2008 Annual
Green Innovation Awards
Best Green Business Innovation

Virginia Tech

Energy Efficiency Partnership of Greater Washington

Partners:
Hannon Armstrong * Pepco Energy Services * VA Tech * Arlington County
Leo A Daly * GVA Advantis * JBG Companies * National Building Museum
Best Green Business Innovation
Virginia Tech
Energy Efficiency Partnership of Greater Washington

Goal:
• Reduce GHG emissions by 20% - 50% from existing buildings in greater DC Area
• Note: Existing Buildings account for almost 40% of GHG emissions

Concept:
• Businesses, banks, local governments, and energy services companies providing a model for self-funded projects

Education, Research and Outreach:
• Virginia Tech - Founding Partner and unbiased facilitator
• Outreach mechanism for Students, Civic Groups and Industry
Best Green Small Business
Blue Ridge Eco Shop

Healthier Living for You and the Planet
Paige and Hakon Mattson

One Stop “Green” Shopping-August 2007
Non-VOC paints, hemp bags, organic linens, sustainable furniture, solar attic fans, safe water and baby bottles, consumer education and more.
Best Green Small Business
Blue Ridge Eco Shop
Best Green Organization
Habitat for Humanity Virginia

Better by Design

EarthCraft Trainings to Date
Number of affiliates attended 24
Number of people attended 69

EarthCraft Construction to Date
Number of affiliates building EarthCraft 13
Number of homes completed or under construction 27
Number of homes to be monitored 8
The plan for the future is to gradually increase the number of Habitat homes built to EarthCraft standards over the next five years until 2012 when we expect to build 100% EarthCraft.
Best Green Designer
The Gaines Group, PLC

- Designed first LEED for Homes certified project in Southeast US
- First LEED for Homes high school student-built project in US
- Historic tax credit LEED for Homes project
- LEED ND, two LEED CS, LEED NC, and LEED for Homes projects in design phase
- EarthCraft projects
- Volunteer time
- Educate the public
Best Green Designer
The Gaines Group, PLC

The Gaines Group, PLC.
Designers of the
Hinge House

- LEED for Homes registered project built by CATEC high school students
- Gold Medal Winner at the 2008 Governor's Environmental Excellence Awards
- Citation Award Winner at the 2008 JRBC Go Green Awards

1006 East Market St. - Suite D | Charlottesville, Virginia | 434.979.5245 | WWW.THEGAINESGROUP.COM
Best Green Residential Project
decoMOD3

- A design / build / evaluate project at the University of Virginia School of Architecture
- Creating a series of ecological, modular, and affordable housing units
- Designed and built by interdisciplinary teams of students, working closely with faculty and outside experts
Best Green Residential Project
ecoMOD3

The SEAM house:
historic house and addition

Updates:
• Highly energy-efficient foam insulation
• Reconditioned historic wood flooring
• Evacuated tube solar hot water system
• Modular green roof system
• Modular bedroom addition
• Super insulated wall and roof panel construction
• Low impact materials
• Large deck with trellis/ shade device
• Rain garden/ courtyard space
• Full accessibility
• Goal: LEED Gold or Platinum for accessory unit
Honorable Mention Residential Project
Hill Studio
Madison Field

Site Design for Infill Development in Roanoke with EarthCraft houses:

• Rain gardens and swales
• Strategically placed trees
• Bat houses for mosquito control
• Optional 1000 gallon cistern that routes filtered rainwater to the shower
• Fresh air intake valves so the well-insulated homes can breathe
• Energy-efficient appliances, windows, and doors
Best Green Institutional Project
Longwood University
Health & Fitness Center

• LEED Gold
• Mechanical system and building envelope improvements to maximize energy efficiency
• Renewable energy
• CO2 monitoring
• Low-VOC materials
• IAQ testing for optimum indoor air quality
• Efficient plumbing fixtures to reduce water use
• Recycled and regionally manufactured materials to conserve resources
Best Green Institutional Project
Longwood University
Health & Fitness Center

longwood university
new health & fitness center farmville, virginia

The new LEED Gold Health & Fitness Center is intended to provide a green educational experience for the University's faculty, staff, and students. Featuring a contemporary take on the campus' traditional architecture, the building features a combination of brick and stone with a glass curtain wall and arched windows that reflect the building's fitness areas with daylight. Efforts to improve indoor air quality include using building materials to ensure no formaldehyde, VOCs, or other toxic chemicals are used in the facility's interior, and low-emitting materials were specified for all interior finishes and fixtures. The use of recycled building materials and the installation of a high-efficiency HVAC system contribute to the center's goal of being a sustainable facility.

