

S B S E N E W S

SOCIETY OF BUILDING SCIENCE EDUCATORS



**SPRING
2003**



Photos: Michael Garrison

The University of Texas Solar Decathlon House traveled to the Capitol then came back to roost at Pliny Fisk's Center for Maximum Potential Building Systems near Austin where you can take its Vital Signs.

TOOL DAY AT MAX POT

Tool Day is scheduled for 10:00 am–4:30 pm on Saturday, June 21, 2003, at the Center For Maximum Potential Building Systems (CMPBS) in Austin, TX. Participants will explore the University of Texas School of Architecture (UT) Solar Decathlon House and gain hands-on experience measuring aspects of its performance, such as photovoltaic power, ice battery cooling, daylighting, thermal comfort, visual comfort, and air movement. *[A classic two-for! The decathlon house plus MaxPot.—ed.]*

The UT Solar Decathlon House was part of a national competition among 14 student teams that each designed, built, and operated an 800-square-foot, completely solar-powered home. Michael Garrison (UT) and Pliny Fisk (CMPBS) directed the Texas Solar Decathlon Project. The decathlon was sponsored by the U.S. Department of Energy, together with the National Renewable Energy Laboratory, the American Institute of Architects, Electronic Data Systems, Home Depot, and BP Solar. The competition required teams to design for solar photovoltaic energy production, energy-efficiency, climate, thermal comfort, refrigeration efficiency, lighting efficiency, sustainable building materials, the operation of a home office, and transportation using a solar-charged electric vehicle.

The UT design features a flexible, modular, reusable kit-of-parts that sits lightly on the land and forms the superstructure around a mobile utility environment *[a fancy way to say, "Airstream."—ed.]*. The "open systems" design was intended to show how a mobile module could be expanded and adapted to a specific site and then modified for the needs of a different site in another climatic zone.

To sign up for this free event contact Walter Grondzik <gzik@polaris.net>, and watch the SBSE web site for more information. ■

—Michael Garrison

SBSE CALENDAR

- 2003**
- Apr 10–12 ARCC Conf.; ASU, Tempe, AZ
 - Jun 21 Tool Day; Austin, TX
 - Jun 21–25 ASES Solar 2003; Austin, TX
 - Jun 24** SBSE Annual Meeting; Austin, TX
 - Jun 28–Jul 2 ASHRAE Conf.; Kansas City, MO
 - Aug 8–10 AoC Workshop; Oberlin, OH
 - Aug 11–15 SBSE Retreat; Columbus, IN
 - Nov 9–15 PLEA Conf.; Santiago de Chile
- 2004**
- Jan TBA AoC Workshop; tba
 - Jun 26–30 ASHRAE Conf.; Nashville, TN
 - Jul TBA ASES Solar 2004; Portland, OR
 - Aug TBA AoC Workshop; tba
- 2005**
- Jun 25–29 ASHRAE Conf.; Denver, CO
 - Aug TBA Solar World Congress; Orlando, FL ■

CALL FOR NOMINATIONS

It's an SBSE election year. Submit your nominations for President-Elect and for Secretary/Treasurer to Alison Kwok <akwok@uoregon.edu> before our June annual meeting where slates will be determined. Nominate yourself; nominate a colleague. Ballots will be distributed in the Fall *SBSE News*. ■

—Bruce Haglund

RETREAT INFO [HTTP://WWW.SBSE.ORG/RETREAT2003/](http://www.sbse.org/retreat2003/)

LETTERS TO THE EDITOR

Thanks for the Arup CD. The global perspective on sustainability grabbed the attention of my students who are working on the ACSA Woods Council Competition and launched a rich discussion that transcended buildings. Great teaching tool!

Cheers and thanks to Alison Kwok and team for putting on an exciting (and elegant) Agents of Change workshop. My teammates, Nancy Clark Brown and Ronda Mohr, and I are enthusiastic about incorporating the ideas into our work.

—Judy Theodorson, WPCL Spokane

[I'm delighted to report that Judy was among over 60 educators from 10 countries who requested the Arup CDs. I was sorry to miss the AoC Workshop, so I asked Judy to expand her comments to a full review.—ed.]



