National Sustainable Design Expo

featuring EPA's P³ Award

The National Sustainable Design Expo featuring EPA's P³ Award brings together students, nonprofit organizations, and government agencies that are working to create a sustainable future. The Expo is a unique opportunity to discover innovative, cutting-edge technologies, learn what nonprofit organizations and government agencies are doing to advance sustainability, and recruit potential hires with backgrounds in engineering, sciences, law, economics, and architecture. The Expo takes place each spring on the National Mall in Washington, DC, and is open to the public.

Targeting Sustainability

In a world with increasing trends in water and energy use, consumption of goods and finite resources, we need more creative ways of integrating environmental, economic and social goals. The task ahead is to design a sustainable future that mutually achieves environmental protection, prosperity, and improved quality of life through innovative science, technology and policy.

P³ (People, Prosperity and the Planet) National Student Design Competition

In 2004, EPA launched P³, a grant program aimed at fostering future generations of scientists, engineers, and decision makers to meet the challenges of sustainability through innovative solutions. Unique in the federal government, this program awards grants to teams of undergraduate and graduate students, along with their faculty advisors, to design and develop solutions to sustainability challenges. The P³ Competition consists of two phases. In Phase I, student teams compete for grants of $10,000 to research and develop their projects during the academic year. In Phase II, the P³ grantees are invited to Washington, D.C., to compete for the P³ Awards at the National Sustainable Design Expo. The awards provide an opportunity for funding to further develop and implement the award-winning technologies.

Fostering Partnerships

More than 40 partners from government, industry and nongovernmental organizations help implement the P³ competition. Many others are engaged as exhibitors, participants, and speakers at the Design Expo.

The Cloud Institute for Sustainability Education

EPA
United States
Environmental Protection
Agency

Agenda and Expo Location

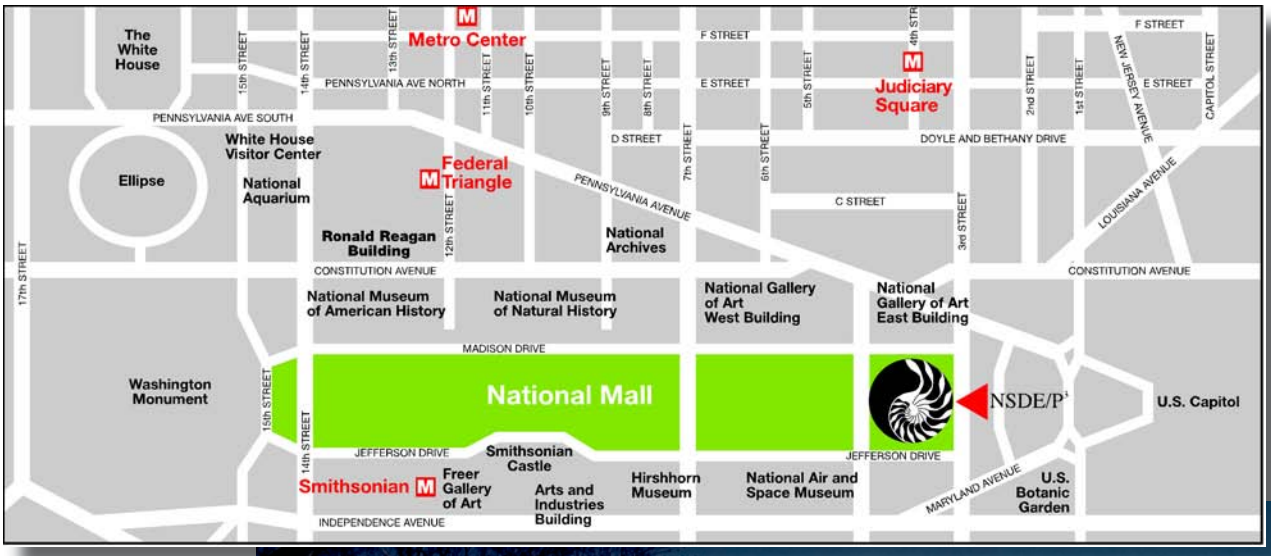
Tuesday, April 24, 2007

9:00 A.M. – 9:30 A.M. Welcoming Remarks

9:30 A.M. – 5:00 P.M. Exhibits and P^3 Team Projects Open to the Public

Wednesday, April 25, 2007

9:00 A.M. – 3:00 P.M. Exhibits and P^3 Team Projects Open to the Public



2007 National Sustainable Design Expo Co-sponsors

United States Environmental Protection Agency

As the world continues to change, EPA also continues to evolve. EPA Administrator Stephen L. Johnson has said, "EPA is at a crossroads. Over the Agency's 35 years, public perception of environmental stewardship has evolved from "let the government take care of it" into each individual's responsibility. EPA must now set this environmental agenda and highlight the mechanism to increase the public role in stewardship."

With an eye toward the future, EPA is continuing to build its capacity to anticipate and analyze trends that have implications for sustainability. An awareness of the environmental consequences of social, economic and technological changes is critical for making better-informed strategic decisions about the Agency's work in a rapidly changing world.

EPA has dozens of programs, policy tools and incentives that implement and encourage sustainability. The agency is working in many ways to help individuals and organizations blend these programs, improve industrial practices and assist states and local governments to manage their resources effectively.

The Cloud Institute for Sustainability Education

The mission of The Cloud Institute is to ensure the viability of sustainable communities by leveraging changes in K-12 school systems to prepare young people for the shift toward a sustainable future. We believe that K-12 education can substantially influence beliefs, attitudes, values and behaviors related to sustainability. This is the most fertile ground for helping to shape a society committed to sustainable development.

We are the premier organization that equips school systems K-12 and their communities with the core content, competencies and habits of mind that characterize education for a sustainable future. We do this by inspiring teachers and engaging students through meaningful content and student-centered instruction that inspires young people to think about the world, their relationships to it, and their ability to influence it in an entirely new way.

The Cloud Institute is proud to demonstrate new curriculum material developed especially for the National Sustainable Design Expo that uses classroom material, an on-site activity and the Expo exhibits to learn the principles behind life cycle analysis and how to evaluate the sustainability of a product or process.

P³ Teams for 2007 alphabetically by college/university

Project Title
Exhibit Location
Description

The Effectiveness of Energy Generating Exercise Equipment for Energy Conservation Education
C-18
Albion College students will create an energy education workout center where college students use exercise equipment to convert human energy into electricity that is stored for their own practical use. Participants will receive an energy audit of their living spaces, enabling them to make the pledge to use only as much electrical energy on the last day of a research period as they produced during that given research period.

The Affordable Bioshelters Project: Testing Technologies for Affordable Bioshelters
D-20
Appalachian State University students will design and build affordable greenhouses that are powered renewably to conserve energy and, therefore, reduce the demand for fossil fuels, and allow more food to be grown locally at lower economic and ecological cost.

