

# SOCIETY OF BUILDING SCIENCE EDUCATORS SBSE NEWS WINTER 2000



photo: Bruce Haglund

View from Redfish Lake Lodge across the beach and marina to the Sawtooth Mountains beyond.

## REDFISH LAKE TREK: THE NEXT GENERATION

Retreat Content Coordinator, Alison Kwok, has organized this year's retreat around the theme of training and supporting the next generation of great environmental technology teachers. This effort relates several on-going strings—Alison's FIPSE grant for evaluating the effectiveness of Vital Signs training of faculty and teaching assistants, her proposed FIPSE project for providing Vital Signs training for TAs, and the overwhelming need for architectural educators in environmental technology. The retreat is structured to include information about the FIPSE projects, our traditional exchange of teaching practices and research projects, and myriad opportunities for the old guard to serve as mentors for students and beginning faculty. Blocks of time have been reserved for networking among participants in the spectacular Redfish Lake (Idaho) setting. We're also offering scholarships to students with a strong interest in ultimately teaching environmental technologies. See the retreat website for details.

Our intention is to make this year's retreat as inclusive as possible. Families are welcome to come enjoy Redfish Lake's plethora of recreational opportunities and its sublime beauty. Although we've reserved accommodations for about 40, the lodge can hold many more. We encourage you to make your

commitment early to ensure your participation. The retreat will be held in the heart of Idaho from June 9 through 12. To sign-up for the retreat, visit our website <<http://www.aa.uidaho.bldgvital/sbse2001/>>, which has the registration form and detailed information about the retreat and Redfish Lake. *[We're not providing the familiar registration insert this year. So, go to the web!-ed.]* ■

-Bruce Haglund



photo: Bruce Haglund

## SBSE CALENDAR

### 2001

- Apr 8-10 ARCC Spring Conf.; Blacksburg, VA
- Apr 21-25 ASES Solar2001 Conf.; Washington, DC
- Apr 21 SBSE Annual Meeting; Washington, DC
- Jun 9-12 SBSE Retreat; Redfish Lake, ID
- Jun 15-18 ACSA Int'l Conference; Istanbul
- Jun 23-27 ASHRAE Annual Mtg.; Cincinnati, OH
- Jul 14-17 ACSA Technology Conf.; Austin, TX

*[ACSA hasn't posted abstract deadline info for the Technology Conference yet. Keep checking <<http://www.acsa-arch.org>>-ed.]* ■

## NO CYPRUS RETREAT

Fatih Rifki reports insufficient interest in holding an alternative SBSE Retreat in Cyprus following the ACSA International Conference in Istanbul. Walter Grondzik thanked Fatih for trying to organize the retreat and encouraged him to keep the dream alive until the time is right. Meanwhile, come to Redfish Lake for another great retreat before you enjoy Istanbul (and the ACSA conference). ■

-Bruce Haglund

## RETREAT REGISTRATION FORM AND FURTHER DETAILS

[HTTP://WWW.AA.UIDAHO.EDU/BLDGVITAL/SBSE2001](http://www.aa.uidaho.edu/bldgvital/sbse2001)

## LETTERS TO THE EDITOR

Thanks for sending the Fall 2000 *SBSE News*. I had fun reading it. I especially enjoyed your note under the cover photo about the party with the Taliesin fellows. You're right, it wasn't that much fun! However, I am deeply insulted that there were no full page photos of me, swatting mosquitos or arguing with the other members of my design charette team. Guess I'll have to go to Redfish Lake and try again.

—Wendy Talarico, *Architectural Record*

[I love letters from outraged readers! We'll offer you and all SBSEers another chance for fame at Redfish Lake—read on for details. And work on becoming truly photogenic, ok?—ed.]



You may like to visit our websites for research and educational information. We have Building Energy Efficiency Research (BEER) <<http://arch.hku.hk/research/BEER/>> and Web-Based Learning (for energy efficiency in buildings) <<http://arch.hku.hk/~cmhui/teach/>>. Please give us feedback.

—Sam CMHui, Hong Kong

[For starters your acronym got my attention!—ed.]