Walter Grondzik and I had an idea at the last retreat—we created a scenario where each SBSEer takes a turn ruling the architectural world. Each submits her or his decrees for the sake of architecture. Our first “laws of architecture”—1. North will be up on all plans and a north arrow will be shown. 2. Every model will have a north arrow. 3. Sections will be clearly labelled to show their orientations. 4. Printed material will be readable through contrast (unlike the architecture program newsletter that has black print on dark photos). Exceptions will be allowed if the designer states (in very small print) that his or her intention was to make it unreadable. 5. On models, trees will demonstrate their sun shading capabilities (thus plain, vertical dowels will not suffice as trees). If deciduous, the trees will be interchangeable to demon-

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UNRAVELING A BUILDING'S SECRETS

Put inquiring minds into an award-winning building, and all sorts of interesting details come to the fore. Such was the case when Agents of Change (AoC) launched the first of five training sessions last January. We scrutinized the award-winning Water Pollution Control Laboratory (WPCL), by Miller/Hull and SERA Architects, that is set on a reclaimed industrial site adjacent to the Willamette River in Portland, OR. AoC organizers (Alison Kwok and her magnificent team) provided the tools and structure that allowed six groups of faculty and students from architecture schools across the country to unravel the WPCL's secrets, a process that proved investigative methodology can uncover the many layers of understanding how a building performs.

From a cursory examination you might conclude the laboratory skylights a positive design feature, providing both an interesting aesthetic and valuable daylight. “Skylights bring natural light into the lab areas without interfering with equipment” (SERA). However, during the AoC workshop, energy consultant Charlie Brown suggested the skylights were designed for aesthetics rather than daylighting. The local architect (SERA) revealed that the skylights were an alternative in the building contract. The lab director complained that the skylights leak onto very expensive equipment.

Two AoC teams put the lab's lighting under the proverbial magnifying glass, examined the drawings and specs, and determined the skylights are not aligned with the interior spatial configuration and probably don't admit enough light to be useful. Their photographic inventory of each skylight documented that many are obstructed by pesky mechanical and electrical systems. Interviews with lab workers indicated that the skylights are, uh, mostly unnoticed. And finally, actual measurement of daylight on work surfaces revealed the skylights do not significantly contribute to overall lighting levels—well, at least on that day at that moment. Okay, so much for the cursory look. Cheers for investigative methodology. Interested? Take a look at the WPCL presentations <<http://aoc.uoregon.edu/documents/0103teams.shtml>>. [See page 6 for opportunities to participate in the next AoC workshop at Oberlin College.—ed.]

In the aftermath, our WSU–Spokane team is excited about extending the AoC case study methodology beyond ECS courses. Nancy Clark Brown just returned from taking a group of students to Los Angeles. Instead of the usual “stroll and sketch” building tours, she had students study gallery lighting, complete with hypothesis development and on-site measurements (thanks to the AoC loaner toolkit). This trip was coordinated to support the students' work in my studio—the ACSA Wood Council Contemporary Arts Gallery Competition. In the next couple weeks, they will design and build daylight models, applying valuable lessons from their field trip, on-site investigation. We'll report results later.

Thanks, Alison and gang. Well done and much appreciated! ■

—Judy Theodorson



Where are two of WPCL's skylights? Hint: upper left corner and between electric lighting fixtures.

photo: Alison Kisor



One AoC investigative team looking into electric lighting in the WPCL office wing.

photo: Alison Kisor

RETREAT NEAR COLUMBUS

[Leonard Bachman reports that this summer's retreat is fully subscribed. See <<http://www.sbse.org/retreat2003/>> for details. If you still want to join in, you'll have to beg. And why? See Jeff's rationale below.—ed.]

Top 10 reasons to participate in the 2003 SBSE retreat in Indiana this August:

10. See and hear traces of former IU basketball coach Bobby Knight's expletives-not-deleted lingering in the atmosphere above the university ... an acoustic anomaly!
9. Stroll the beautiful rolling hills and woods where John Cougar Mellencamp.
8. Wrangle and ride the native mosquitoes!
7. Visit property once flown over by David Letterman!
6. Be "Back Home Again in Indiana!"
5. Learn the "real" meaning of the term "Hoosier!"
4. Experience the fallacy of the phrase, "Temperate Climate."
3. Compete with your colleagues in the "SBSE 500, the greatest spectacle in teaching!"
2. "Discover Columbus," how's that for role reversal?
1. Groove to the pulsing retreat program of Leonard Bachman-Turner-Overdrive! ■



As the building tour map indicates, Columbus offers a rich, compact architectural backdrop for the retreat.

