Solar Decathlon
Energy We Can Live With
February/March 2002

Director's Note

Good news! Home Depot has joined the Solar Decathlon as a title sponsor. We welcome their enthusiasm and commitment to the success and longevity of the Solar Decathlon. You will be happy to know that Home Depot's sponsorship includes donation of materials for each team, specialized in-store clinics on subjects such as flooring, roofing, and framing to help teams during their building and construction phase, as well as on-site assistance during the event. The on-site assistance will be very beneficial while we work to build 14 houses in five days!

Most teams have had visits from us by now. Generally, you are all doing well. However, in the interest of having all 14 homes successfully competing on the Mall (no empty lots in our village please!), I want to offer a word of advice. Don't spend so much time re-designing that you don't have enough time to build. I've been through six solar car races and in each race several teams either didn't show up or couldn't get their car to run. They sat at the starting line while everyone else passed them by. Why? Because they thought if they made just one more design improvement, their car would have a better chance of winning. But design changes can take weeks to implement. Ironically, when time ran out, these teams couldn't even compete, let alone win.

To be successful, team leaders need good decision-making skills and the leadership to keep the project on schedule. By now you should all have your designs finished so you can start ordering materials and begin building. It is far better to have a completed house that is 90% efficient than a house that doesn't work at all. Going for that extra percentage point of improvement in efficiency versus not being ready just isn't worth it. So keep up the good work and keep moving forward. I look forward to seeing ALL of you compete this fall!

Richard King

Delaware Team Unveils Solar Decathlon Design

On Tuesday, February 19, the University of Delaware (UD) Solar Decathlon team "packed the house" with a special reception on campus. At the event, the team unveiled their Solar Decathlon design. They also used the opportunity to recognize the generosity of their many sponsors and to kick off the next phase of their project—the construction phase. Sponsors, media outlets, and the University all sent representatives to learn more about the team's participation in this major national competition.

The University President, David P. Roselle, welcomed the attendees and thanked the sponsors and the community for their support. He said, "This project provides excellent real-world learning opportunities that extend beyond the classroom." Roselle also noted that the University has provided resources such as expertise, financial support (Solar Decathlon fellowships), and a highly visible permanent display site on campus to ensure the success of this project. Roselle commended the team for already raising two-thirds of their anticipated fund-raising goal of $130,000.

Lauren Leonard, student leader of the UD Solar Decathlon team, presented an overview of the project, including the team's organization, current sponsors, and the ten contests in which they will be competing. She then ceremoniously lifted a blue velvet cover from a stand to unveil a tiny but detailed scale model of the team's house design.

According to faculty project leader Professor Lian-Ping Wang, reaching this point in the project required overcoming two major challenges—fund-raising and architectural design. (The University does not have an architecture school or program, so the team has relied on the expertise of professionals, including architect Hank Pierce from Moeckell Carbonell Associates, Inc.) "We are extremely fortunate to have the support of so many sponsors," said Wang, "including experts in the field who are willing to mentor students. They have become an integral part of our team, and this project is truly a team effort."

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We welcome our new sponsors
Home Depot and Electronic Data Systems (EDS)

The University of Delaware team hosted a campus event and unveiled the model of their Solar Decathlon house on February 19, 2002.

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Wang acknowledged all of the sponsoring organizations and introduced those representatives in attendance from AstroPower, Ecothermal Panel Systems, DuPont, and Hardcore Composites.

Following formal presentations, the students fielded questions from the audience. Student technical expert Tom Shipman answered questions about the modular design, the innovative but commercially available products being used to build the house, and the logistics of assembling, disassembling, moving, and reassembling the house. He also spoke about the cooperation that has developed among the 14 teams competing in the decathlon.

"This has been a tremendous learning experience for all of us," added student leader Leonard, "and that learning will continue to evolve as the project enters the next phases of activity."

Diane Kukich
University of Delaware

Design and Livability Jury

The Design and Livability contest challenges decathletes to integrate aesthetics with technology. A panel of architects and design professionals will judge each house on the overall aesthetics and the design integration of the technical features. Here, we provide background on the initial five panel members. At the suggestion of several teams, we are planning to add two additional members to this Design and Livability jury. Richard King is currently in the process of contacting several prominent architects to determine their availability. When we confirm their participation, we will publish additional biographical information about the new jury members.