Enhanced Sustainability through Straw-Bale Construction: Education-Research Building Demonstrating How to Live Sustainably in the Midwest
A-15
The **Ball State University** team is designing a straw-bale building as part of an integrated water-wastewater-energy-building-landscape-education system that demonstrates how to live sustainably in the Midwest. It is designed to be an immersion learning, research and demonstration project to promote sustainability and its public acceptance.

Production of Biodiesel from Algae applied to Agricultural Wastewater Treatment
D-7
California Polytechnic State University - San Luis Obispo students will grow algae from dairy wastewater in bench-scale bioreactors and determine algal lipid production rates. Results will be used to determine the feasibility of simultaneously producing biodiesel and managing nutrients from agricultural waste streams using high-rate algae wastewater treatment ponds.

GREEN KIT: A Modular, Variable Application System for Sustainable Cooling
A-12
The **California State Polytechnic University - Pomona** team will develop the "Green Kit" that can help individual homeowners achieve thermal comfort at lower costs than traditional heating and air conditioning systems. It will also aid local economies by reducing the competition for non-renewable fuels and help reduce global pollution.

Development Plan of a Sustainable Water Management Plan for a Rapidly Urbanizing Ghanaian Village
B-10
The **Columbia University/Barnard College/University of Texas at El Paso** team is developing a sustainable water management plan for Sakyikrom, Ghana, which currently has limited access to clean water and is expected to grow at an astounding rate with the construction of a new major highway through the community.

> *We have a responsibility to sustain - if not enhance - our natural environment and our nation's economy for future generations.*
>
> - Stephen L. Johnson, Administrator
> U.S. Environmental Protection Agency

AguaClara: Clean Water for Small Communities
C-1
The **Cornell University** AguaClara project is improving drinking water quality in the Global South through innovative research, knowledge transfer, open source engineering, and design of sustainable, replicable water treatment systems.

Performance of Solar Hot Water Collectors for Electricity Production and Climate Control
A-11
Cornell University students will evaluate solar thermal collectors and thermal storage systems that are commercially available for residential heat and electrical power systems. Data will be gathered to establish the criteria to compare solar thermal systems to traditional systems for residential heating, climate control, and electrical power generation.

TA Brown Mechanical Aerator
C-20
Duke University students are working with Serasih Indonesia to develop a prototype aerator from locally available materials that can be used by local aquaculture farmers to oxygenate their shrimp hatcheries and increase the economic yield of their harvests in and around Banda Aceh, Indonesia.

Deployable Homes Following Natural Disasters
C-13
Duke University students will assist Gulf Coast residents by identifying relevant sustainable technologies that show promise for improving the sustainability, durability, affordability, and accessibility of temporary housing.

Interactive Planning Tool for Sustainable Urban Planning in a Built, Urban Community
B-9
The **Duquesne University** team will create a tool that can be used to redesign the municipal zoning ordinances for the Borough of Dormont, Pennsylvania. The project will use the existing zoning groundwork set by the Borough to promote sustainability and development by encouraging the use of "green building", increasing community connections, civic involvement, maintaining historic preservation, and eliminating zoning restrictions to better suit the needs of a built urban environment.

Decentralized Waste Treatment and Energy Recovery in Rwanda
C-19
The **Gonzaga University/Pennsylvania State University** team has designed and tested methods to provide energy efficient water and wastewater treatment for a low-income area of Kigali, Rwanda.

Low-Cost Water Purification System: Developing an Effective Water Purification System for Local Production Which Offers Sustainable Economic Stimulus
C-10
Illinois Institute of Technology students will design a novel water purification system using clays to reduce bacteria and other problems such as hardness, arsenic, and nitrates in drinking water. The final product will be assembled from local materials by local potters in Mexico, thereby generating income in the community.

P³ Teams for 2007 alphabetically by college/university

Project Title
Exhibit Location
Description

Containment of Highly Concentrated Arsenic-laden Spent Regenerant on the Indian Subcontinent
C-15
Lehigh University and Bengal Engineering & Science University students will aim to find a way to safely dispose of sludge that is high in toxic arsenic. The team will construct a reactor and disposal site in West Bengal, India, to determine the best methods for analysis and disposal.

Regionally Appropriate Sustainable Design: Urban Green Roof Applications for Temperate Continental Climates
D-8
The **Macalester College** team will determine the economic benefits of green roof technology by installing a 1350 sq. ft. extensive green roof of native plants on an existing campus building.

The Design and Fabrication of a Lower Cost Heliostat Mirror System for Utilizing Solar Energy
B-13
New Mexico Institute of Mining and Technology students will develop a lower-cost heliostat - a mirror-based system that is used to continuously reflect sunlight onto a central receiver where the solar energy is converted to electrical power.

Drinking Water Purification for U.S.A.-Mexico Border Region
A-2
The **New Mexico State University - Main Campus** team will develop a technology that can remove arsenic and fluoride from well water along the New Mexico/Mexico border. The technology could be used in large water treatment plants as well as individual households.

Natural Surfactants in Paper Recycling
D-4
North Carolina State University at Raleigh students will develop protocols to use environmentally-friendly, sugar-based surfactants to remove inks from recycled paper. The replacement of petroleum-based additives with renewable ones will lead to an enhanced recycling process with less toxic waste.

Solar Photovoltaic System Design for a Remote Community in Panama
B-17
Northwestern University students will design and help implement cost-effective, solar power systems that can meet the electrical needs of Santo Domingo, Panama, in a culturally sensitive manner. Local solar power could replace the current energy sources of wood, gas and car batteries, reducing emissions and creating more energy independence.

Development of a Sustainable and Appropriate Drinking Water System for Montana de Luz and Nueva Esperanza, Honduras
A-5
The **Ohio State University** team will design an appropriate and sustainable water treatment and supply system for an orphanage for children with HIV/AIDS and a nearby small village (Nueva Esperanza) in rural Honduras.

"The nation behaves well if it treats the natural resources as assets which it must turn over to the next generation increased, and not impaired, in value."

- Theodore Roosevelt

The Chameleon House: an Adaptive Sustainable Manufactured Home
D-13
Oklahoma State University student teams will design a manufactured home that uses minimal amounts of purchased energy to provide heating and cooling for its occupants. The objective is to design a portable house that can adapt to the possible range of climatic conditions within the geographic borders of the State of Oklahoma.

Providing Safe Water to Rural Nepal: A Novel Water Filtration System
A-7
The **Rensselaer Polytechnic Institute** team will develop a filtration system to provide safe drinking water to rural villages in Nepal. The system will provide broad-spectrum pollution control for pathogens, organics and arsenic.

Solar Pasteurizer with Integral Heat Exchanger for Treating Water in Rural Areas
B-20
Rochester Institute of Technology students will design, build, and test a novel solar device to treat water in remote rural areas without electrical power. By using solar energy, the team's device will kill protozoa, bacteria, and viruses at temperatures below the boiling point using solar pasteurization.