—Jeff Culp

TO DO LIST

ARUP VISITING SCHOLAR

Arup sponsoring an SBSE visiting scholar has been a fantastic experiment. After a short ramp-up, Bruce Haglund is now busier than ever and well-integrated into our team. It's time to consider what Arup might do next. I'm very open to hosting another Visiting Scholar (either junior or senior position) if we can find an appropriate project area. We're currently researching human comfort, performance-based design, life-cycle analysis, and issues related to building futures.

If a sabbatical at Arup interests you, please e-mail me <chris.luebke@arup.com> (don't be disappointed if it takes me a bit to reply).

—Chris Luebke

SUSTAINABLE DESIGN GRANTS

The Oak Hill Fund, formerly part of the W. Alton Jones Foundation, seeks applications from nonprofits with 501c(3) standing for its Environmentally Sustainable Affordable Design Program that expects to disburse \$1.5 million during its first year. Grants are available in four areas related to sustainability and affordability in residential design: educational initiatives; design and construction; efforts to provide the public in the Southeast U.S. with access to green building technologies; and local grants for nonprofits in the Charlottesville (VA) area. ■

—Wendy Calarico

SOLAR DECATHLON MANIA

It's Solar Decathlon time again. The student competition to build a solar-sufficient house on the Capitol Mall last fall was featured in a one-hour documentary broadcast on February 23 on the Do It Yourself Network (DIY). [Just ask Mike Garrison how much fun the decathlon was. Or examine UT's entry first-hand at Tool Day.—ed.] As if that weren't enough, a new DIY series, *Solar Solutions Workshop*, began March 3. (Check the DIY site for local availability.) Registration for the 2005 Solar Decathlon is open until the end of April 2003. To register go to <http://www.eere.energy.gov/solar_decathlon/>.

—ASA

THE BIG GREEN EXHIBIT

Big & Green: Toward Sustainable Architecture in the 21st Century continues through June 22 at the National Building Museum in Washington, DC. This fine exhibition, curated by David Gissen of Penn State University, is

NEXT AGENTS OF CHANGE AT OBERLIN!

Discover the benefits and challenges of on-site building performance investigation this August 8–10 in Oberlin, OH. You and your faculty-TA team could be among the 24 FIPSE-funded Agents of Change who will test their hypotheses about Oberlin's Lewis Center for Environmental Studies. Join David Orr on a building tour and query him about the designers' intentions. Take this renown building's vital signs to see how healthy (green) it really is. Katy Janda, event coordinator, and her teams of faculty and TA trainers from FAMU, Idaho, Kent State, and Oregon will facilitate your learning experience. See <<http://aoc.uoregon.edu>> for full AoC details.

Your team's fellowship application is due **April 18, 2003**. Download the application form and e-mail your application packet to <aoc@oberlin.edu>. Enrollment is limited to 24 to ensure access to equipment, encourage full participation, and provide effective training. AoC fellowships include room and board, local transportation, and workshop registration fees. Non-U.S. applicants will be considered and are welcome to attend the workshop at their own expense.

Can't make the Oberlin workshop? Stay tuned for future workshop announcements.

EVEN MORE AGENTS OF CHANGE NEWS

The first six months of our FIPSE-funded AoC project have been filled with productivity! Last January 50 faculty and TAs from 14 architecture schools conducted a mini-case study of Portland's WPCL. All participants considered the training effective—59% deemed it very effective, and 89% reported gaining the necessary skills to train others. Our web consultant Robert Marcial designed a new look for our web site <<http://aoc.uoregon.edu>>. Eight schools have borrowed AoC instrument toolkits for a term to help implement case study methods and to pass on learned skills to another generation of students. We issued an RFP for regional training and will award two \$15,000 grants to faculty who will coordinate AoC workshops in January and in August 2004. The award winners will be announced soon. ■

—Alison Krok

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EVENT HORIZON

ARCC RESEARCH CONFERENCE

The Architectural Research Centers Consortium 2003 Spring Research Conference, "Stimulating Research," will be held at Arizona State University, **April 10–12, 2003**. ARCC research conferences are interdisciplinary and inclusive of the widest range of research interests. ARCC is especially supportive of student research and invites submissions from students engaged in research and/or scholarly activities. For details please see <<http://www.polaris.net/~arcc/web/call2003.htm>>.

