

doing more by using less



Virginia Tech says “greening” buildings not only helps the environment but could also generate millions of dollars in the long run

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by barbara l. micale

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When the National Governors Association (NGA) convened its Centennial Anniversary meeting in Philadelphia recently, energy was at the top of the agenda. Wise use of natural resources is something governors have been grappling with for the past 100 years. In fact, President Theodore Roosevelt hosted the first meeting of the nation’s governors at the White House in 1908 to discuss conserving America’s natural resources.

President Bill Clinton addressed the energy issue in his 44-minute keynote speech before the NGA and focused primarily on retrofitting buildings as a way of saving energy and creating new jobs.

What this means, Clinton explained, is that “every state government building, every local government building, every school, every college building, every hospital, every auditorium, and eventually every house in the country” can be retrofitted and “no money taken away from the taxpayers, the state budget, the local budget, the school budget, because



Virginia Tech President Charles Steger at the kickoff event in October 2007: “There are many old structures in greater Washington that are ready to be audited and retrofitted, but until now there has been very little incentive and few resources to drive change.”



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ASTRID RIECKEN / THE WASHINGTON TIMES

Laurel Colless, at home with her daughter, is director of the Energy Efficiency Partnership.

it is all going to be paid off by utility savings. And when they are paid off, the utility bill is lower, you've freed up funds for other things, you've created lots of jobs, and reduced the threat of global warming in a way that works.”

Virginia Tech has added the element of a top university with expertise in construction, engineering, and architecture to the Clinton-described formula and taken the lead in founding and facilitating a large-scale building retrofit program in the national capital region. Partnering with local city governments, urban developers, energy service companies, financial institutions, and civil groups, Virginia Tech launched the Energy Efficiency Partnership (EEP) of Greater Washington in October 2007.

“There was already high awareness of the advantages of retrofitting among local governments, but very little incentive and few funding resources to drive change,” said Laurel Colless, director of the Energy Efficiency Partnership. As senior project associate for research at Virginia Tech, National Capital Region, Colless is responsible for spearheading this effort at the university. “The Energy Efficiency Partnership of Greater Washington provides a bold impetus and clear blueprint for other regions to follow,” she said.

The timeliness of the partnership launch was verified, said Colless, when just two days earlier former Vice President Al Gore and the United Nations Intergovernmental Panel on Climate Change (IPCC), a body of world-renowned scientists, won the 2007 Nobel Peace Prize.

Virginia Tech decided to form the partnership based on emergence of climate change as a pressing theme in Washington, and because of the university's strong architecture program and its newly established School of Construction, said James Bohland, vice president and executive director of National Capital Region Operations. “As an unbiased facilitator, Virginia Tech is responsible for developing program momentum and governance,” said

Bohland. “We also have a long-term view towards replicating the model in other U.S. regions.”

Virginia Tech's core partners, energy efficiency financier Hannon Armstrong and Pepco Energy Services, reinforce the Clinton model. Hannon Armstrong has committed \$500 million to the initiative during the first five years to finance the retrofitting at no capital cost to building owners and county governments. The company will see a return on its investment over an eight- to ten-year period via the accrued electricity savings.

Pepco Energy Services is conducting energy audits, supplying materials, performing building retrofits and guaranteeing the energy savings of

the implemented retrofit projects. In addition, Pepco Energy Services is providing renewable energy options to interested parties.

“In getting the word out to building owners about our program, we emphasize over and over again that there is no green premium on efficiency,” said Colless. “Going green is not about going without. Investing in a green technology retrofit not only pays for itself, but it brings down operating costs and, ultimately, gives owners a financially better performing asset.”

“The definitive goal of our partnership is to educate right across the construction value chain with a view to more energy efficiency work being done. We offer people the tools and financing options if they need them but the bottom line is not that they work with us but that they do something. The worst case, environmentally and economically, is for building owners to do nothing,” said Colless.

When Colless meets with building owners about the importance of retrofitting their buildings, she uses a number of statistics to help prove her point. For example, the United States represents only 6.6 percent of the world's population, yet accounts for 25 percent of global energy; and the Washington, D.C., region alone produces approximately 65.6 million metric tons of CO₂ annually. This is more than all the emissions of Sweden, which has nearly twice the population of our region. And there is something else she asks them to consider—experts say just 25 percent of a city's carbon footprint comes out of auto tailpipes, while 40 percent comes from the energy used in buildings.

“Energy efficiency in today's built environment is not the same as conservation in the 1970s, where turning down the thermostat and wearing a sweater was the answer. This is about no longer wasting energy by maintaining old, inefficient systems,” said John Christmas, senior vice president of Hannon Armstrong. “Retro-

The momentum that's been generated by the partnership in just a few short months demonstrates what can happen when multi-sector entities combine their strengths to address the urgent issue of global warming.