Evaluating Point-Nonpoint Source Water Quality Trading in a Raritan River Basin Sub-Watershed
C-2
The **Rutgers**, **the State University of New Jersey** team will address water quality issues in the Raritan River Basin of New Jersey by determining whether several small sustainable trading markets within a large watershed can lead to greater success overall compared with implementing one larger-scale trading market.

Optimizing Green Roof Technologies in the Midwest
C-14
Southern Illinois University Edwardsville students will improve knowledge about storm water loss, storm water quality and thermal effects associated with green roofs and will provide a platform for educating others about green roof technologies.

Harnessing Ocean Wave Energy to Generate Electricity: A Scalable Model Designed to Harness a Large Range of Surface Waves on the Ocean
D-3
The **Stevens Institute of Technology** team will develop a device to harness ocean wave energy to produce electricity. Because of its design, the device will use a larger range of waves than existing systems.

A Bio-Diesel Baja Vehicle and Student Competition
B-23
University of Alabama at Birmingham students will convert a vehicle created for the SAE Mini Baja® design competition into a biodiesel vehicle, and through this process create the rules for a new competition with a focus on vehicle performance and production from biodiesel fuels. This approach will employ the carbon cycle to produce sustainable automotive propulsion.

P³ Teams for 2007 alphabetically by college/university

Project Title
Exhibit Location
Description

Sustainable Concrete Bacterial Filtration System for Developing Communities
A-8
The **University of Colorado at Denver** team is using concrete to develop an effective water filtration system that can be used in rural and suburban areas of cities without sufficient water treatment facilities.

Environmental and Economic Impact Analysis of Manure Digester Biogas-Powered Fuel Cells for the Agricultural Sector
A-16
The **University of Connecticut** team will use fuel cell technology to generate a significant source of energy from manure while reducing harmful particulates and greenhouse gas emissions.

Sustainable Design and Implementation of a Solid Waste Management System in Kratovo, Macedonia: A Learning Partnership between University of Florida and Macedonia through Engineers without Borders
A-1
University of Florida students will expand a project to design a long-term, sustainable solid waste management program in Kratovo, Macedonia, where solid waste is currently disposed of in the streets, the river, and an illegal landfill. Another aspect of the project is to inform the local community, government, and Peace Corps volunteers of the impacts of the current method of disposal on human and environmental health.

QnD – Designing a Participatory Scenario Modeling Tool to Integrate Technology, Ecology, and Sociology in Guatemala's Maya Biosphere Reserve and Beyond
D-12
University of Florida students will develop a new and innovative breed of models that promote sustainable policies in complex social-ecological systems. The modeling tools will be tested in Guatemala, but will be flexible enough to be implemented worldwide.

An Innovative System for Bioremediation of Agricultural Chemicals for Environmental Sustainability
B-18
This **University of Illinois at Urbana-Champaign** team is working to find an efficient way to reduce chemical leaching from agricultural fields, using a design that requires no maintenance, can be easily installed, and makes use of naturally available materials.

Solar LED Lanterns for the Replacement of Kerosene in the Developing World
B-24
This **University of Illinois at Urbana-Champaign** team will demonstrate to large investors the viability of light emitting diode (LED) lanterns by designing and creating simple, rugged, and low-cost solar LED lanterns. The lantern will produce a small but useful amount of light, allowing for a sustainable, inexpensive power-supply.

Converting Energy from Reclaimed Heat: Thermal Electric Generator
D-19
University of Missouri - Rolla students will construct a model that increases the overall power generation of a solar building system by efficiently capturing heat loss and converting this loss to energy.

If you want one year of prosperity, plant corn.
If you want ten years of prosperity, plant trees.
If you want one hundred years of prosperity, educate people.
- Chinese proverb

A New Approach for Biodiesel Production from Algae
C-3
University of Missouri - Rolla students will grow algae underground and then use it to produce biodiesel. Because algae do not need high light, and mine environments can be controlled, this should be an excellent way to produce high volumes of algae.

A Sustainable Method of Water Extraction for School-Community Gardens in Niger, West Africa
B-19
The **University of New Hampshire - Main Campus** team developed a sustainable low-technology rope-and-washer pumping system to provide the daily water needed to irrigate school-community gardens in Niger, the poorest country in the world.

Photosynthetic Biohydrogen, An All-Worlds Solution to Global Energy Production
A-6
This **University of Tennessee - Knoxville** team will design a biohydrogen facility that uses algae to produce hydrogen. The facility will be able to supply the transportation fuel for a city of 100,000.

A Novel Environment Friendly Method for Expansion and Molding of Polymeric Foam
C-9
This **University of Tennessee – Knoxville** team is developing a new, efficient and environmentally friendly process to expand and mold polymeric foam that does not use volatile organic compounds (VOCs). This new process would reduce raw material costs, VOC emissions and the cost of achieving worker safety standards.

The Learning Barge: Environmental + Cultural Ecologies on the Elizabeth River
D-18
The **University of Virginia** team, in collaboration with community partners, is designing and fabricating an off-the-grid, floating field station. Powered by solar and wind energy, the design collects rainwater, filters gray water with native plants, and utilizes recycled and renewable materials. The integrated environmental education curriculum teaches about sustainability and estuarine habitat restoration.

Designing and Demonstrating Sustainable Multi-Family Attached Housing
B-3
Washington State University students will design and build cost-effective and environmentally-friendly multi-family attached houses. The students will collaborate with Habitat for Humanity-Spokane and the Northwest EcoBuilding Guild to design and build units that can be built rapidly by relatively low-skilled, volunteer labor, with minimum waste, and with reduced environmental and economic costs.

Bio-Methane for Transportation
A-22
Western Washington University students will process biogas retrieved from local dairy farms and use it in a high-efficiency, hybrid engine that is powered by natural gas. This project will demonstrate and document the economic benefits of reduced manure management costs and increased revenue from bio-methane production.

2006 P³ Award Winners

Project Title
Exhibit Location
Description

P³ Phase II Project: Closing the Biodiesel Loop through Outreach, Research and Education
A-21
Appalachian State University students continued developing a sustainable education facility to promote and demonstrate community-scale biodiesel processing while providing hands-on research opportunities. This closed loop system design includes solar thermal heating, photovoltaic modules, a passive solar greenhouse, a grey water system, methanol recovery, soap making and composting.

P³ Phase II Project: Whole Systems Integrated Sustainable Design for Education (WISE) Website: An Interactive Website for Educators and Students
D-11
Portland State University students have created an interactive website for 4th to 8th grade educators and students to assist in designing 32 different school sustainability projects in five areas: Built Systems, Energy Systems, Habitat Systems, Plant and Garden Systems, and Pollution Prevention Systems. The PSU team has added an interactive mapping tool and forum to the website, and done some initial feasability studies for the website's use in the developing world. The team is also conducting a research study with WISE schools in the Pacific Northwest to assess the website's effectiveness in changing student attitudes about their place in the environment.

