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## Annual Dinner Comes October 21

### Program Includes Chapter Honor Awards and Officer Elections

Please join us for a fun evening with fellow chapter members at the 34th Annual Chapter Dinner on Wednesday, October 21, 6:30p, at the Crystal City Sports Pub. Enjoy dinner, throw darts, play some pool and watch highlights of this year's Chapter events and a variety of sports events on the 35 LCD screens.

During the evening we will honor the service of several colleagues as the Chapter presents its Honor Awards. We will also hold a brief annual meeting to vote for our 2010 Chapter officers and directors. Your attendance at the dinner is important to the election and governing process of the Chapter.

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## Solar Decathlon Returns to the National Mall Next Month

by Steve Freeman  
Guest Contributor



Image by Spine3D

Rendering of Virginia Tech's 2009 Solar Decathlon Entry

A global showcase of the latest and greatest working solutions for creating self-sustaining residences under the sun opens to guests October 9-18.

The 2009 Solar Decathlon will turn the National Mall into a mini suburb featuring homes incorporating a synergized combination of solar power generation, optimized use of other natural resources, low- and zero-energy techniques and appliances, environmentally friendly materials and smart technology. Prizes go to the entries that meet the far-reaching ecological goals of creating a completely self-sufficient solar-powered house that is still has market viability and still provides all the comforts of home.

The homes must produce enough electricity and hot water to perform all the normal functions of a home - from powering the lights; to cooking, washing clothes and dishes; to powering home electronics; and maintaining a comfortable temperature.

The prototypes come from 20 university teams, including some from Canada, Spain and Germany. Their mission was to design and construct a one-bedroom home under 800 square feet. Sponsored by the U.S. Department of Energy, this year's competition required that entries be attached to the power grid for net metering advantages. Net

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## Save Paper : Read Online

*AIA Northern Virginia News* is now available digitally.

We will continue to have a printed newsletter as well. If you wish to receive the newsletter digitally, just e-mail the request to [aianova@aianova.org](mailto:aianova@aianova.org). You can always switch back later. If you wish to continue to receive the printed version, you do not need to do anything. As always, the full newsletter can be viewed at [www.aianova.org](http://www.aianova.org)

Thank you for considering the Chapter's commitment to green practices.

*Please note, that due to our e-mail software, we can only send the digital newsletter to the primary e-mail address listed for you in the AIA database. You may submit an e-mail change to us at [aianova@aianova.org](mailto:aianova@aianova.org).*

# Solar Decathlon's Design School Showdown Set for October 9-18

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metering allows for the return of produced but unused power to the regional utility for future credit.

Regional representation comes from teams from Virginia Tech and Penn State. For more information on this year's competition, view <http://www.solardecathlon.org/>.

## Virginia Tech Tries 'Responsive Architecture'

Innovation was the priority for the solar house for Virginia Tech students, according to Joseph Wheeler, associate professor, School of Architecture and Design. The "LUMENhaus" entry gets its cue from the openness of the famed Farnsworth House.

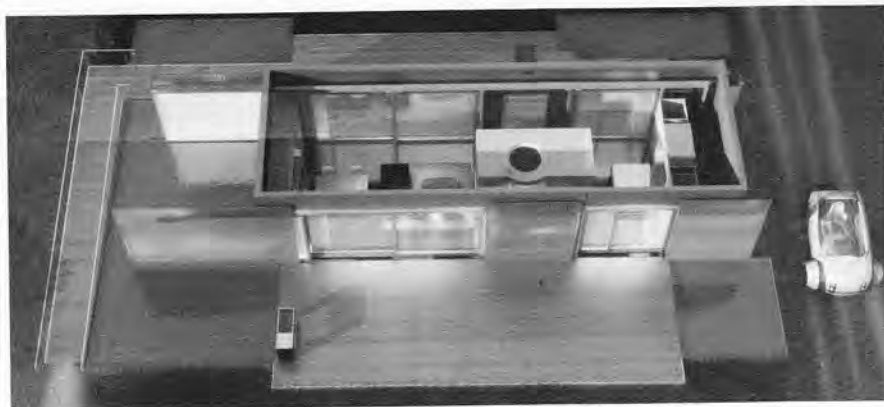
The team's design is dubbed "responsive architecture." The indoor/outdoor conditions are monitored, balanced and optimized thanks to sensors inside, a weather station outside and a master computer with Siemens Controls, which is itself managed with a customized iPhone application for convenience.

The designers refer to the house as a pavilion because the long facades on the north and south sides can be rolled aside via grids for complete open exposure and a tripling of space because of two decks. The facades consist of metal shutter shades and a translucent insulating polycarbonate panel filled with aerogel.

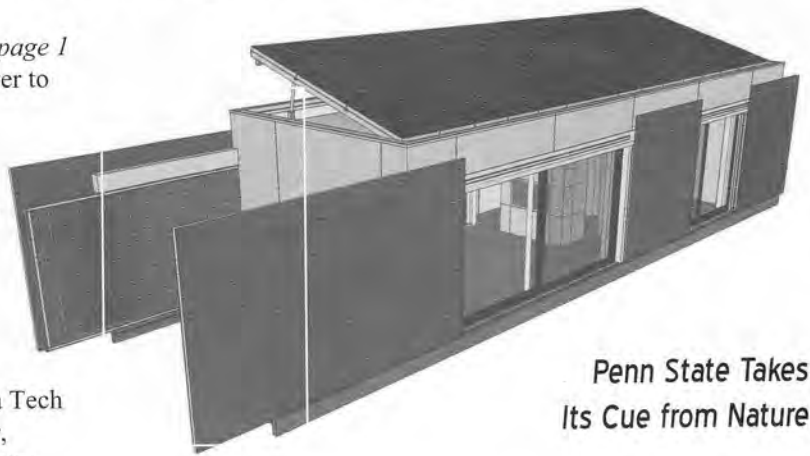
The house features a photovoltaic array that can produce an above average 9 kilowatts of energy. The energy, coupled with the computerized technology can manage temperature, shading, insulation, lighting, appliances and door locks.

