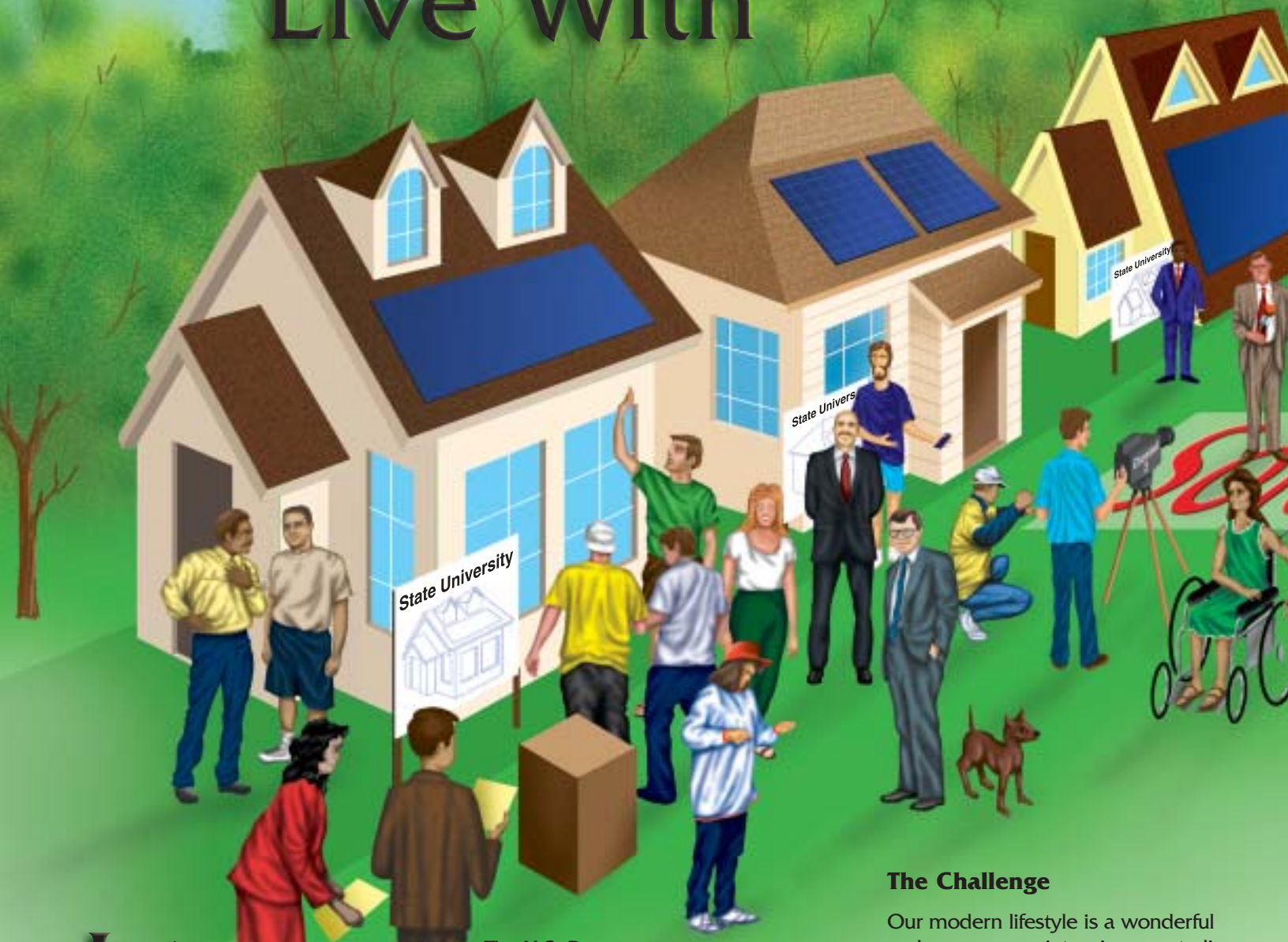
The Solar Decathlon

Challenging Students To Build The Future

Energy We Can Live With



Imagine walking through a neighborhood where every house on the block needs only the sun to provide daily energy needs for the household, including electricity, heating, and transportation. In 2002, you will have that opportunity. At the National Mall in Washington, D.C., visitors will be able to watch student teams compete in a 10-part race to create the most effective solar-powered house.