P³ Phase II Project: The Green Dorm: A Sustainable Residence and Living Laboratory for Stanford University
B-4
Stanford University students are exploring sustainable building technologies and sustainable living habits through the design, construction, and operation of an innovative facility containing residential, laboratory and common space. Through collaborative, interdisciplinary research, students have focused on a wide variety of topics including: wireless sensors, PV monitoring, solar hot water, wind monitoring, biodiesel, anaerobic biogas, life cycle assessment and sustainable cultures. To develop sustainable pathways around innovative buildings like the Green Dorm, Stanford hosted the Lotus Live workshop on April 13-14, as the "Dawn of a Nationwide Student Sustainability Coalition."

P³ Phase II Project: Biocatalytic Polymerization of Naturally Occurring Green Tea Flavonoids for Cancer Therapy
B-14
University of Massachusetts - Lowell students continue to synthesize compounds with promising anti-cancer activity from naturally occurring green tea compounds by utilizing environmentally friendly methods. These compounds specifically target and arrest the growth of cancer cells with minimal/no adverse effect on normal healthy cells.

P³ Phase II Project: Growing Alternative Sustainable Buildings: Bio-composite Products from Natural Fiber and Recyclable Polymer Materials for Transparent Load-Bearing Building Facades
C-8
University of Michigan – Ann Arbor students have developed and tested a new product design concept called SITumbra, using bio-composite materials to form passive low energy load bearing façades in buildings. They have developed innovative assembly concepts that optimize on the unique environmentally beneficial properties of these materials that are both strong and durable. The product is being prototyped for the construction industry market and is set to revolutionize design and construction methods towards more sustainable buildings on the planet.

EPA's P³ Award

The P³ Award competition enables college students to research, develop and design scientific and technical solutions to sustainability challenges. More than 350 students and their faculty advisors will compete for the 3rd Annual P³ Award and the opportunity for an additional $75,000 grant to move their designs to the marketplace or to implement them in the field.

A panel convened by the National Academy of Engineering (NAE) will judge the competition on April 24th and 25th. EPA will choose and announce the P³ Award winners April 25th.

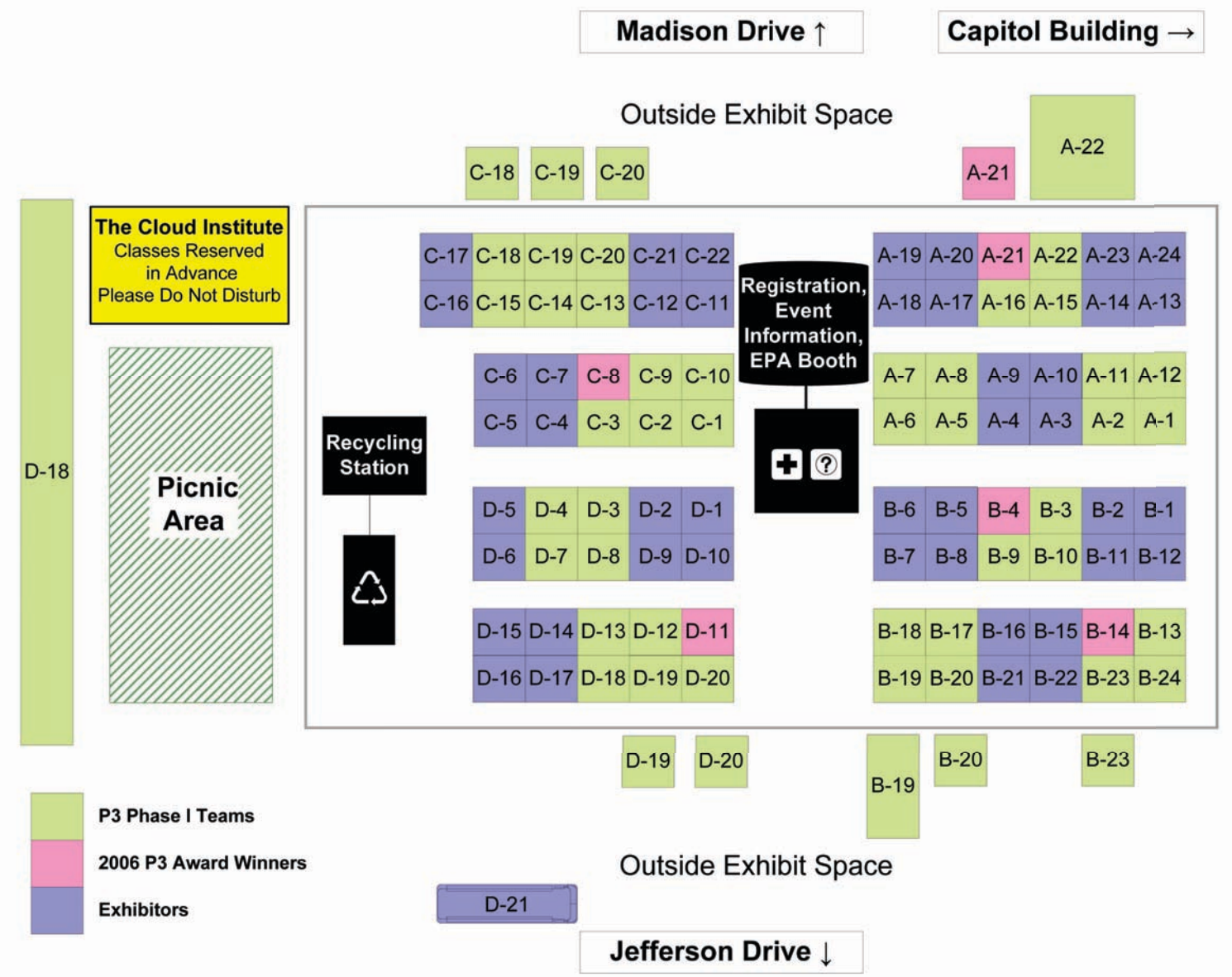
Founded in 1964, the NAE provides engineering leadership in service to the nation. The NAE operates under the same congressional act of incorporation that established the National Academy of Sciences, signed in 1863 by President Lincoln. Under this charter the NAE is directed "whenever called upon by any department or agency of the government, to investigate, examine, experiment, and report upon any subject of science or art." The NAE is a private, independent, nonprofit institution. In addition to its role as advisor to the federal government, the NAE also conducts independent studies to examine important topics in engineering and technology.

Other Awards

Green Building Initiative Award
This year, the **Green Building Initiative™ (GBI)**, a not-for-profit organization dedicated to "bringing green to the mainstream" by promoting credible and practical approaches to green building, will recognize one participating team with a $1,000 award to further its work. The award will be presented for the "Most Innovative Sustainable Commercial Design Project." The GBI will evaluate teams that submit projects focused on commercial design and address any of the seven areas of assessment from its innovative commercial construction rating and assessment tool, Green Globes™. These seven areas of assessment are project management; site; energy; water; resources; emissions, effluents, and other impacts; and indoor environment.