Glenn Murcutt

Glenn Murcutt, one of Australia's most notable architects, is best known for his designs that integrate structure with the natural landscape. Although his works include public buildings, he is best known for his architecture of residences. Currently, Murcutt holds a visiting professor chair at Yale University. He also chairs the jury for the Aga Khan Awards for Architecture in Geneva, Switzerland. These awards honor architecture for its contemporary design as well as its contributions to society, the community, and conservation.

Murcutt has received numerous awards for his work and dedication to architecture. Last year, he was awarded the Thomas Jefferson Medal for Architecture. In 1999, he received the Danish Academy of Architects International Award for Ecology and Architecture. Murcutt received the Richard Neutra Award for Architecture and Teaching in 1998. In 1992, he received the distinguished Alvar Aalto Medal, which recognizes design that unites modern architecture with a sense of place and landscape.

Murcutt's projects have been published in international architectural journals, and his designs have been featured in books and showcased in exhibitions. With Philip Drew, he authored *Leaves of Iron* in 1985, and he has also been the subject of several books, including *Glenn Murcutt: Buildings and Projects*, published in 1995.

Since 1970, Murcutt has dedicated part of his career to teaching. He has served as a visiting professor and

critic at universities in Australia, Papua New Guinea, Denmark, Finland, and the United States. He has also been recognized as an Honorary Fellow at the Royal Institute of British Architects and the American Institute of Architects (AIA), among others.

Murcutt received a Diploma of Architecture from the Sydney Technical College in 1961 and, in 1969, established his Sydney-based private practice, a practice he still runs single-handedly today.

Edward Mazria

Edward Mazria's architecture and planning career, which spans a 30-year period, is characterized by an environmental approach to design. Mazria received his Bachelor of Architecture degree from Pratt Institute in 1963. After graduation, Mazria spent two years as an architect in the Peace Corps in Arequipa, Peru. In 1973, he began a teaching and research career at the University of New Mexico (UNM). His architecture and energy research at both UNM and the University of Oregon (UO) established his career in the field of resource conservation and innovative design methodology. In 1978, Mazria formed the architecture and planning firm, Mazria Riskin Odems, Inc.,where he still works today.

Mazria's published material includes technical papers; articles for professional magazines, such as *Architectural Design*; and a number of published works, including *The Passive Solar Energy Book*. His buildings have been published in *Architecture*, *Progressive Architecture*, *Architectural Record*, *Architectural Digest*, *Public Garden*, *Solar Today*, *The Wall Street Journal*, and *The New York Times*.

Mazria has lectured throughout the United States, Europe, Asia, and Latin America, and has taught architecture at UNM, UO, the University of Colorado at Denver, the University of California at Los Angeles, and the University of Nebraska at Lincoln.

He has received numerous awards including AIA's Design Innovation Award, the Landmark Designation Award from the Albuquerque Conservation Association, and the Pioneer Award from the American Solar Energy Society (ASES). He was also selected by the National Endowment for the Arts for its Design Arts Roundtable.

For more information about Mazria's work, visit www.mazria.com.

Ed Jackson, Jr.

Dr. Ed Jackson, Jr., has a diverse 25-year career in architecture and project management. He has directed applied research, managed large projects for government agencies, and designed healthcare facilities. He has also instructed at the university level (Baylor University) and practiced with private architectural and consulting firms.

Jackson has directed applied research for both AIA and the Architectural Research Collaborative. He has served as the Director of Research at AIA as well as the Director of AIA's Center for Building Performance and the Environment. At AIA, he oversees all program activities related to codes and standards, energy, disaster mitigation, research, sustainability, and green building.

As the CEO of the Architectural Research Collaborative, he provided architectural planning and design consulting services to a variety of clients, including the National Aeronautical Space Administration, the Pentagon Renovation Office, and the National Cancer Institute.

He has extensive experience in planning, designing, and renovating healthcare facilities, from concepts to design development to master planning to space requirements.

His involvement with civic affairs includes the Frederick Douglas Gardens and Memorials and the Dr. Martin Luther King, Jr., National Memorial Project. He earned a Bachelor of Architecture from the University of Illinois and a Doctorate of Architecture from the University of Michigan.

J. Douglas Balcomb

Dr. J. Douglas Balcomb is a Research Fellow at the National Renewable Energy Laboratory in Golden, Colorado. He has specialized in passive solar systems for 26 years and developed the Solar Load Ratio method, and recently, the *ENERGY-10* design-tool computer program.