The U.S. Department of Energy (DOE), with the National Renewable Energy Laboratory (NREL) and private-sector partners BP Solar and the American Institute of Architects (AIA), are sponsoring this event to ensure a brighter future for our nation. With the support of the sponsors, students will prove that investment in renewable energy and energy efficiency technologies can reduce our dependence on foreign oil, improve human health, conserve natural resources, and create markets for American products around the world.

The Challenge

Our modern lifestyle is a wonderful and very energy-intensive way to live. We get from place to place with speed and ease. Our homes are aesthetically pleasing, comfortable, and well made. They provide us with facilities for domestic chores as well as relaxation. And for many of us, our homes are a place to work as well. The Solar Decathlon consists of 10 contests that encompass all of the ways in which we use energy in our daily lives—from livability and comfort to daily chores and home-based work to getting around town. The most successful Solar Decathlon teams will be those that integrate a diversity of knowledge

to blend aesthetics and modern conveniences with maximum energy production and optimal efficiency.

The Solar Decathlon sponsors have chosen 14 university and college teams to compete in this challenging competition. Each team will build a uniquely designed 500-ft^2–800-ft^2 house. These Solar Decathletes will transport their houses to the National Mall to compete on a world stage. Only the solar radiation incident on each house will be used to generate the thermal, electrical, and mechanical power needed to compete in the 10 contests. The best-looking house that can produce the most energy and use that energy the most efficiently will win.

The Solar Decathletes

Unlike its athletic counterpart, the Solar Decathlon is a team event. The most successful teams will include students from a wide variety of academic disciplines. The 10 contests will test architectural, engineering, marketing, and communications skills. The Solar Decathletes will have an unprecedented opportunity to work together to gain hands-on experience in the entire process of creating an energy-efficient, completely solar-powered house. These students will learn through real-world experience what they cannot learn in the classroom. And through the Internet and other media, the Solar Decathletes will extend their newfound knowledge to communities around the nation and all over the world.

The Solar Decathlon sponsors are committed to helping students and consumers make winning decisions about energy. Because when we power our lives with clean energy, we protect our own future. And when we protect the future, we are all winners.

The 2002 Solar Decathlon Teams

- Auburn University
- Carnegie Mellon University
- Crowder College
- Texas A&M University
- Tuskegee University
- University of Colorado at Boulder
- University of Delaware
- University of Maryland
- University of Missouri—Rolla
- University of North Carolina—Charlotte
- University of Puerto Rico—Mayagüez
- University of Texas at Austin
- University of Virginia
- Virginia Polytechnic Institute and State University

The 10 Solar Decathlon Contests

Design and Livability: A jury of architects will judge design, innovation, and aesthetics. The challenge of this contest will be to integrate design and solar energy and energy efficiency technologies into the domestic environment.

Design Presentation and Simulation: Before a project is built, the designers imagine the project through drawings and models. This contest evaluates the production of an imaginative and thorough set of documents illustrating the construction of each team's house and the simulation of its energy performance.

Graphics and Communication: Each team will be required to produce its own outreach materials, as well as provide live tours of their houses to the visiting public. The goal of this contest is to effectively explain the solar energy and energy efficiency technologies used in the competition house.

The Comfort Zone: This contest will demonstrate that each Solar Decathlon house is designed to maintain interior comfort through natural ventilation, heating, cooling, and humidity controls while using a minimum amount of energy.

Hot Water: This contest demonstrates that a solar house can provide all of the energy necessary to heat water for common uses such as bathing, laundry, and dishwashing.

Refrigeration: The challenge of this contest is to maintain appropriate temperatures in a refrigerator and freezer while minimizing energy use. Points will be awarded based on how consistently the refrigerator and freezer maintain interior temperatures throughout the competition week.

Energy Balance: The object of this contest is to begin and end the competition with the same amount of energy stored in the battery system, demonstrating that the sun can supply the energy necessary for all of the house's daily energy demands.

Lighting: This contest judges the energy efficiency of the lighting in the house as well as the elegance and quality during both the day and night.

Home Business: This contest will require that the solar-powered houses can provide enough power to satisfy the energy needs of a home-based business that uses a personal computer, fax machine, and other electronic equipment.

Getting Around: Every year, the personal transportation needs of Americans grow. This contest evaluates how much "extra" energy a competition house can generate to transport Solar Decathletes around town in a commercially available electric vehicle.

For More Information:

The Solar Decathlon Web site,
www.solardecathlon.org
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