Institute for Sustainability Youth Council on Sustainable Science andTechnology (YCOSST)
American Institute of Chemical Engineers-Institute for Sustainability (AIChE-IfS) will donate $1,000 to the team awarded the YCOSST P³ Award 2007. The criteria for the award include considerations regarding development, deployment to regions with limited resources, materials, and youth involvement. Specifically, the judges will consider involvement of interdisciplinary collaboration; use of novel, innovative technologies to facilitate distance communication during research; and employment of sustainable practices during research; ability of youth or people without significant financial ability or property rights to obtain and use the device or invention; use of materials that are locally produced and available to the general population; ability of local populations to maintain the device or invention; integral involvement of youth in implementation, and direct benefit to youth.

2007 National Sustainable Design Expo Floor Plan



A-1. University of Florida: Solid Waste Management
A-2. New Mexico State University
A-3. CDC National Center for Environmental Health and the Agency for Toxic Substances and Disease Registry (NCEH/ATSDR)
A-4. Centers for Disease Control Safe Water Program
A-5. Ohio State University - Main Campus
A-6. University of Tennessee - Knoxville: Photosynthetic Biohydrogen
A-7. Rensselaer Polytechnic Institute
A-8. University of Colorado Health Sciences Center
A-9. District Department of the Environment
A-10. The Sustainable Business Network of Washington
A-11. Cornell University: Solar Hot Water Collectors
A-12. California State Polytechnic University - Pomona
A-13. US Peace Corps
A-14. University of Virginia / Sustainable Practices
A-15. Ball State University
A-16. University of Connecticut
A-17. Johns Hopkins University
A-18. George Mason University
A-19. Corcoran College of Art + Design
A-20. Corcoran College of Art + Design
A-21. P^3 Phase II: Appalachian State University
A-22. Western Washington University

A-23. Center for Housing and Urban Development, Texas A&M University
A-24. University of Tennessee
B-1. American Chemical Society Green Chemistry Institute
B-2. AAAS - American Association for the Advancement of Science
B-3. Washington State University
B-4. P3 Phase II: Stanford University
B-5. American Society of Mechanical Engineers
B-6. Green Map System
B-7. National Park Service
B-8. The Green Building Initiative
B-9. Duquesne University
B-10. Columbia University, Barnard College, University of Texas at El Paso
B-11. Healthy Building Network
B-12. US EPA Green Chemistry Program
B-13. New Mexico Institute of Mining and Technology
B-14. P3 Phase II: University of Massachusetts-Lowell
B-15. US EPA Design for the Environment Program
B-16. US EPA Office of Pollution Prevention and Toxics
B-17. Northwestern University
B-18. University of Illinois at Urbana: Bioremediation of Agricultural Chemicals
B-19. University of New Hampshire - Main Campus
B-20. Rochester Institute of Technology
B-21. US EPA Green Building Workgroup
B-22. US EPA Office of Policy, Economics, and Innovation
B-23. University of Alabama at Birmingham
B-24. University of Illinois at Urbana: Solar LED Lanterns
C-1. Cornell University: AguaClara
C-2. Rutgers University - New Brunswick
C-3. University of Missouri - Rolla: Biodiesel Production from Algae
C-4. USDA CREES National Water Program
C-5. Earth Day Network
C-6. The Accokeek Foundation
C-7. Sustainable Community Initiatives
C-8. P3 Phase II: University of Michigan
C-9. University of Tennessee - Knoxville: Polymeric Foam
C-10. Illinois Institute of Technology
C-11. National Science Foundation/Environmental Sustainability & Energy for Sustainability
C-12. National Council for Science and the Environment
C-13. Duke University: Sustainable Homes
C-14. Southern Illinois University Edwardsville
C-15. Lehigh University, Bengal Engineering & Science University
C-16. Sullivan County Partnership for Economic Development
C-17. SmartFuel Project
C-18. Albion College
C-19. Gonzaga University, Pennsylvania State University
C-20. Duke University: Mechanical Aerator
C-21. The Green Building Institute
C-22. Alliance to Save Energy
D-1. Virginia Sustainable Building Network
D-2. American Society of Civil Engineers
D-3. Stevens Institute of Technology
D-4. North Carolina State University
D-5. American Society for Landscape Architects
D-6. DOT Center for Climate Change and Environmental Forecasting
D-7. California Polytechnic State University - San Luis Obispo
D-8. Macalester College
D-9. SustainUS
D-10. Youth Council on Sustainable Science and Technology (YCOSST), AIChE Institute for Sustainability
D-11. P3 Phase II: Portland State University
D-12. University of Florida: QnD
D-13. Oklahoma State University
D-14. National Building Museum
D-15. Federal Woody Biomass Utilization Working Group
D-16. USDA Agricultural Research Service
D-17. United Soybean Board
D-18. University of Virginia
D-19. University of Missouri - Rolla: Converting Energy
D-20. Appalachian State University
D-21. Georgetown University

Exhibitors for 2007

Organization
Exhibit Location
Description

American Association for the Advancement of Science (AAAS)
B-2
AAAS is an international organization dedicated to advancing science around the world. In addition to publishing the journal Science and other science-related publications, AAAS undertakes numerous programs that promote science to the public and monitor issues that affect the scientific community, including career development initiatives and activities focused on science and innovation for sustainable development.
www.aaas.org

The Accokeek Foundation
C-6
The Accokeek Foundation stewards 200 acres of Piscataway Park, a national park located in Accokeek, Maryland, on the shore of the Potomac River directly across from Mount Vernon. The land serves as an outdoor classroom for the foundation's educational programs, research, agricultural, and conservation projects. Through the National Colonial Farm and the modern organic Ecosystem Farm, as well as the management of its natural areas, the foundation strives to demonstrate the importance of a sustainable relationship between people and the environment.
www.accokeek.org

American Chemical Society Green Chemistry Institute (ACS GCI)
B-1
The mission of the ACS GCI is to advance the implementation of green chemistry principles into all aspects of the chemical enterprise. To accomplish that mission, ACS GCI supports research, works to integrate green chemistry into all levels of education, aids companies with industrial applications, hosts conferences, and cooperates with an international network of green chemistry advocates.
www.greenchemistryinstitute.org

Alliance to Save Energy
C-22

American Society for Landscape Architects
D-5
Founded in 1899, the American Society of Landscape Architects is the national professional association representing landscape architects. With more than 17,000 members and 48 chapters, representing all 50 states, U.S. territories, and 42 countries around the world, ASLA promotes the landscape architecture profession and advances the practice through advocacy, education, communication, and fellowship.
www.asla.org

American Society of Civil Engineers (ASCE) – National Capital Section and Committee on Sustainability
D-2
ASCE is a leader in sustainability through its on-going programs: Practice, Education and Research for Sustainable Infrastructure (PERSI) and Engineers Forum on Sustainability (co-sponsored with ASEE, AIChE, IEEE, & ASME International).
www.asce.org/professional/sustainability

"Now I truly believe that we in this generation must come to terms with nature, and I think we're challenged, as mankind has never been challenged before, to prove our maturity and our mastery, not of nature but of ourselves."