—Walter Grondzik

OREGON'S 9TH HOPES CONFERENCE

The 9th annual student-organized HOPES Conference, "Ecological Urbanism," will be **April 10–13, 2003**, at the UO. Speakers include Stuart Cowan of Ecotrust in Portland, Kathryn McCamant, architect and author of *Co-Housing*, Lois Arkin of the Los Angeles Eco Village Project, and Mark Lakeman of Portland City Repair. Panel discussions, a design charette, and workshops fill the days and evenings. This event is a highlight of our year; the students know how to run a worthwhile conference. See <<http://edc.uoregon.edu>>.

—John Reynolds

GREENING OF THE CAMPUS V

Greening of the Campus V, "Connecting to Place," will be held **September 18–20, 2003**, at Ball State University in Muncie, IN. The Call for Papers will be posted soon to <<http://www.bsu.edu/greening>>—share it with colleagues. See you in September!

—Becky Amato

SYMPOSIUM: BRIDGES IN LIGHT

The inaugural Lighting Research Center symposium connecting traditional and nontraditional markets and technologies will be held **October 22–23, 2003**, in Saratoga Springs, NY. Topics include Light & Health, Energy, Solid-State Lighting, Sustainable Design, Transportation & Roadway Systems. Provocative concepts, new technologies, and unexpected markets will merge to begin building lighting networks. See the light through new eyes. For more info contact Patricia Rizzo, 518.687.7194, <rizzop@rpi.edu>.

—Patricia Rizzo

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REPAIRING AND PRESERVING FALLINGWATER

On January 23, 2003, the American Society of Civil Engineers (ASCE)/North Jersey Branch structural technical committee organized a dinner seminar on structural repairs and preservation of Frank Lloyd Wright's Fallingwater (1935). The speaker, John Matteo, of Robert Silman Associates (RSA) Structural Engineers, Washington, DC, led the restoration and preservation efforts at Fallingwater. He has extensive experience with historic buildings, implementing creative solutions in sensitive historical contexts.



Photo: Robert Silman Associates

During its reconstruction, Fallingwater sported an inelegant cantilevered greenhouse and shoring.

Fallingwater, voted in 1991 "the best all-time work of American architecture" by the AIA membership, is the supreme example of Wright's concept of organic architecture. However, Fallingwater has a troubled structural history—65 years of deflection and cracking. Problems were becoming apparent even before its 1935 construction was completed. [*Indicative of the best American architecture?—ed.*]

Funding of \$11 million was raised by the Western Pennsylvania Conservancy, who first related the problem of cracks in the parapet of the master terrace to RSA in 1995. RSA recommended a year-and-a-half monitoring program to track any movement. They also reviewed design documents, architectural drawings, and shop drawings. Probes were installed throughout the floor, and the GBG Group (Cambridge, UK) performed nondestructive testing (using pulse radar) to verify the layout of the steel reinforcing. The structure in this location consisted of two levels connected by four mullions and glass panels. The shop drawings, which were somewhat inconsistent with the architectural drawings, showed that the lower level was supposed to support the upper using structural T-sections. Based on the nondestructive testing, which revealed the absence of practically any top reinforcing, a structural model of the master terrace was developed. Obviously, there were some large negative bending moments on the upper section, and the slab was without top reinforcement to resist those negative moments. A deflection of up to 7" was visible in some of the main beams. In 1997, shoring was installed under the cantilevered section, as well as under the rock cantilevers. The repair team explored different solutions that included:

- leaving the shoring in place
- providing supplemental steel framing
- augmenting the steel using bonded steel plating, reducing floor height
- fiber reinforcing at the top surface, which can't provide sufficient added capacity
- using high-strength post-tensioning.

Ultimately, the post-tensioning solution was adopted, and Schupack Suarez (CT) chosen as the post-tensioning consultant. The concept was to introduce the multi-strand post-tensioning tendons within the floor depth, running north-south along the main cantilever beams, with mono-strand tendons running perpendicular to these beams to support the side terraces. The post-tensioning was anchored at discrete locations along the beam spans and ultimately tied down to the foundation. To expose the structure, the living room finished-floor sandstones were numbered, mapped, then removed. It was also necessary to remove the wooden subfloor, as well as its 2x4 supports. After the post-tensioning was completed, the floor was restored with new wooden joists and subfloor, and the labeled stones were reinstalled. The post-tensioning phase of the repair took place over a period of four months. Now, there is no visible evidence of the structural repair work.