—Virginia Tech President Charles Steger

fitted buildings not only reduce operating expenses immediately and are healthier and more comfortable to occupy, but they also denote the concrete shift towards a new low-carbon society, tantamount to addressing climate change.”

“The partnership has calculated that there is an estimated \$3.6 billion of annual energy savings potential available to tax payers and private building owners in the greater Washington D.C. region,” said David Weiss, president and chief operating officer of the Energy Services Division of Pepco Energy Services.

“We don't talk about polar bears and disappearing ice flows. We talk about the economic case for doing this, and it looks like we're reaching a tipping point here,” said Colless.

Georgetown Park mall is among the first buildings to undertake a retrofit using the full capabilities of the partnership. Others include Meridian House International, the Brookings Institution, and Quest Diagnostics.

Herb Miller is chairman of Western Development Corporation (owner of Georgetown Park mall) and vice chairman of The Chesapeake Crescent Initiative (a partnership between education, government, businesses, and investors to boost the region's economic vitality). “Energy efficiency is both a profitable business investment and a commitment to help save our world. The Chesapeake Crescent Initiative is dedicated to working with the Energy Efficiency Partnership and Virginia Tech to help our region save \$4 to \$5 billion annually in energy costs by providing a minimum of 20 percent energy efficiency in our commercial and governmental buildings,” said Miller. “As owner of Georgetown Park mall, our company is committed to providing our tenants and shoppers with a cleaner environment for shopping which will provide, we believe, better sales, store productivity, and lower energy rates for our retailers.”

Joan B. Kelsch, an environmental planner with Arlington County Government and coordinator of the County's green building programs, and Cliff Majersik, chair of the Cool Capital Challenge (uniting individuals, schools, congregations, businesses, governments, and other institutions to take a billion-pound bite out of the Capital Region's carbon dioxide emissions by April 2009), also support the retrofit program.

“Daylight and good ventilation result in greater productivity and lower absentee rates in office and industrial environments as well,” said Kelsch. “And studies show that school children in classrooms with abundant natural daylight and views of nature perform better in math and reading.”

According to Kelsch, who also serves as the chair of the Intergovernmental Green Building Group (IGBG) under the auspices of the Metropolitan Washington Council of Governments, Arlington County is performing lighting and energy efficiency retrofits in several public buildings to reduce energy costs and greenhouse gas emission.

“Developers are leading the charge to energy-efficient green buildings,” said Majersik. “It's long since expanded beyond early adopters and gotten to the point where LEED green building certification has become a standard amenity of class-A buildings. No one wants to be stuck with the last brown building built in D.C. In-

Georgetown Park will be among the first to undergo retrofitting.





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Joan Kelsch is an environmental planner with Arlington County Government and coordinator of the County's green building programs.

ing energy prices, tenant demand for green buildings, and rent and property value premiums for green are accelerating this trend."

According to Colless, tenant demand has become a driving force. Tenants are vocal about not wanting the stigma of working in a brown building. They also don't want to pay the higher rents that result from escalating energy costs.

Creating jobs is also a key component to going green in a declining economy. Urban advocates for civil rights and the end to poverty are being drawn into an environmental coalition for climate solutions by the promise of what they are calling "green-collar jobs"—weatherizing homes, improving the building stock, upgrading the care and sustainability of the urban landscape, and manufacturing clean energy products for growing global markets.

Bracken Hendricks, senior fellow with the Center for American Progress and author of *Apollo's Fire*, works on issues of climate change and energy independence, and says that predictions show that a shift to 25 percent renewable energy in the United States by the year 2025 could produce more than five million new jobs and create over \$700 billion in new economic activity. "The fastest growing sectors of the economy are dominated by clean technology. Some of the largest Initial Public Offerings of stock in recent years have been solar companies, and in states like

Pennsylvania, once the heart of manufacturing, workers are finding that new jobs are coming back, and entirely new industries are being created by forward-looking energy policies that create markets for renewable energy like wind and advanced clean technology," said Hendricks.

Anticipating a spike in demand for qualified green building laborers, engineers, operations, and maintenance managers, Virginia Tech is taking the lead here too. "We are meeting with top construction and engineering firms to find out how we can develop a curriculum that will meet their future needs," said Bohland. "And we want to reach out beyond our university, as well, to adapt and tailor a green curriculum that can be used in community colleges and vocational schools in the region. The university's educational expertise and outreach ability is what makes the Energy Efficiency Partnership so unique."

"Now that the pilot period is completed, the partnership is moving to the next phase," said Colless. "We are opening up to additional energy service companies, design-build firms, and energy efficiency financiers to help with our effort of retrofitting existing buildings with energy efficiency products designed to decrease energy use and significantly cut carbon emissions." **nvtc**

Readers can visit the Energy Efficiency Partnership Web site at <http://eep.ncr.vt.edu/>