

# THREE COMMUNITY COLLEGE CASE STUDIES



1

## The Green Center of Central Pennsylvania

By Joseph Wojtysiak, MSA, CFM, CEFP, and William J. Sutton II, LEED AP

In 2009, HACC, Central Pennsylvania's Community College, and GreenWorks Development formed a partnership to establish the Green Center of Central Pennsylvania. The mission of the center is to serve as the state's preeminent source for education, training and public information about green technologies and sustainable living. The Green Center is housed in the new LEED® Gold building named Campus Square (see photos). Campus Square is regarded as one of the more sustainable buildings to be constructed in the region. The 75,000 square foot building in Midtown Harrisburg has integrated over 30 green building aspects including a roof-mounted 42-kilowatt solar array and a 48-well geothermal HVAC system. The building was also constructed on a brownfield site that was a former gas station. Eleven underground storage tanks were removed and contaminated soils were remediated in order to clean up the area prior to construction.

Inside the Green Center, you will find a plethora of classrooms and training facilities for students of all ages to learn about green technologies. HACC invested nearly one million dollars into renewable energy training equipment. The equipment is made in the U.S. and was purchased from Hampden Engineering in Long Meadow, Massachusetts. The various pieces of equipment include: wind turbines,

solar photo-voltaic arrays, bio-diesel generator and an HVAC heat pump with integrated controls. The equipment is housed on mobile carts that can be used inside, outside, or taken on the road. HACC is planning to partner with the state of Pennsylvania to take the equipment to various locations including K-12 schools and trade expos to show the public the training equipment and educate them on renewable energy.

Also located at the Green Center is a living museum dedicated to teaching visitors about integrating sustainability into their every day lives. The following educational exhibits can be found there: recycling, eco-friendly building materials, water conservation, building weatherization, solar, and energy conservation. Local firms and corporations such as Gannett Fleming, Raudenbush Engineering, Tyco Electronics, and PPL Company (Utility) have partnered with the center as well. They utilize the center to educate their employees and their customers about sustainability and the work that they do every day to preserve resources. HACC has begun to offer credit and non-credit course work at the Green Center such as a 40- and 60-hour NABSEP (North American Board of Certified Energy Practitioners) approved Solar Training Course, an Energy Auditing Course and an EPA funded Environmental Workforce Development and Job Training



Program. HACC has already placed dozens of students with local firms working in these emerging fields.

Moving forward, HACC is introducing a specialized curriculum where the students will emerge with one of three green degrees in either: Renewable Energy, Green Building Management, or Sustainable Materials and Resource Management. HACC and the Green Center are also reaching out to other organizations internationally such as TAFE University (Sydney, Australia), is the NABCEP training provider for the Berks and Lancaster WIB (Workforce Investment Board), and is now approved as a training provider for Virginia which allows the State to send students to take NABCEP classes. HACC and the Green Center of Central

Pennsylvania plan to continue to grow and teach other colleges/universities how to start similar programs at their facilities and have a positive impact on the environment and their students.....

Joe Wojtysiak is senior director of facilities management at Harrisburg Area Community College, Harrisburg, PA; he can be reached at [jrwojtys@hacc.edu](mailto:jrwojtys@hacc.edu). William Sutton is project manager for Wohlsen Construction Company, located in Pennsylvania and Delaware, and board member, Green Building Association of Central Pennsylvania. His e-mail is [wsutton@wohlsen.com](mailto:wsutton@wohlsen.com); this is his first article for *Facilities Manager*. The authors wish to acknowledge the editorial assistance of Julia Knight and Cheryl Deitz.



## Green Efforts at Cleveland State Community College

By Tommy Wright

**C**leveland State Community College is an accredited public comprehensive community college committed to quality education and open access. The college operates within the governance of the Tennessee Board of Regents.

Situated in the scenic corridor of hills and valleys of Southeast Tennessee, Cleveland State presents an attractive atmosphere in which to enjoy varied facets of an educational experience. The community offers an abundance of service facilities and recreational opportunities. The college is located 30 miles northeast of Chattanooga.

