is your building type an ideal candidate for retrofit? How significant are the potential cost savings? What measures are necessary to fix the problem?



Simple fix; significant savings

First, to determine the viability of a retrofit, figure out how your building matches up according to these five criteria:

1. Is it 20 stories or more? Tall buildings lose more heat, as stack effect is greater in taller buildings.
2. How exposed is the building? High exposure to wind loading results in greater heat loss.
3. Are vents large or small? The free vent area of existing vents is an indicator of heat loss.
4. Constructed before or after the year 2000? Roof-level infiltration tends to be greater in post-millennium buildings where airtight, curtain wall-style building envelopes are common.
5. Duration and intensity of heating season? Buildings experiencing more Heating Degree Days (HDD) and enduring colder outdoor temperatures will experience greater heat loss as warm air naturally displaces with cooler air.



Improperly sealed elevator shaft vent

A simple, step-by-step guide to assessing your building using these five characteristics is located on pages 11-13 of the Spending Through the Roof report. Enter the results of your assessment into the dynamic form on page 14 to calculate estimated cost and energy savings.

Elevator shafts? We've got that covered. There are two retrofit options to reduce air loss through elevator shafts.

Option 1 entails covering 2/3 of the total code-required vent area with annealed glass. This solution is applicable to smaller, less sophisticated buildings, heated by natural gas or oil. Cost range: $500-$2000 per building.

Option 2 entails installing a mechanical damper to fully close the vent opening. This solution is applicable to taller, more sophisticated and better sealed buildings, heated electrically or by district steam. Cost range: $5,000-$15,000 per building.

Apartment building owners spend an average $3,400 each year to heat air that escapes through the roof. For taller buildings this number can balloon to $20,000. If simple repairs were performed on 4,000 tall apartment buildings in NYC, it would cut greenhouse gases by 30,000 metric tons and save over $11 million every year.

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