Balcomb has written five books, chapters in six other books, 148 technical papers, lectured in 34 countries, and instructed 70 workshops. Balcomb has served on the board of directors for both the American and International Solar Energy Society and twice been Chairman of ASES. He organized the ASES Passive Solar Division, served as its first Chairman, and organized both the 1st and 20th National Passive Solar Conferences. He has attended every ASES conference since 1974, presenting at all but one. He is a founder of both the New Mexico Solar Energy Association and the Colorado Renewable Energy Society, chairing both organizations.

He has received eight major awards including the U.S. Department of Energy's prestigious 1996 John Ericsson Award for Renewable Energy, the ASES Abbott Award, the ASES Passive Pioneer Award, and the 1997 Lifetime Achievement Award from the Passive and Low-Energy Architecture international group. He earned a Bachelor

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of Science in Electrical Engineering at the University of New Mexico and a Doctorate in Nuclear Engineering at the Massachusetts Institute of Technology.

Stephanie Vierra

Stephanie Vierra has worked for more than a decade for architectural associations (as both a manager and a designer) where she has specialized in architectural education, research, and public awareness of art and architectural issues. She has collaborated with the Federal Emergency Management Agency, the American Wood Council, and the National Science Foundation. Vierra currently serves as the Executive Director of the Association of Collegiate Schools of Architecture. She leads and manages this international organization and its board of directors, its membership, and its staff. She develops and implements programs and policies that affect architectural education.

Vierra has also served as the Director of Practical Research for AIA. There, she developed and managed research and educational activities for architectural practitioners, faculty, and students. These activities include educational programs and products on seismic design, multi-hazard issues, photovoltaics in buildings, and accessible housing.

Vierra attended Kent State University, where she earned a Bachelor of Science in Architecture and a Bachelor of Architecture. In 1986, she studied abroad in Florence, Italy, focusing on Italian Renaissance art and architecture.

She is a member of a number of professional affiliations with historical and gardening interests (e.g., the National Trust for Historic Preservation, the Smithsonian Institution, and the Kentlands Garden Club). Her photowork, designs, and articles have appeared in professional magazines and journals, such as *AIArchitect*. She has also been involved in community service mentoring young architects and speaking at grassroots leadership conferences.

TH!NKing about Mobility with the TH!NK *neighbor*

Last month, Solar Decathlon organizers traveled to San Diego to meet with TH!NK Mobility staff and to test drive the *neighbor* model for our competition. TH!NK Mobility, an enterprise of the Ford Motor Company, recently introduced the TH!NK *neighbor*, a zero-emmissions, battery-operated electric vehicle. We were interested in the *neighbor's* availability, specifications, and technical performance. After driving this electric vehicle, we feel the *neighbor* will suit our contest purposes.

We were impressed with the *neighbor's* safety features and with the quality of construction. According to Ben Sullivan, TH!NK Mobility's national sales manager, and David Johnson, the manager of global distribution and service, these vehicles take about 6-8 hours to fully charge on 110V AC and have a range of up to 40 miles.

We plan to purchase a *neighbor* for each Solar Decathlon team for the "Getting Around" contest. Solar Decathlon *neighbors* will be identically outfitted two-seaters. The configuration and options will include the family package, soft weather enclosure, gel battery pack, grocery compartment, and steel-belted wide tires suitable for turf and road. You can see the car, a PDF of the owner's manual, and these options described at http://www.thinkmobility.com.

When can your team receive its car? We will place the order for your car when your team has received approval for the Final Design Report (due June 1, 2002). TH!NK anticipates that vehicles will be delivered (to a dealership) approximately one month after the order is placed. Teams will be required to choose the dealership where they would like to pick up their vehicle. Most dealerships that carry the *neighbor* are located in the southern United States (see the Web site for a dealer locator).

TH!NK has agreed to support the competition with a factory service representative during the Solar Decathlon. They will also recommend what type of tools teams should have, and they have given us a CD-ROM containing the service manual. We plan to duplicate the CD and send a copy of the service manual to each team. TH!NK may also support the cost of customized painting or decals for each team's car, including the Solar Decathlon logo and your school name and colors. We will let you know more as we work out the details. Stay tuned.

Cecile Warner

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