The repair team apparently found no evidence of differential settlement at Fallingwater. Its main problems were in the detailing. Matteo commented that Wright's structural design was innovative for his time and often exhibited a good general sense for structural behavior, allowing Wright to take the risks he did in achieving his architectural goals. ■

—Rima Taher

COPING WITH MOLD AND POLY

This year's National Building Envelope Conference was held in temperate, rainy Vancouver, BC. What a suitable venue for the discussion of what turned out to be the premiere topic—Mold! Frankly, the number of green buildings in Vancouver, however impressive, is overshadowed by the vast quantities of buildings that are green due to fungal growth encouraged by constant rainfall that never allows them to dry out. International representation at NBEC fingered mold as a completely unbiased envelope issue, affecting buildings in New Zealand, North Carolina, Seattle, Hong Kong, and British Columbia with equal vengeance.

For mold to form in any part of a building four key ingredients must all be present—warm temperatures, moisture, oxygen, and “food,” usually wood and often the paper coating on gypsum board. Mold is found in wall assemblies, attics, and crawlspaces—concealed, limited places that are difficult to vent. Preventing attic mold is achieved by tight construction coupled with the use of a fantastic polyurethane foam sealant to fill all voids and cracks (no house air is allowed to escape into the attic space). Also critical is the provision of adequate, evenly distributed, unobstructed vents at both eave and ridge. Conversely, unvented crawlspaces have been found effective since allowing copious amounts of highly humid air into inherently cooler crawlspaces only results in mold. Testing residences in North Carolina has proven that it's preferable to construct “short basements” in lieu of crawlspaces. Simply insulate the walls on the exterior leaving their interior face exposed so that it can dry out; eliminate insulation in the floor between the crawlspace and ground floor to allow conditioned air to mix with the crawlspace air; put a thick layer of poly on the floor to prevent moisture/radon migration from the earth; and you have a mold-free environment.

The other conference question was “to poly or not to poly?” The practice of putting a layer of 6 mil polyethylene vapor barrier immediately between the gypsum board and the insulation, on the warm side of the wall, has been put into serious question by our subject demon—mold. The poly traps moisture that inevitably makes its way through the wall assembly and does not permit it to naturally breathe out. This problem suggests the use of an interior finish that is a combination of a vapor and air barrier. To prevent moisture from migrating into the building from the exterior, a rainscreen (a top- and bottom-vented 25mm air space) behind the exterior cladding should always be used, and the inside face of that cavity faced with Tyvek, a breathable membrane that allows water vapor to migrate from the wall, but prevents liquid moisture from entering the wall from the exterior. The baffling breathable membrane concept is skillfully explained by Linda Brock of UBC, “Tyvek is the Gore-tex of the building industry.”

I attended not only to pursue publication and appease the university administrators who evaluate me (with almost as much vengeance as mold affects buildings), but to gain valuable knowledge that I will dutifully and captivantly impart to my students. However, many of the presentations were so highly focussed on microscopic issues that I found it tough to extract much of use for my teaching. Such scientific data need interpretation to reach those who might be able to make use of them in building envelope design. ■



On a blue-sky day inside Safdi's Vancouver (BC) Public Library, who's worried about mold and poly?

SBSE PEOPLE

■ In September **Brooks Cavin's** firm, Claremont Environmental Design Group, received a Merit Award from the Pasadena & Foothill AIA Chapter for their conversion of an historic citrus-packing house to the University of La Verne (CA) Art and Communications Building, home to art, radio, and TV studios; classrooms; and faculty offices.

✪ **Yelena Chenchik** received a SCOUT Part-Time Teaching Grant to purchase reference materials and a set of instruments for Vital Signs exercises or Tool Day! Her sustainable architecture course is now required for architecture students at Southern Ural State. “Sustainability has become much more popular in Russian universities than it was when I left for the States, and I am very hopeful.”

✪ Promoted to Associate Professor and tenured at the University of Oregon, **Alison Kwok** thanks SBSEers for all their support and inspiration that made it possible.