Approximately 3,500 credit students and 1,500 non-credit students enroll in a typical fall semester. The credit student population is split about evenly in the choice of transfer or career-technical programs. The average age of all students is 28 years. All persons are welcome at Cleveland State and the student population is non-racially identifiable. There are over 200 employees at the college including more than 70 full-time faculty members.

The 105-acre campus has 10 major buildings housing modern classrooms, laboratories, and a student activity center. Additional features include an excellent library, a multi-media center of emphasis, computer laboratories, a 400-seat theatre, a 3,000-seat gymnasium, and athletic fields and tennis courts. Cleveland State offers classes throughout the five county service area.

Much like every other campus in North America, the budget challenges our campus has faced over the last few years has provided us with an opportunity to think creatively about how we can more efficiently serve the needs of our campus and community. Some examples are as follows.

### PRINTER PLAN

During the 2010-11 academic year, we realized that while employees had been enjoying having their own personal ink jet printers this was becoming costly and inefficient. So, after many cost comparisons and energy studies, we created group print stations and installed more efficient laser printers. As a result, we reduced our overall personal printers from 215 to 40.

### AUTO COMPUTER SHUT DOWN/RESTART

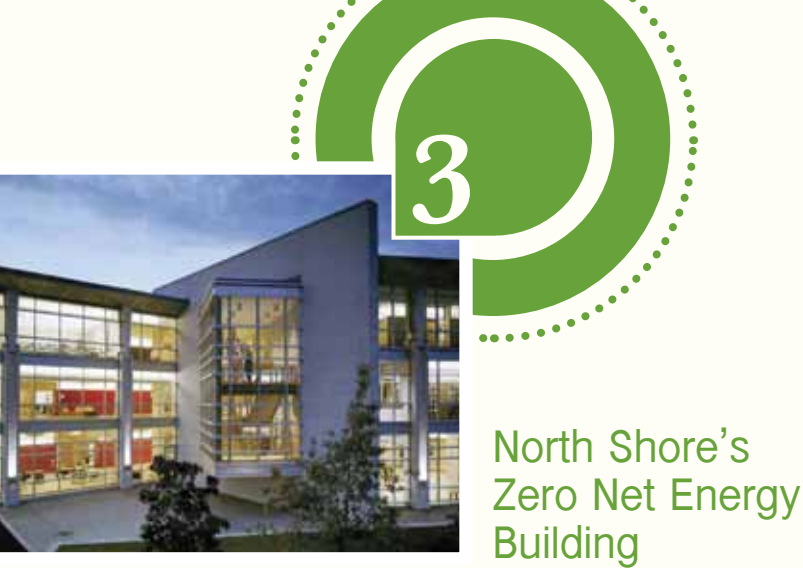
For many years we had asked that all computers be left on over night so that updates could be installed. However, we realized it was extremely inefficient to leave the 750 lab computers and the 215 faculty and staff computers running the whole night when updates only take about one hour. So, during the 2010-11 academic year, we purchased software that would allow us to designate the specific times to shut down and restart our computers. This simply change is estimated to save us roughly \$10,000 per year in energy savings.

### THE ENERGY CENTER

Through a partnership with our city and county government, the Appalachian Regional Commission, and the U.S. Department of Agriculture Rural Development, we broke ground in February 2011 on an Energy Center, which is an extension of our Business Incubator. This facility will house eight "green" businesses and become home for our alternative fuels academic program. The alternative fuels program plans to use campus-cooking oils to create bio fuel for college vehicles.

For more information about these projects or initiatives, contact the author at [twright04@clevelandstatecc.edu](mailto:twright04@clevelandstatecc.edu).

Dr. Tommy Wright is vice president of finance and administration at Cleveland State Community College, Cleveland, TN; he can be reached at [twright04@clevelandstatecc.edu](mailto:twright04@clevelandstatecc.edu). This is his first article for *Facilities Manager*.



