



2007 Solar Decathlon Report

About the Solar Decathlon:

The Solar Decathlon, sponsored by the U.S. Department of Energy was held October 12-20, 2007 in Washington, D.C. Santa Clara University (SCU) was one of 20 domestic and international university teams selected to compete in the design, construction, and operation of a solar-powered home. Team houses were evaluated in 10 categories and assembled on National Mall where they formed a solar village visited by over 200,000 people.

Challenges and Opportunities:

Santa Clara was a late entry (May 2007) to the Decathlon, admitted after another institution dropped out. As the only campus west of the Rockies, the SCU team (80 students and six faculty) objective was to build an “elegant, functional, and innovative” solar house. The competition included larger institutions – University of Colorado, Massachusetts Institute of Technology, Carnegie Mellon and universities from Spain, Germany, Canada and Puerto Rico.

SCU’s 650 sq. ft. solar house integrated innovative systems and solutions. Beyond architectural, engineering, and construction tasks – the solar project also allowed students to manage, market, and produce a product. The team participated in sophisticated project-based learning that included fund raising, outreach, presentation, research, leadership and team collaboration. The project tapped academic, industry and government partners, working together to promote innovation and social change through clean sustainable energy.

Despite a late entry, six months behind the other teams, the SCU solar house was ready to ship to Washington D.C. in September 2007. Transportation challenges included several broken axles, which delayed the house’s arrival by three days compared to the other universities. Determination enabled the SCU team to complete house assembly and enter the judging phase on time as one of the first teams to pass inspection prior to the exhibition opening.

Results:

The 2007 Solar Decathlon was the largest ever. Over 200,000 community members, contractors, and development companies visited the mall – walking through the homes and learning about solar energy systems from participating students. The competition’s 10 contests – (Architecture, Engineering, Market Viability, Communications, Comfort Zone, Appliances, Hot Water, Lighting, Energy Balance, Getting Around) were judged and scored for a total of 1,200 points. SCU (the only school without an architectural school) scored a disappointing 18th place in Architecture. Despite this setback, SCU captured first place in the Hot Water category, second in Communications, Appliances, and Getting Around, with a full score in Energy Balance.

When the winners were announced, SCU had finished 3rd well ahead of larger research institutions and behind the two top teams, Germany’s Technische Universität Darmstadt and the University of Maryland. Back on campus SCU students, faculty, and staff were exhilarated, when the “Cinderella team from California” was announced among the top three Solar Decathlon teams. Excluding the Architecture contest, the SCU team would have achieved a first place rank.

Exceptional Features of the SCU Solar House:

Unique green technology products and systems were featured in the SCU solar house – a competition-scale photovoltaic (PV) array supported by high-efficiency inverters and a large battery bank powered lighting, energy saving appliances, an entertainment system, computer, and an electric car. Bamboo I-beams, self-tinting smart windows, a solar-thermal-driven air conditioner, and insulation material from recycled denim were also incorporated into the construction. Exterior design elements, like the house's wrap-around deck and outdoor furniture made from old wine barrels, accented Santa Clara's California heritage and lifestyle.

Support:

The project required \$600,000 in funding and the team was directly involved in outreach activities and events designed to educate, fund raise, and promote the SCU solar home project. Major project sponsors included industry leaders – PG&E, Applied Materials, Intel, REGrid Power, Hallmark Construction, Pasha, Satyam, Solarsa, and The Webb Family Foundation. Many other individuals also supported the team, through a combination of cash and in-kind donations, and professional services.

Media Coverage:

Local, national, and international media coverage of Santa Clara and the Solar Decathlon included TV news broadcasts, radio interviews, audio segments, and Web site postings.
(See – www.solardecathlon.org and www.scusolar.org for more information.)

Accolades:

The 2007 SCU Solar Decathlon team received numerous accolades as they prepared for and following the competition. The team received commendations from the Assistant Secretary for Energy Efficiency and Renewable Energy, California's Governor Arnold Schwarzenegger, Congressman Mike Honda, and Patricia Mahan, Mayor of the City of Santa Clara, among others. They also received the Environmental Achievement Award from the U. S. Environmental Protection Agency.

SCU Solar House:

Santa Clara's solar house will be re-assembled (Spring 2008) on the University campus, where it will serve as a showcase for green living. It will also function as a demonstration laboratory, supporting SCU research initiatives in the field of sustainability and clean energy systems. Community members will have access to the house through educational outreach programs designed to encourage K-12 students to pursue engineering and technical careers promoting sustainability.

2009 Solar Decathlon:

Santa Clara is among the 20 university-led teams selected to compete again in the U.S. Department of Energy's (DOE) fourth Solar Decathlon, to be held fall of 2009 in Washington, D.C. This time, addressing the shortcoming in architecture from the previous entry, SCU is teamed with California College of the Arts' architecture program. West Valley College's pre-architecture program will also assist with documenting the designs.

Building on past success, strong faculty and student interest and established industry partnerships, the 2009 SCU/CCA entry will incorporate refined design elements with state-of-the art technology from Silicon Valley clean energy partners.

Partnership Opportunities:

Sponsorship and partnership opportunities are available for supporting SCU's 2009 Solar Decathlon project and expanding clean energy research. Please contact Leman Ethem, Associate Director, Corporate Relations (lethem@scu.edu 408-554-2724) for more information.