

U.S. Department of Energy Solar Decathlon 2015 Exhibit Talking Points

Teams

California Polytechnic State University, San Luis Obispo (House #107)



- INhouse is designed for a couple or individual living in coastal California who wants to engage and interact with the net-zero home and its environment.
- The elongation of the house along the east-west axis takes advantage of passive solar design principles to harness and control southern solar exposure while minimizing overheating on the east and west sides.
- A constructed wetlands system cleans and recycles all the greywater the house produces and directs it to be used for landscape irrigation.

California State University, Sacramento (House #102)



- Reflect Home balances a sense of openness with a respect for private space while demonstrating that sustainability can be achieved without sacrificing livability, comfort, and function.
- A living wall is functional as a vertical garden, offers protection from UV rays, and acts as a cooling mechanism while serving as living art.
- The house features a rain-collecting water feature on the back patio, which cascades rainwater from the roof to produce soothing sounds that bring life and motion to the backyard.

Clemson University (House #106)



- Indigo Pine uses a unique framing system called Sim[Ply], in which each component is individually numbered, flat-packed, and shipped to the building site to be assembled in a three-dimensional puzzle using only hand-powered tools.
- Indigo Pine’s foundation is made of concrete masonry units that form a “concrete lung” that encourages air to flow through the space and cools or warms the air passing through.
- A unique solar hot water system heats water directly with five solar panels to reduce energy loss.

Crowder College and Drury University (House #101)



- Shelter³ (pronounced “Shelter cubed”) is a disaster-resilient house designed to be quickly transported and installed in two modules in the aftermath of a tornado.
- The rooftop solar system ensures independent energy for heating and lighting after a disaster.
- Strengthened by walls with multiple layers of shielding, Shelter³ is further enveloped by an unyielding fence that deflects projectiles in high winds.

Missouri University of Science and Technology (House #108)



- The Nest Home is made from three refurbished shipping containers set around a central gathering space to create a triangle inspired by the shape of a bird's nest.
- Wood siding reclaimed from shipping pallets shields the exterior, while carpeting made from reprocessed fishing nets covers the floor.
- A greywater system gathers water from showers to reduce water consumption by 25%, and hydroponic gardens provide residents with fresh produce year-round.

New York City College of Technology (House #105)



- DURA (Diverse, Urban, Resilient, and Adaptable) is an urban house designed to be resilient to disasters like Hurricane Sandy.
- The house features a flexible design with adaptable spaces to accommodate a home office, bedroom, mechanical room, or child's play area.
- DURA's diversity is reflected in its ability to be configured as either a standalone house on a small New York City lot or part of a four-unit high, double-length multifamily structure.

Team NY Alfred: State University of New York at Alfred College of Technology and Alfred University (House #207)



- Alf House features an open, central gathering place made up of the living, kitchen, and dining areas surrounded by a glass wall system that draws in southern light and can be opened to expand the space onto the porch.
- Designed for a small family living in heavily wooded Allegany County, New York, Alf House's solar panels will maximize all available sunshine to sustain a zero-energy house.
- A three-section hydronic radiant heat flooring system keeps the house warm and cozy for the cold winter season of rural New York.

Stevens Institute of Technology (House #110)



- SURE (sustainable + resilient) HOUSE is armored against extreme weather and can provide emergency power in the aftermath of a storm.
- Focusing on indoor-outdoor spaces, this shore house doubles its usable space in summer by opening up to the outdoor decks.
- Working with local topography such as dunes, the SURE HOUSE can be raised slightly to avoid periodic nuisance flooding and encapsulate vital building systems in a storm-resistant shell.

Texas/Germany: The University of Texas at Austin and Technische Universitaet Muenchen (House #104)



- NexusHaus offers a solution to the strain facing Austin’s water and electricity infrastructure by providing a solar-powered house that collects most of its own water and provides vegetables and fish for consumption through a closed-loop aquaponics system.
- To combat the intense summer sun in Central Texas, NexusHaus employs two design features typical in vernacular Texas architecture: the dog trot (or breezeway) and a large covered deck on the south side.
- A student-designed home management system integrates traditionally separate home systems such as electricity, water, wastewater, smart appliances, indoor environmental monitoring and air conditioning, home occupancy and house security, interior and exterior lighting, home entertainment systems, and aquaponics.

University at Buffalo, The State University of New York (House #204)



- The GRoW Home is designed for a young, active, urban gardening couple that seeks to reduce its dependency on large-scale food and power systems by growing their own produce year-round and generating nearly twice as much electricity as they consume through their rooftop solar PV system.
- The Growlarium, a passively conditioned space, acts as a thermal buffer between the outside environment and the actively conditioned interior space and serves as a greenhouse during the winter.
- A four-zone variable-air-volume air-to-air mechanical system ensures maximum energy savings by only conditioning and distributing air on an as-needed basis to individual spaces within the house.