indoor air quality
Low-emitting Materials
All paints, varnishes, paints, carpets, and composite wood materials contain no low amounts of volatile organic compounds (VOCs).
Carbon Dioxide Monitoring
CO₂ sensors help provide adequate ventilation.
Construction VOC Management
During construction, submittal materials were protected from moisture to prevent the growth of mold. Exterior walls were also protected to prevent concrete contamination.
Indoor Air Quality Testing
Prior to occupancy, IAQ testing was conducted to ensure good air quality.

sites & water
Site Location
The facility is located on a previously developed site that was once a parking lot.
Alternative Transportation
Pedestrian and bus stops are served by the Farmville Area Bus Route and VMI.
Heat Island Reduction
Sidewalks were constructed using light-colored concrete pavement.
Water Efficient Plumbing
A 40% reduction in water use is expected as a result of fixtures being water efficient, low-flow showers, and high-flow lavatories.

materials
Construction Waste Management
Over 90% of the waste generated during demolition of the existing gym was collected and transport of the facility was recycled rather than sent to a landfill.
Recycled Content Materials
Over 20% of the materials used to construct the facility, including steel, metal, and fiber, were made of recycled content.
Regionally Manufactured Materials
Over 20% of the raw materials and to optimize the facility were manufactured within 500 miles of the project site. All building materials, including drywall, were regionally extracted from nearby suppliers.
Forest Stewardship Council Certified Wood
All wood doors, sports flooring, and cabinets throughout the facility are FSC certified to ensure sustainably harvested.

energy
Energy Use Reduction
A 40% reduction in energy use was mandated for the center. LEED Gold Optimizes energy performance practices. Approximately 1% of the facility's energy is supplied by the University's central boiler plant, which is responsible for supplying the facility with renewable energy.
Energy Recovery
Efficiency wheels remove sensible and latent heat from the building and send it back into the building.
Enhanced Building Envelope
Heat-reflective clothing is installed throughout the building to reduce the amount of energy required to cool the building.
Demand-Controlled Ventilation
Carbon dioxide sensors have been installed in spaces with highly variable occupancy, such as gym and exercise rooms, to dump ventilation if necessary to maintain occupancy.
Honorable Mention Institutional Project
York County School Division

• Energy management program approach to reducing pollution and decreasing energy waste
• Energy saving and sustainable design strategies such as geothermal heating and cooling systems, heat wheel energy recovery systems, and occupancy sensors for classroom lighting. 5 ENERGY STAR buildings.
• Plan to educate employees, students, and the community by promoting environmental initiatives such as Earth Day and Energy Star’s Change a Light campaign
• Since 2004, energy consumption has been reduced by more than 17%: over $1,000,000 in total cost avoidance
Best Green Commercial Project
National Audio & Visual Conservation Project for the Library of Congress

Designed and built to preserve the world’s collection of motion picture and sound media

Sustainable elements of the project include:
- Re-use onsite of 50,000 cy of excavated rock
- Rainwater is controlled by natural vegetation and bio-swales
- 5.5 acres of Extensive and intensive green roof systems
- 45 acre site - largest private reforestation project on the east coast - planted 9,000+ trees
Best Green Commercial Project
National Audio & Visual Conservation Project for the Library of Congress

- Specialty air recirculation system in the blast proof nitrate vault areas - created benchmark for NFPA codes
- An extensive CO2 monitoring system
- Low or no VOC paints and adhesives
- Lots of natural daylighting from high bay curtainwall and skylights in the highly occupied office areas
- Water fountain and pond and multi-tiered terraces
Most Sustainable Community Program
Henrico County, Virginia

- County Manager’s charge to “change the energy culture in Henrico”
- 5 year energy improvement program is in its third successful year
- Program includes lighting retrofits, HVAC upgrades, building controls, and operational changes to reduce energy consumption
- Energy Program has saved over $1,700,000, obtained more than $60,000 in grants, and found oil tax dollars that were owed from more than 8 years ago
Most Sustainable Community Program
Henrico County, Virginia

- Videos have been made demonstrating how to conduct home energy audits

- Energy Fairs/Symposiums have reached in excess of 5,000 students and an additional 2,000 adults in the county

- 250,000 square foot high school and a 40,000 square foot library will be built to LEED standards

- Installed a photovoltaic array and complete weather station for educational purposes at Mills Godwin High School - linked to 6 middle and high schools
Special Recognition
for commitment to promoting sustainable building practices in Virginia
Eric Oliver, P.E., LEED AP

- VSBN Board Chairman for 4 years
- Professional Engineer
- Certified Energy Manager
- LEED Accredited Professional
- Certified Home Energy Rater
- Green Building Enthusiast!

EMO Energy Solutions
Energy Efficiency & Sustainable Design Consulting