- Rachel Carson

American Society of Mechanical Engineers (ASME)
B-5
Founded in 1880, today's ASME is a 120,000-member professional organization focused on technical, educational and research issues of the engineering and technology community. ASME conducts one of the world's largest technical publishing operations, holds numerous technical conferences worldwide, and offers hundreds of professional development courses each year. ASME sets internationally recognized industrial and manufacturing codes and standards that enhance public safety, including those related to environmental and sustainability issues.
www.asme.org

Centers for Disease Control and Prevention/National Center for Environmental Health and the Agency for Toxic Substances and Disease Registry (CDC NCEH/ATSDR)
A-3
CDC's National Center for Environmental Health and the Agency for Toxic Substances and Disease Registry scientifically consider all factors that affect the health of people, including healthy community design.
www.cdc.gov/nceh and **www.atsdr.cdc.gov**

Centers for Disease Control and Prevention (CDC) Safe Water System
A-4
The goal of the CDC Safe Water System is to reduce diarrheal disease incidence in developing countries by working to implement, evaluate, study, and scale up water treatment at the household level. Household water treatment options to reduce disease incidence include chlorination, filtration, solar disinfection, and flocculation/chlorination. Demonstrations of different options, literature, and program descriptions will be available at the exhibit.
www.cdc.gov/safewater

Center for Housing and Urban Development (CHUD), College of Architecture, Texas A&M University (TAMU)
A-23
CHUD's vision is to enable a new paradigm of integration among practice, outreach, service, education, and research, which within a continuum of research, development, demonstration, and deployment, will enhance the quality of life for people and the quality of the built environment for place, particularly disadvantaged communities.
archone.tamu.edu/chud/

Corcoran College of Art + Design
A-19 and A-20
The Corcoran College of Art + Design, founded in 1890, is the oldest and most comprehensive professional college of art and design in the greater Washington, DC area. Part of a distinguished museum, the Corcoran Gallery of Art, the accredited College offers degrees in several programs including a five-year combined BFA/MA in Teaching. The College recognizes the importance of environmental stewardship as an intrinsic aspect of the educational curriculum. The Interior Design and Design programs stress issues of sustainability through class offerings in green materials and methods, as well as studio coursework. Students at both undergraduate and graduate levels are encouraged to investigate sustainable solutions to demanding interior, environmental and communications design problems.
www.corcoran.edu

Exhibitors for 2007 (cont)

Organization
Exhibit Location
Description

District Department of the Environment (DDOE)
A-9
In the District of Columbia, the DDOE is a one-stop-shop for programs and services that protect human health and the environment and address energy efficiency issues for all sectors of the city. DDOE programs are designed to facilitate cleaner air and water, green neighborhoods and building space, and assist with the management of hazardous and toxic waste disposal. Additionally, DDOE conducts community and educational outreach to increase public awareness of environmental and energy related issues.
ddoe.dc.gov

Department of Transportation (DOT) Center for Climate Change and Environmental Forecasting
D-6
The Center is the focal point in DOT of technical expertise on transportation and climate change. Through strategic research, policy analysis, partnerships and outreach, the Center creates comprehensive and multi-modal approaches to reduce transportation-related greenhouse gases and to mitigate the effects of global climate change on the transportation network.
www.dot.gov/climate

Earth Day Network
C-5
Founded by the organizers of the first Earth Day in 1970, the Earth Day Network promotes environmental citizenship and year-round progressive action worldwide. The Earth Day Network seeks to grow and diversify the environmental movement, and to mobilize it as the most effective vehicle for promoting a healthy, sustainable planet. These goals are pursued through education, politics, cultural events, and consumer activism.
www.earthday.net

Federal Woody Biomass Utilization Working Group
D-15
The vision of the Working Group is that ecologically and economically sustainable woody biomass utilization will result in more diverse forest, woodland, and rangeland ecosystems – characterized by native flora and fauna, healthy watersheds, better air quality, improved scenic qualities, resilience to natural disturbances, reduced wildfire threats to communities – and provide an alternative waste management strategy, contributing to rural economic vitality and national energy security.
www.healthyforests.gov/initiative/biomass.html

George Mason University, Department of Environmental Science and Policy
A-18
Environmental Science and Policy is an interdisciplinary department spanning the domains of natural science, social science, and policy studies. The department addresses complex environmental issues that challenge the integrity and sustainability of global systems through integrated research and teaching, with the goal of providing diverse learning experiences using state of the art research facilities, diverse field sites, and nationally recognized research grants.
www.gmu.edu/departments/espp/index.html

Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has.

- Margaret Mead

Georgetown University
D-21
Georgetown University's Fuel Cell Bus Program is supported by grants from the Federal Transit Administration. To date, five fully-functional fuel cell buses, powered by methanol, have been developed and demonstrated. These buses are clean, quiet, efficient, and use fuel that can be made domestically from non-petroleum sources including renewable sources.
fuelcellbus.georgetown.edu/

The Green Building Initiative
B-8
The Green Building Initiative strives to accelerate the adoption of building practices that result in energy-efficient, healthier, and environmentally sustainable buildings by promoting credible and practical green building approaches for residential and commercial construction.
www.thegbi.org

The Green Building Institute
C-21
Serving the Northern Virginia, D.C. & Maryland regions, the Green Building Institute, a 501(c)(3) non-profit organization, educates the public and building and design professionals about sustainable building practices and technologies. The Green Building Institute offers programs on various elements of green building such as rainwater collection, energy efficiency, green roofs, solar energy, home energy audits, and passive solar.
www.greenbuildinginstitute.org

Green Map System
B-6
The Green Map System is energizing communities across the United States and around the world to chart a sustainable future - together! Collaboratively developed since 1995, Green Map System has empowered a diverse global movement of local mapmaking teams charting natural, social, and cultural resources in their own hometowns. With award-winning global icons, regional hubs and workshops, and multi-lingual resources and websites, local sustainability networks are strengthened in hundreds of cities, villages and neighborhoods in over 50 countries.
www.greenmap.org

Healthy Building Network
B-11
The Healthy Building Network is a national network of green building professionals, environmental and health activists, and socially responsible investment advocates who are interested in promoting healthier building materials as a means of improving public health and preserving the global environment.
www.healthybuilding.net

Exhibitors for 2007 (cont)

Organization
Exhibit Location
Description

Johns Hopkins University Environmental Sciences & Policy Masters Degree Program
A-17
Hopkins' Environmental Sciences & Policy program offers a first-rate, flexible curriculum that allows students to tailor their academic experience to suit their personal needs and interests. Core coursework includes geology, hydrology, oceanography, meteorology, ecology, and policy making. Classes are offered in Washington, DC (near Dupont Circle), Baltimore, and online.
www.advanced.jhu.edu/academic/environmental/