University of California, Davis (House #201)



- Aggie Sol is a prototype zero-net-energy home for the underserved farmworkers of America.
- The design addresses concerns associated with farmworker housing conditions—inadequate heating and cooling, poor air quality, work-related debris, and affordability—at a price that public and private housing providers can afford.
- A unique radiant cooling and heating system uses a large rainwater reservoir that is cooled by exposing the water to the air during the chilly night hours through a sprinkler system on the roof. The chilled water is then filtered and pumped through the radiant floor slab during the day to cool the house.

Team Orange County: University of California, Irvine; Chapman University, Irvine Valley College, and Saddleback College (House #203)



- Drought-resistant and architecturally adapted to Southern California, Casa del Sol features a south-facing veranda, halo with retractable tensile structure, and eastern brise soleil to passively maintain a comfortable temperature during winter and summer.
- An AC/DC bidirectional inverter allows the house to run on either electrical system, maximizes energy produced from solar panels, and makes Casa del Sol smart grid-ready.
- Casa del Sol's private studio unit, with its own bathroom and kitchenette, can be used as supplemental living space for family members or rented to economically support the homeowners.

West Virginia/Rome: West Virginia University and University of Roma Tor Vergata (House #206)



- STILE—the Italian word for “style”—blends Appalachian and Roman architectural concepts based on the formal opposition between the rectangular living area and the arch that supports an array of solar panels.
- STILE uses deconstructed steel shipping containers for sustainability and to allow a portion of the house to be pre-assembled for quick and easy transportation and assembly.
- A solar chimney uses changes in air temperature and density to passively cool the house.

Mass/Central America: Western New England University, Universidad Tecnológica de Panamá, and Universidad Tecnológica Centroamericana (House #202)



- Designed to be as affordable as possible without sacrificing comfort, EASI House’s minimalist design also allows homeowners to mold the house to their preferences.
- The modular house can be loaded onto a truck and transported in one piece, reducing assembly time and cost.
- Roof-mounted solar panels provide 100% of the house’s power requirements, a tankless water heater heats on demand to decrease the electricity load, and a ductless heating and cooling system provides maximum comfort throughout the house.

Sustaining Sponsors

The Solar Decathlon 2015 Sustaining-level sponsors each have exhibits in the Solar Decathlon village that feature fun activities and educational information. Please be sure to encourage guests to visit our sponsors' exhibits while they're here.

Edison International

- Edison International is the Solar Decathlon 2015 host utility sponsor, providing a temporary interconnection of bidirectional electricity flow between Southern California Edison's electric grid and the Solar Decathlon village microgrid as well as much of the event's infrastructure and furnishings (tents, tables, chairs, and signage).
- Rest your feet and beat the heat by visiting the Edison International tent and Hybrid Powered Mobile Energy Unit for information on energy efficiency, solar education materials, and rebates. The tent will have fun giveaways, a charging station for your phone, and lots of seating.
- Southern California Edison (SCE) has been a pioneer in renewable energy for decades, delivering 18,274 gigawatt-hours of clean solar power to our customers. That's enough electricity to power close to 2.8 million average customer homes for an entire year!

Schneider Electric

- A Sustaining sponsor since 2009, Schneider Electric provides the engineering design and supplemental equipment for our microgrid—a temporary, two-way power flow electrical system to interconnect the Solar Decathlon village and collegiate team competition houses. The company is also supplying the electrical microgrid monitoring system, which provides data for contest scoring.
- Schneider Electric demonstrates worldwide dedication to the Solar Decathlon. In addition to its support of four U.S. competitions, the company has sponsored Solar Decathlon Europe (in 2010, 2012, and 2014) and Solar Decathlon China (in 2013).
- Schneider Electric is a 180-year-old company whose mission is to help businesses realize the energy goal of keeping global warming under a 2°C limit—while achieving better operational efficiency.

Wells Fargo

- Wells Fargo, which has been a sponsor since 2011 and a Sustaining sponsor since 2013, extends its congratulations all who are involved with Solar Decathlon 2015 and working to develop America's clean technology infrastructure.
- Wells Fargo has a long history of supporting environmental causes—including investments in more than 300 solar projects and 47 wind projects that generate enough clean, renewable energy to power hundreds of thousands of American homes each year.
- Wells Fargo is a diversified, community-based financial services company that provides banking, insurance, investments, mortgage, and consumer and commercial finance. A leader in reducing its own greenhouse gas emissions and building sustainably, Wells Fargo serves one in three households in the United States and has been widely recognized for sustainability leadership in the communities it serves.