🌐 **Chris Luebke** has been named Director of Global Foresight and Innovation at Ove Arup and Partners.

🐟 **John Reynolds** has been designated FAIA. His investiture will be Friday, May 9, in the Salk Institute plaza. JR received this recognition for his many contributions to architectural education.

☪ The war on Iraq has brought **Marc Schiler's** Fulbright Fellowship at the Technion in Haifa to an early end. [*Give peace a chance!—ed.*]

➤ **Christine Theodoropoulos**, *Connector* editor, has been named Oregon's architecture department chair. [*Condolences and wishes for a calm, productive sentence to my editing peer!—ed.*] ■

EVENT HORIZON [CONT.]

PLEA 2003 CHILE

“Rethinking Development: Are we producing a people-oriented habitat?” will be held in Santiago de Chile at 33°30'S on **November 9–12, 2003**. Though the official language is English, Spanish translation will be provided. Tours and invited presentations in other cities will make for a memorable week in November. For more info on PLEA topics e-mail <plea2003@puc.cl> or visit <http://www.plea2003.cl>. ■

LINKS TIPS

NASA ASTROPIX PICKS

Check NASA's astropix web site <<http://antwrp.gsfc.nasa.gov/apod/archivepix.html>>. They post a new image every day (with occasional repetition). The archive has accumulated an extraordinary number of images and several interesting animations over the last 5 or 6 years. Each image is accompanied by a short explanation liberally sprinkled with hyperlinks to associated sites. What a great way to spend several hours (or days)! I can recommend a few images that have been useful in my classes. The archive is chronological. Look at the images for these dates—2002: 10 Aug, 9 Jul, 5 Mar; 2001: 15 Oct, 25 Sep, 27 Aug, 18 Feb; 2000: 20 Apr; 1997: 30 Jan. If nothing else, the images make great computer wallpaper. Check out NASA's Visible Earth web site <<http://visibleearth.nasa.gov/>> and the "Blue Marble" animation <<http://visibleearth.nasa.gov/cgi-bin/viewrecord?11664>>. Enjoy!

—*Truett James*

HIGH-PERFORMANCE FAÇADES

Download the PDF document or explore the web site that examines the latest developments in high-performance building façades. <<http://gaia.lbl.gov/hpbf/>>. This new work takes a building systems' perspective on emerging façade technologies, such as highly glazed façades, double envelope façades, smart window technologies. It includes technology reviews, case studies, and results of focus groups with architects, engineers, and building owners. The project was supported by SCE and DOE and initially focussed on California issues, but now extends nationally and internationally. It builds on the tools and information already available for assessing more conventional glass and window performance at <<http://windows.lbl.gov>>.

—*Stere Selkowitz*

GREEN HOUSING

Check out these two green housing web sites.

🏠 The BO01 "Ecological City of Tomorrow" development at Malmo in Sweden <<http://home.att.net/~amcnet/bo01.html>>.

🏠 The RE-Start development at Rotterdam in Holland <<http://www.resetters.org/download/public/restart/CityProject5-Rotterdam.pdf>>.

—*Stuart McGregor*

• *continued next page*

WHAT LONDON IS READING

Leonard Bachman's *Integrated Buildings: The Systems Basis of Architecture* rolled off Wiley's presses last December. It's a wonderful collection of 30 case-studies. Discussions of the buildings are organized by building type—laboratory, office, airport, pavillion, residence, high-tech, and green—and follow four introductory chapters that set the philosophical and practical contexts for understanding systems integration. Representative buildings from the last five decades are drawn from temperate climates worldwide (the nontemperate exception is Foster's Hong Kong and Shanghai Bank headquarters). Each case study is thoroughly documented with fact sheets, climatic context, diagrams, photographs, and informed discussion.

This delicious work sprang from the author's fifteen years' experience teaching the architectural technology capstone course at the University of Houston and was inspired by his students' investigations of landmark buildings. During text development many SBSEers were among the enthusiastic contributors to the book's concepts and contents, resulting in a book with a strong point-of-view enriched by collaboration.