## North Shore's Zero Net Energy Building

By Linda Brantley

**W**hen it opens in fall 2011, North Shore Community College's new Health Professions and Student Services building will be the first state-owned "zero net energy" building in Massachusetts and a prototype of green design that will be used to prepare students with cutting-edge skills for growing healthcare professions.

The \$32 million, 58,000 square foot, three-story project, located just north of Boston in Massachusetts, will save as much energy as it uses through geothermal heating and cooling, solar panels, and smart lighting controls. Zero net energy is a term used to describe a building that is optimally efficient, and over the course of a year, generates energy onsite, using clean renewable resources, in a quantity equal to or greater than the total amount of energy consumed onsite. The building will also meet the requirements of a LEED (Leadership in Energy & Environmental Design) Gold certified building.

The new building, which will also serve as a teaching tool for sustainability, has a green design that will feature LED lighting, Energy Star equipment and smart lighting and controls. The facility will utilize conservation technology and efficiency measures including photovoltaic energy production and the building will have a "green" roof covered in vegetation, "gray" water runoff recovery, and passive solar heating and shading.

Other integrated design components include a south-facing horizontal design, an enhanced building envelope including R-24 to R-30 walls and R-5 windows; chilled beams to provide air conditioning; LED occupancy sensors; solar sun shades and light shelves; and natural ventilation. The building will utilize onsite clean energy technologies, including a 50-well geothermal closed-loop system and 340 kW of solar panels on the roof and in the parking lot. Other "green" design features include a green roof, low-flow fixtures, permeable pavement, and native landscaping. The design, efficiencies, and technologies result in an energy demand of only 27 kBtu per square foot per year for the building—well below a comparable "average" building in this climate, which would require approximately 60 to 80 kBtu/year of energy per square foot.


With utility costs projected at zero, the new super-efficient Health and Student Services Building will: reduce annual grid electricity consumption by approximately 409,000 kWh annually, saving an estimated \$142,000 per year; save roughly \$3.5 million in avoided electricity bills over the next 20 years; and prevent approximately 4,000 metric tons of carbon emissions over the 20-year period (equivalent to eliminating 780 cars from Massachusetts roads or the electricity use of 500 homes).

The facility will enable the college to consolidate all its health programs, offer cutting-edge health and science education and complete its Danvers campus. It will include specially designed space to train students in health programs using the latest in state-of-the-art equipment and technology. Each health discipline will have its own dedicated practice lab and teaching space and will share hands-on simulation suites and control rooms. For instance, one model teaching aspect is there will be a Nurse/Allied Health Education Sim Lab where students will be able to perform on a "Sim patient" to train with nursing scenario software, and video the training activities. Faculty and students can then review the results and stream "best practices" to other students/classes. This cutting-edge equipment will allow the college to graduate exquisitely prepared students ready to fill real and growing demand for allied health positions.

Plans also include the creation of a high tech nursing reference library, anticipated to become a resource for North Shore health professionals. The new facility will also consolidate NSCC's Student Enrollment Services offices, which combined welcome an estimated 15,000 people every year.

At the October 29, 2009 groundbreaking, NSCC President Wayne M. Burton noted, "Today, we break ground on more than a building. We come together to witness the laying of the cornerstone of a new economic era based on the principles of sustainability and environmental stewardship."

Today President Burton says, "The college is pleased to be on the cutting edge of this movement in Massachusetts. It dovetails perfectly with our internal culture and commitment that North Shore Community College will create an environmentally sound, economically viable, and socially responsible future by advocating the study of sustainability and the application of green principles such as conservation, environmental justice, and green education in our college, communities, and individual lives.

"This core value has resulted in the comprehensive incorporation and integration of environmentally sound practices and programs across the college, from curriculum to energy saving measures, to this new construction. Everyone on the campus is eagerly awaiting the day that the building opens and the implementation of these principles begins in an entirely new way." 

Linda Brantley is director of public relations and new media at North Shore Community College, Danvers, MA; e-mail her at [lbrantle@northshore.edu](mailto:lbrantle@northshore.edu). This is her first article for *Facilities Manager*.