Tech has been invited to re-enter LUMENhaus in the international competition Solar Decathlon Europe 2010, to be held in Madrid, Spain. Only two U.S. schools have been invited: Virginia Tech and the University of Florida.

The Hokies' entry is currently on display [through September 27] at the National Building Museum, Washington, DC.



Model of Virginia Tech's 2009 Solar Decathlon House



Penn State Takes Its Cue from Nature

Penn State students are focusing on integration with the beauty and efficiency of nature to earn points in the decathlon. Their "Natural Fusion" entry incorporates a folding wall system with passive and active shading devices, a green roof, and one exterior and two interior "living walls" covered in plants as a way to cool surfaces, ventilate the air and enhance the residence.



Rendering of Penn State's 2009 Solar Decathlon House

"No matter where you are, you have a view and every space opens up to the outside," said Daniel Sutton of Evans City, Pennsylvania, a 4th year architectural student.

The southern facade has four 7'-6" by 7'-6" door bays from Solar Innovations that allow total opening to nature. The window and door semi-opaque blinds with a honeycomb structure, from Hunter Douglas, aid in trapping the heat inside in the winter and reducing heat penetration in the summer.

The team installed 27 solar panels from Solyn-dra, each housing 40 1-inch diameter tubes wrapped in thin film photovoltaic cells. The tube-shaped innovation allows a near 360-degree collection of sun while still permitting sun to hit the vegetation below.

The house is designed with an intention to be "rustic modern." The siding is thermally modi-

fied Poplar wood in 1 by 3-inch slats in front of a 1-inch layer of polyisocyanurate foam insulation board with a foil face, making the house both waterproof and heat-reflecting.

## AIA Potomac Valley Moves into Winning 2007 House

LEAF House - the 2007 award-winning project by University of Maryland students - has become the new chapter house for AIA Potomac Valley in the same proximity on the university's College Park, Maryland, campus where the chapter headquarters was located before.

"We are now the first Chapter with a totally green Chapter House in the country," said Lloyd Unsell Jr., Honorary AIA, executive director of the component.



The LEAF House, University of Maryland's winning design from the 2007 Decathlon

In the competition, LEAF House took 2nd-place honors overall by racking up top wins in the categories of lighting, communications and energy balance. Orientation and installation has remained true to the original plans.

Maryland's house gets its power from 34 Sanyo solar panels. It is equipped with a Smart House Adaptive Control System, which gives the chapter the ability to interact with the house and track the house's conditions from an Internet-based interface.

The house also captured awards from the Washingtonian/AIA DC 2009 Residential Design Awards, the American Society of Heating, Refrigerating and Air-Conditioning Engineers and the National Association of Home Builders. It also won the 2007 Decathlon BP "People's Choice" award. AIA Northern Virginia is holding its November 9 Board Meeting at LEAF House. Members are invited to tour the house after the meeting. See the separate announcement in this newsletter for more information.

## Visiting the Decathlon

The Solar Decathlon houses will open for public tours October 9-13 and 15-18 (closed October 14). The times are 11:00a-3:00p Monday through Friday and 10:00a-5:00p Saturdays and Sundays.

Other participating schools are Cornell University, Iowa State University, Ohio State University, Rice University, Team Alberta (University of Calgary, SAIT Polytechnic, Alberta College of Art + Design, Mount Royal College), Team Boston (Boston Architectural College, Tufts University), Team California (Santa Clara University, California College of the Arts), Team Missouri (Missouri University of Science and Technology, University of

Missouri), Team Ontario/BC (University of Waterloo, Ryerson University, Simon Fraser University), Technische Universität Darmstadt, Universidad de Puerto Rico, Universidad Politécnica de Madrid, The University of Arizona, University of Illinois, University of Kentucky, University of Louisiana at Lafayette, University of Minnesota, and the University of Wisconsin-Milwaukee.

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## LEAF House Tour November 9

This is a slight variation on our Firm Tours. We are holding our November Board Meeting at LEAF House, the new sustainable AIA Potomac Valley Chapter House on the University of Maryland campus. The meeting will begin at 4:30p with the building tour at 6:00p.

LEAF (Leading Everyone to an Abundant Future) House was designed by the University of Maryland School of Architecture, Planning and Preservation as their 2007 Solar Decathlon entry. The entry earned a perfect score in the Energy Balance Contest and placed 2nd overall. After the competition, the Potomac Valley Chapter and the Potomac Valley Architecture Foundation entered into an agreement with the university to reconstruct the house as their Chapter House.

The house, a model of green design technology, features abundant windows and skylights, photovoltaic panels to power the entire house, concrete and reclaimed-wood counters and a waterfall in the living-room wall.

For additional information on the house, visit the University of Maryland Solar Team website at <http://www.solarteam.org/page.php?id=250>, the architecture school's site at [http://www.arch.umd.edu/people/students/academic\\_resources/solar\\_decathlon.cfm](http://www.arch.umd.edu/people/students/academic_resources/solar_decathlon.cfm) and the Potomac Valley Chapter website at <http://www.aiapvc.org/members.htm>.

The tour is free and registration is not necessary. One AIA/CES HSW SD learning unit is available for the tour. LEAF House is located at 3907 Metzert Road, College Park, MD 20740.



The LEAF House, new home of the Potomac Valley Chapter of the AIA

LEAF House photos by Kenneth M. Wyner