Is your favorite building exemplar included? Take a peek. *Integrated Buildings* is a delight that reveals much, but leaves you thirsting for more—more examples, more climatic diversity, vernacular architecture, color photos, design intent, and analytical diagrams. And how about a web site? Bring your copy to the retreat; you may convince the author to sign it. ■

—*Bruce Haglund*



Delightfully sharing with my friends in London.

photo: Tisha Egoshira

TO DO LIST [CONTINUED]

an early status report on a vastly encouraging phenomenon. It's exciting and challenging, and if all goes well, will be predictive of a sensible, stimulating future.

—*Benjamin Forgey, Washington Post*

□ ACOUSTICS DESIGN COMPETITION

We are pleased to announce the 2003 Student Design Competition, sponsored by the Acoustical Society of America (ASA) Technical Committee on Architectural Acoustics and the Newman Student Award Fund. This year's design scenario is a college education building, including two lecture halls that support multimedia presentations, classrooms, and associated spaces. The jury will be held at the 145th ASA meeting in Nashville, **April 28–May 2, 2003**. Details and last year's results may be found at <<http://www.newmanfund.org/>>. For more information, contact me <lwang4@unl.edu>, Bob Coffeen <coffeen@ukans.edu>, or Robin Glosemeyer <rglosemeyer@jhacoustics.com>.

—*Lily Wang*

□ CALL FOR CASE STUDIES

In October 2003, BuildingEnvelopes.org will host its 4th annual international conference in Shanghai, China, to discuss and showcase future applications of innovative building envelopes and environmental systems. We invite professionals and academics to submit case studies on projects that apply innovations in envelope systems, lighting, new materials, alternative energy sources, heating, cooling, and ventilation. A committee will evaluate submissions on the basis of clear objectives, originality, and significance of examples, results, and conclusions. Accepted case studies will be made available online, and authors may be invited to present at the Shanghai conference. The submittal deadline is **April 30, 2003**. Find more information and submission requirements at <http://envelopes.cdi.harvard.edu/envelopes/web_pages/home/home.cfm?activesection=Home> or e-mail <rhuijbregts@gsd.harvard.edu>. ■

—*Rick Huijbregts*

RESEARCH AND TEACHING NOTES

SMART THERMOSTATS

Murray Milne, working with PhD student Pablo LaRoche, has been awarded a \$74,685 contract by the California Energy Commission's Public Interest Energy Research program to demonstrate the feasibility of a new type of microprocessor thermostat that intelligently controls window sunshades to minimize residential cooling and heating costs. This study follows their development of a residential thermostat that used both indoor and outdoor temperatures to control a whole-house fan to minimize air-conditioning costs. Experiments are being conducted using two continuously monitored full-height test cells outside the Energy Lab on the Perloff Hall roof.

-Murray Milne

SUSTAINABLE ARCHITECTURE CERTIFICATE

In response to architecture firms' increasing interest in sustainability, the New Jersey School of Architecture is now offering a Graduate Certificate in Sustainable Architecture. The four required courses, inspired by the USGBC guideline structure, are Introduction to Sustainable Architecture, Sustainable Design of Energy-Efficient Buildings, Indoor Environmental Quality in Sustainable Designed Buildings, and Sustainable Design with Efficient Materials and Resources. Offered at night, the program will be promoted to the architecture firms in the NY-NJ area. Erv Bales, Bill Bobenhausen, and Deane Evans will be expanding the course offerings into a MS in Architecture that will include Management for the Building Industry as well as Environmental Policy and Economics.

-Erv Bales

THE TRIPLE BOTTOM LINE

Veronica Soebarto has been awarded a small research grant to conduct a "triple bottom line" assessment (environmental, social, and economic) of a small, sustainable housing development, "Christie Walk" <<http://www.urbanecology.org.au/christiewalk/>>, in the City of Adelaide. Investigations will include indoor comfort, energy use, daylighting, air flow, embodied energy of the construction materials, social perception and sense of community, and economic implications. Monitoring indoor temperature and humidity has just begun, and some of the occupants and the architect have been interviewed. The interviews and site visits have revealed a number of interesting and important issues that resources on environmental or sustainable design never mention. More stories to come! █

-Veronica Soebarto



Christie Walk housing.

drawing: Urban Ecology web site



photo: Walter Gronzlik

Green-roofed café links the tropical and temperate biomes at the Eden Project near St. Austell (UK).

LINKS TIPS [CONTINUED]

ECOLOGICAL DESIGN JOURNAL

As its name implies, *Ecotecture* is devoted to covering developments in ecological design from appropriate technology to eco-cities and eco-nomics, to whole system design. Visit <<http://www.ecotecture.com>> for your free subscription.

