Project Description
The Solar Decathlon is a competition among fourteen university teams to design, build, and operate a small home office powered solely by solar energy. Teams will compete in ten events during a two-week period of activities on the National Mall in Washington, D.C., in October 2002. The University of Colorado has assembled a team of engineering and architecture students from the Boulder and Denver campuses to collaborate on this project.

The Ten Contests
The competition consists of ten contests covering the broad range of energy in buildings. The ten contests are:
1. Design and Prototyping
2. Design presentation and simulation
3. Graphics & Communication
4. The Comfort Zone
5. Hot water
6. Refrigeration
7. Energy balance
8. Lighting
9. House builting
10. Lighting around

Team Objectives
The University of Colorado Solar Decathlon team has identified its own objectives in the context of the national competition:
- Educate students, the building industry, policy makers, and the public about the benefits of energy efficient and renewable energy technologies.
- Promote commercially available technologies and practices for widespread applications that are adaptable in cost, size, climate, and architectural program.
- Develop an elegant and integrated architectural design.

Design Commandments
1. Minimize energy use
2. Minimize waste
3. Promote education
4. Offer mass appeal design
5. Permit quick-in-site construction

BASE+ Design
Our Decathlon house design, called BASE+ (sustainable architectural design efficiency), is an adaptable architectural strategy for the Colorado team. The strategy is based on building technologies with green building materials in a simple, elegant design.

Our home will be constructed of three south-facing building blocks in a U-shaped arrangement. The three building blocks will be arranged with easy access in the middle section.

Daylighting will create a spacious, open feeling for the entrance of the house. Upon entering the front doors, light will be directed upward along a lofting kitchen ceiling to a set of clerestory windows. The clerestory, the ceiling plate will slope upward toward the east, drawing the viewer to the living area. The living area will be oriented with an entry view to the neighborhood and the neighborhood block.

The bedroom and bathroom located in the westend block, will employ more subdued daylighting techniques to create a more private feel for these spaces. The loft, which is placed on the north of the house, is architecturally the most experimental element of the house design.

The BASE+ design approach is rooted in simplicity. In our home, the living and bedroom wings comprise basic modules, which are built with structural insulated panels (SIPs) and could be assembled in a manufacturing environment. SIPs are factory-produced panels with integral insulation that offer a high strength-to-weight ratio and superior thermal performance. By comparison, the exterior cladding is a green module, which offers the widest range of architectural customization. These modules are intended to be the personalizing and defining architectural element.
Energy Debates Continue in Washington

The big news in Washington recently is the debate over the Senate Energy Bill. Opponents recently defeated an amendment that would have added the average gas mileage requirements for passenger vehicles. This deficit was defeated soon, after which it will be a conference committee to reconcile it with the House version, which passed earlier this summer.

In other news, Congressman Mark Udall continues to push to increase funding for renewable energy technologies by supporting the Clean Ohio Program, the Low Income Home Energy Assistance Program. In the past year, several energy bills introduced by Udall passed the House. One example is the High Performance Schools Act, which would help school districts build schools that take advantage of advanced energy conservation technologies, daylighting, and renewable energy to help the environment and increase student performance.

Although the action in Washington may yet get the nation's attention, it's the local efforts that will really make a difference. Action and support of local projects are crucial for the future of renewable energy.

Student Voices

Over the past six months, the CU Solar Decathlon team has involved over 50 students from both the College of Architecture and Planning and the College of Engineering and Applied Science. Such collaborations between architects and engineers are rare, if not unheard of. The Decathlon pushes architects and engineers to take other disciplines into consideration. It creates new professional relationships between architects and engineers, and Ryan Flanagan, a junior architecture student, reveals, "It challenges us to create architecture in the limits of engineering." Students appreciate the reality of the project. Graduate engineering student Eddie Yewell notes that "the Solar Decathlon gives us an opportunity to handle real-world issues and allows us to see the results of our design work." Janek Architectural Engineering student Chris Koda concurs, "It makes you feel like an engineer instead of a mathematician.

The students also get an opportunity to step beyond normal bounds of their discipline and become engaged in other aspects of the project such as fundraising, marketing, and educational outreach. Engineering Student Greeten Leshikar states, "You really need to know that our entry can be out beyond the completion of the competition to teach them in our community and beyond." Support for the Decathlon is Growing Rapidly

We are aiming to raise $25,000 to cover the project costs. We are relying on donations from friends, family, and businesses. The deadlines are approaching, and this is the time to become a part of a great project. All donations to the Solar Decathlon are tax deductible, and sponsors will receive essential recognition before, during, and after the event. This project will receive a great deal of attention on the national level, and our sponsors' logos may be displayed. Logos or names will also be on our website and on the Solar Decathlon's web site. We are an equal opportunity for all to get involved and we need your help!

Making the objectives of the project a reality will take us extra effort with many partners. Together we can promote public awareness of opportunities to improve building energy and reduce consumption, as well as to promote energy-efficient and renewable energy technologies as viable alternatives.

Financial and Product Contributors

- National Sponsor -
  - Energy
  - NREL
  - bp solar
  - AIA

Project Supporters

In addition to financial sponsorship, we enjoy the support and encouragement of many individuals and organizations. Some of the most notable include: Congresswoman Udall, Boulder Mayor, Will Toor, the Colorado Renewable Energy Society, and the Sierra Club.