National Building Museum
D-14
Created by an act of Congress in 1980, the National Building Museum is America's premier cultural institution dedicated to exploring and celebrating architecture, design, engineering, construction, and urban planning. Since opening its doors in 1985, the Museum has become a vital forum for exchanging ideas and information about issues such as managing suburban growth, preserving landmarks and communities, and revitalizing urban centers.
www.nbm.org
Please visit the exhibit, The Green House: New Directions in Sustainable Architecture and Design at:
www.nbm.org/Exhibits/greenHouse2/greenHouse.htm

National Council for Science and the Environment
C-12
The National Council for Science and the Environment improves the scientific basis of environmental decisionmaking through collaborative programs with diverse communities, institutions and individuals. The Council works for a society where environmental decisions are based on an accurate understanding of the underlying science, its meaning and limitations, and the potential consequences of action or inaction.
www.ncseonline.org

National Park Service Climate Friendly Parks Program
B-7
Through a partnership with EPA, the NPS works to reduce the effects of climate change and air pollution in our national parks by educating park employees, identifying strategies to reduce harmful emissions and empowering park employees to communicate with the public about the program.
http://www.nps.gov/climatefriendlyparks/program.htm

National Science Foundation (NSF)/Environmental Sustainability & Energy for Sustainability
C-11
NSF programs in sustainability support fundamental research related to industrial ecology, green engineering, ecological engineering, and renewable energy. The programs focus on sustainable engineering research and are housed in the Directorate of Engineering in the Chemical, Bioengineering, Environmental, and Transport (CBET) Systems Division.
www.nsf.gov

> *If we all did the things we are capable of, we would astound ourselves.*
> - Thomas Edison

SmartFuel Project at Wissahickon Charter School, Philadelphia PA
C-17
Under the SmartFuel Project, middle school students are building a biodiesel processor, and will make their own fuel from waste vegetable oil from local restaurants. The fuel will be used in vans they take on field trips.
www.wissahickoncharter.org

Sullivan County Partnership for Economic Development / G-Tech Commerce Park & Center for Applied Science & Technology (CAST)
C-16
The Sullivan County Partnership is pursuing an innovative regional economic development strategy focused on the manufacture, distribution, service and installation of green building materials and products. Faced with an estimated $6 billion annual demand for green building materials and products in the New York City metropolitan area, the Partnership, in concert with Sullivan County Community College and the County government, has embarked on the construction of a new academic program building and allied industrial park to foster hands-on training in green building and alternative energy systems and provide a LEED-certified home for companies that are in the green building materials and products sector.
www.scpartnership.com

The Sustainable Business Network of Washington (SB NOW)
A-10
SB NOW is a non-profit educational corporation that helps business embrace the sustainable marketplace of the future. SB NOW is a committed network of over 70 businesses, academics and non-profits dedicated to helping companies embrace a business model informed by the concept of the triple bottom line (people, planet and profits) of corporate responsibility. SB NOW helps change the way business operates and innovates with a focus on building better companies and stronger communities here in the "Capital of Capitalism."
www.sbnow.org

Sustainable Community Initiatives (SCI)
C-7
SCI's mission is to promote and develop collaborative community projects and public education programs that enhance economic opportunities and connect people, businesses and institutions more fully to their communities, the natural environment, and to each other. Currently, SCI's largest project is Community Forklift, a building materials thrift store. By accepting donations of building materials and selling them at very low prices, SCI is reducing waste and energy use, promoting green building and reuse, creating jobs, and revitalizing communities.
www.suscomini.org (project website www.communityforklift.com)

SustainUS
D-9
SustainUS is a nonprofit, nonpartisan organization of young people advancing sustainable development and youth empowerment in the United States. Through proactive education and advocacy at the policy-making and grassroots levels, SustainUS is building a future in which all people recognize the inherent equality and interdependence of social, economic and environmental sustainability.
www.sustainus.org

Exhibitors for 2007 (cont)

Organization
Exhibit Location
Description

United Soybean Board
D-17
The United Soybean Board (USB), created by the 1990 Farm Bill to manage and direct the National Soybean Checkoff, invests in research, promotion, marketing and commercialization programs to help expand and develop markets for U.S. soybeans. USB funds research, development, and commercialization of new industrial uses for soybeans, including adhesives, coatings and printing inks, lubricants, plastics and specialty products.
www.soybiobased.org/ and **www.unitedsoybean.net/newuses**

The University of Tennessee's Institute for a Secure and Sustainable Environment
A-24
The University of Tennessee's Institute for a Secure and Sustainable Environment promotes development of policies, technologies, and educational programs that cut across multiple disciplines, engage the university's research faculty and staff, and grow in response to pressing environmental and security issues facing the state, the nation, and the globe.
isse.utk.edu

University of Virginia / Sustainable Practices
A-14
The University of Virginia has demonstrated its commitment to sustainability through a diverse set of initiatives including energy conservation measures, environmental coursework, recycling programs, pursuit of LEED certification, and other activities. Three topics are presented in the Sustainable Practices program: energy conservation through improved building controls, teaching sustainable affordable housing design with ecoMOD, and general sustainable practices underway at the University.
utilities.fm.virginia.edu/energy/ and **www.ecomod.virginia.edu/intro.htm** and **www.virginia.edu/uvatoday/pdf/sustainability030607.pdf**

USDA Agricultural Research Service
D-16

US EPA Design for the Environment (DfE) Program
B-15
The DfE Program works in partnership with a broad range of stakeholders to reduce risk to people and the environment by preventing pollution. DfE focuses on industries that combine the potential for chemical risk reduction with a strong motivation to make lasting, positive change. DfE partnerships evaluate human and environmental health considerations, and performance and cost of traditional and alternative technologies, materials, and processes.
www.epa.gov/dfe

US EPA Green Building Workgroup
B-21
EPA's Green Building Workgroup was formed to bring together the many programs across the Agency that work with the building and development sectors to improve their environmental performance. The Workgroup seeks to build effective EPA leadership in the green building movement by jointly guiding, informing, and coordinating the development of Agency policies, programs, partnerships, communications, and operations that influence building and development.
www.epa.gov/greenbuilding/

"Wherever we look upon this earth, the opportunities take shape within the problems."