The première issue, January 2003, featured "Connecting with Frijtof Capra," an interview with the author of the *Tao of Physics*, *The Web of Life*, and recently, *The Hidden Connections*. Also included were "Permaculture California Style: An Interview with Penny Livingston," "Blood for Oil: The Strange Business of Invading Iraq," "Your Ecological House: The Course Outline," plus our library, design gallery, and ecological design calendar.

If you are interested in writing for *Ecotecture*, please contact us at <editor@ecotecture.com>.

-Skip Wenz

PROBE

The Probe site <<http://www.usablebuildings.co.uk>> provides mass quantities of parallel info on the UK version of Vital Signs and links or references all the Probe case studies. Register at no charge, and you can access gigabytes.

-Bill Soebarto

DAYLIGHTING SOURCE BOOK

Daylighting in Buildings: A Sourcebook on Daylighting Systems and Components, a 240-page book and companion CD, reports on the collaborative daylighting research on emerging technologies from 14 countries. Part of an International Energy Agency program, all content can be downloaded from our web site <<http://gaia.lbl.gov/iea21>>. We can provide one gratis copy of the book to each school. If you're interested, e-mail your shipping address to <SESelkowitz@lbl.gov>. █

-Steve Selkowitz

LETTERS [CONTINUED FROM P.2]

strate their shading patterns for each season. 6. Plans and sections will not overlap on the same drawing unless the intention is to promote confusion in the name of aesthetics.

-Norbert Lechner, Auburn University

[Well, okay. My dreams are much more delusional, but putting that aside, let's see who accepts the crown and adds to the Grand Charter.-ed.] █



Photos: Pete Knapik

Downtown Soldiers Grove futilely seeks February 2003 sun (top). Turtle Creek Creations (bottom) typifies the town's straightforward response to solar geometry, perhaps more artistically than its neighbors.

DUE FOR A 20-YEAR CHECK-UP

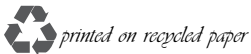
SOLDIERS GROVE, WI—Twenty men sat in Ed and Marie's New Wonder Bar and Grill one recent lunchtime, most of them drinking beers, some eating a burger or a tuna salad. We were in the downtown of a town whose homes were a half-mile away. We were sitting in a solar-heated tavern. Nearby was a solar-heated supermarket, a solar-heated medical clinic, a solar-heated library, a solar-heated bank, a solar-heated gas station. There are 15 commercial and municipal buildings here that have at least half their heat delivered from 93 million miles away. Many of the men who sat around the Wonder Bar that day had walked there from one-bedroom solar-heated apartments in the 16th solar installation downtown, Golden Acres, multiunit housing for the elderly. The only solar village anywhere is this cluster of buildings lying on either side of US Hwy 61 about halfway between La Crosse, WI, and Dubuque, IA.

—Charles Leroux, Chicago Tribune, August 23, 1984

For years I've heard about Soldiers Grove from many sources, but never in *Solar Today*. DOE still cites it as a model for sustainable development (they've even written a disaster recovery manual about it <<http://www.sustainable.doe.gov/freshstart/case/soldiers.htm>>), although they apparently didn't have much to do with developing the town. In 1991, Michael Schofield, then a graduate student at the University of Wisconsin–Madison, studied the solar systems in 10 of Soldiers Grove's commercial buildings for his master's thesis [*In astronomy?*—ed.]. He sought to determine their cost-effectiveness, concluding that the majority of the systems (7 of 10) were economical. Those that were not, were not sized properly. I spoke with Pete Knapik, a retired chemical engineer who came from Chicago two years ago to run an upscale B&B. He guesses that about half the buildings are still solar-heated and thinks the owners have taken their solar heating systems for granted (maybe that's good).

The idea of a *Solar Today* article is great. Even better, Soldiers Grove could be an SBSE project or retreat. Volunteers could visit the town to conduct a case study. Certainly Soldiers Grove should be included in the ASES National Tour of Solar Buildings if it's not already. ■

—Nick Dine



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C/O DIANE ARMPRIEST
DEPARTMENT OF ARCHITECTURE
UNIVERSITY OF IDAHO
PO BOX 442451
MOSCOW, ID 83844-2451

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