- Nelson A. Rockefeller

US EPA Green Chemistry Program & US EPA Green Engineering Program
B-12
The U.S. EPA Green Chemistry Program and Green Engineering Program are voluntary, partnership programs that promote innovative chemistry and engineering technologies that reduce or eliminate the use or generation of hazardous substances in the design, manufacture and use of chemical products and processes.
www.epa.gov/greenchemistry and www.epa.gov/oppt/greenengineering/

US EPA Office of Policy, Economics, and Innovation - Sector Strategies Division and Development, Community, and Environment Division
B-22
The Sector Strategies Program achieves performance improvement and burden reduction in 12 important sectors by addressing their unique issues and challenges in a collaborative setting. The Development, Community and Environment Division (DCED) helps communities grow in ways that expand economic opportunity, protect public health and the environment, and create and enhance the places that people love. Through research, tools, partnerships, case studies, grants, and technical assistance, EPA and DCED are helping America's communities turn their visions of the future into reality.
www.epa.gov/sectors and www.epa.gov/smartgrowth

US EPA Office of Pollution Prevention and Toxics
B-16
EPA's Office of Pollution Prevention and Toxics (OPPT) manages programs under the Toxic Substances Control Act (TSCA) and the Pollution Prevention Act (PPA) of 1990. Under these laws, EPA evaluates new and existing chemicals and their risks, and finds ways to prevent or reduce pollution. OPPT also manages a variety of environmental stewardship programs that encourage companies to reduce and prevent pollution.
www.epa.gov/oppt

US Partnership for Education for Sustainable Development
Materials available at B-2
The U.S. Partnership consists of individuals, organizations and institutions in the United States dedicated to education for sustainable development. It works with all sectors of American society to leverage the United Nations Decade of Education for Sustainable Development to foster sustainability education in the United States.
www.uspartnership.org

US Peace Corps
A-13
Since 1961, more than 187,000 volunteers have served in the Peace Corps, working in such diverse fields as education, health, HIV/AIDS education and prevention, information technology, business development, the environment, and agriculture. Peace Corps volunteers must be U.S. citizens and at least 18 years of age. Peace Corps service is a 27-month commitment.
www.peacecorps.gov

Exhibitors for 2007 (cont)

Organization
Exhibit Location
Description

USDA CSREES National Water Program
C-4
The mission of the National Water Program is to create and disseminate knowledge that insures a safe and reliable source of water of the appropriate quality to meet the needs of: food and fiber production; human health, use, and economic growth; and maintenance and protection of natural environmental systems throughout the United States and its territories. This mission is accomplished through research, education, and extension programs to protect and improve water resources in agricultural, rural, and urbanizing watersheds (including forest lands, rangelands, and croplands).
www.usawaterquality.org

Virginia Sustainable Building Network (VSBN)
D-1
VSBN promotes environmentally sound building practices for Virginia. Founded in 1995, VSBN has developed a statewide network of representatives from housing, banking, utility, construction, government, and environmental interests to change the way homes, commercial buildings, and communities are built in Virginia.
www.vsbn.org

Youth Council for Sustainable Science and Technology (YCOSST), AIChE Institute for Sustainability
D-10
Formed as a partnership between AIChE Institute for Sustainability and SustainUS, YCOSST is an active network of students and mentor partners from numerous disciplines--engineering, environmental sciences, chemistry, physics, social sciences, and business--who work to implement sustainability concepts in undergraduate research projects across disciplines. The council sponsors outreach programs for K-12 students and the public to explore sustainable choices and the technological components of sustainability.
www.aiche.org/IFS/Youth/YCOSST/Index.aspx

There are 42 partnering organizations from government, industry and non-governmental organizations participating in the implementation of the competition:

Government
- National Aeronautics and Space Administration (NASA)
- National Science Foundation
- Office of the Federal Environmental Executive
- US AID
- United States Department of Agriculture
- White House Council on Environmental Quality
- White House Office of Science and Technology Policy

Industry
- DaimlerChrysler
- Dell
- Herman Miller
- Hewlett-Packard
- Nexant
- US Business Council for Sustainable Development

Non-Governmental Organizations (NGOs)
- ACS Green Chemistry Institute
- Association of American Geographers
- American Chemical Society
- American Institute of Chemical Engineers
- American National Standards Institute
- American Society for Engineering Education
- American Society of Civil Engineers
- American Society of Mechanical Engineers
- Association of Environmental Engineering and Science Professors
- Association of University Leaders for Sustainable Future
- ASTM International Campus
- Decade of Education for Sustainable Development
- Education for Sustainability Western Network
- Engineers Forum for Sustainability
- Engineers without Borders
- Engineers for a Sustainable World
- Global Environment and Technology Foundation
- Industrial Design Society of America
- Institute for Electrical and Electronics Engineers
- Institute for Society, Ecology, and Environment
- International Center for Appropriate and Sustainable Technology (ICAST)
- Massachusetts Toxics Use Reduction Institute
- National Center for Manufacturing Sciences
- The National Collegiate Inventors and Innovators Alliance (NCIIA)
- National Council for Science and the Environment
- US Green Buildings Council
- US Partnership for the UN Decade for Education for Sustainable Development
- WERC
- World Resources Institute

P³ in Action

EPA and its partners started the P³ program – People, Prosperity, and the Planet – in 2004 to respond to the needs of the developed and developing world in moving toward sustainability. This national student design competition enables college students to research, develop, and design scientific and technical solutions to sustainability challenges.

In keeping with the goals of the EPA's P³ program, the National Sustainable Design Expo featuring EPA's P³ Award is applying the following environmentally sustainable practices:

- Using nondisposable rental equipment
- Generating electricity from a renewable resource (biodiesel fuel)
- Using lanyards made from recycled materials
- Collecting plastic name tag holders for reuse
- Providing recycling receptacles for paper, aluminum, and plastic
- Providing resource protection for the National Mall
- Using 100% post-consumer recycled paper for event literature
- Printing materials using vegetable-based inks
- Printing double-sided event literature
- Supporting green companies through environmentally-preferrable purchasing
- Using electronic communications whenever possible to promote the event and communicate with stakeholders
- Designing banners and signage for reuse
- Presenting P³ Awards made from recycled glass
- Presenting P³ Award certificates in frames made from recycled materials
- Locating the event in an area accessible by public transportation
- Turning off lights and equipment when not in use

Ways you can join us next year:

Exhibitor
By demonstrating or exhibiting your environmentally sustainable technology, product, or business model during this two-day event, you will have a rare opportunity to interact with other environmentally conscious exhibitors from universities, government agencies, and non-governmental organizations.

Co-sponsor
Co-sponsors for the Expo can use this vehicle to advance their connections to sustainable technologies, solve environmental problems, and/or support academic research and science.

Partners
P³ partners promote the P³ competition to their stakeholders, are involved with EPA's peer review process to determine which P³ projects should be funded, and are eligible to set up and staff a booth to promote their organization's sustainability activities during the National Sustainable Design Expo on the National Mall.

P³ Team and P³ Faculty Advisor
Each P³ interdisciplinary student team must have a university or college faculty member as an advisor. Advisors and teams are expected to attend the National Sustainable Design Expo in Washington D.C. in the spring and the P³ Award ceremony at the National Academy of Science's Great Hall. If you want to make sure you are notified about upcoming requests for applications, sign up at http://cfpub.epa.gov/ncer_list/elists/. Requests for applications open in the autumn and close in December.

See **www.epa.gov/P3** for more information about any of these opportunities.