I'm working on two books on sustainable solar housing (an analysis of exemplary buildings and a design handbook) with experts from Europe, Canada, Australia, and Brasil. It's fun. I would like to have had an American involved, but U.S. DOE had other priorities. If anyone is interested, he or she would be welcome. Funding can come from wherever you find it, it need not be from DOE. I'm

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*SBSE News* is published quarterly by the Society of Building Science Educators, a not-for-profit corporation. Material for publication should be submitted to Bruce Haglund, Editor; Department of Architecture; University of Idaho; PO Box 442451; Moscow, ID 83844-2451; phone 208.885.6781, fax 208.885.9428; e-mail <[bhaglund@uidaho.edu](mailto:bhaglund@uidaho.edu)>; before the first of March, June, September, or December. Membership and mailing list inquiries should be directed to Terri Meyer Boake, Secretary/Treasurer; School of Architecture; University of Waterloo; Waterloo, ON; Canada N2L 3G1; phone 519.885.1211 x6647; fax 519.746.0512; e-mail <[tboake@cousteau.uwaterloo.ca](mailto:tboake@cousteau.uwaterloo.ca)>. Join the SBSE list server by sending **subscribe sbse** to <[majordomo@uidaho.edu](mailto:majordomo@uidaho.edu)>. Visit our home page <<http://www.polaris.net/~sbse/web/>>. ■

## GREEN COMMITTEE WORK PAYS OFF

In 1991 Provost Warren Vander Hill convened Ball State University's first Green Committee of 14 members representing various academic units. The committee, co-chaired by B. Thomas Lowe and Robert J. Koester, was charged to formulate recommendations to raise environmental consciousness in our student body, foster conviction in students [*are we talkin' penal here?—ed.*], and empower them with understanding how to channel their awareness effectively to shape the future. The result was a December '91 report outlining 35 prioritized activities in 3 categories: (1) immediate networking and follow-through at minimal expense; (2) significant capital investment and/or endowment; and (3) developmental transformation involving structural change. Of the 35 recommendations 20 have been brought to fruition in the last 9 years.

The Green Committee maintained involvement in the "Greening of the Campus" conferences which made it clear that Ball State should participate in University Leaders for a Sustainable Future. As a result, BSU President John E. Worthen signed the Talloires Declaration in April 1999. On its anniversary this year, the Green Committee recommended that the provost revisit BSU's commitments to sustainability. He then appointed 94 university personnel to "Green-2."

This large committee is organized under the structure of the Talloires Declaration into 9 subcommittees and a steering committee. A final report will be delivered to the provost in March 2001. Detailed discussions of all Green Committee work are available at <<http://www.bsu.edu/g2>>.

## CLUSTERED MINORS IN ENVIRONMENTALLY SUSTAINABLE PRACTICES

Two faculty, appointed as CERES Research Fellows during the 1996-97 academic year to study ways to stimulate and foster interdepartmental educational opportunities for students, initiated the concept of a cluster of minors that share common core courses in ecology, environmental economics, and ethics with distributed courses in areas of specialized interest; an anchoring course in a topical zone [*Study abroad in Costa Rica?—ed.*]; followed by a capstone course, ID 400 Creating a Sustainable Future.

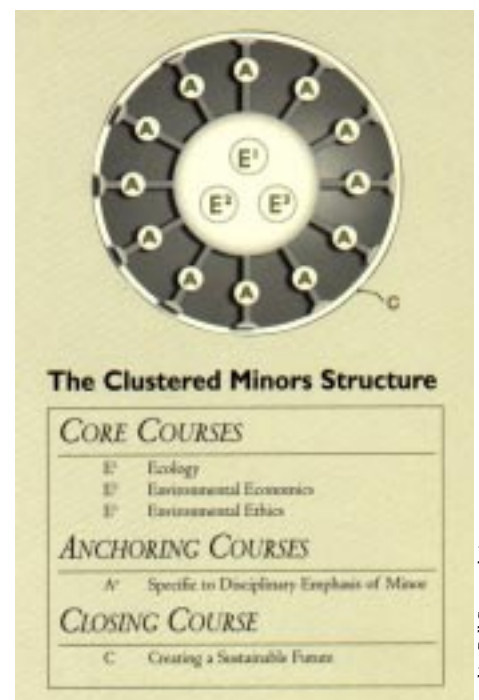
Five clustered minors have been approved—Environmental Policy, Technology and the Environment, Sustainable Land Systems, Environmental Context for Business, and Environmental Context for Healthcare. See <<http://www.bsu.edu/cluster>>. Two more minors are under development—Environment and the Arts and Environment and Communication. These minors reflect participation by faculty and students from six of our seven colleges, including the College of Architecture and Planning. Our remaining task is to fashion one or more minors that would serve the interests of students and faculty in the Teachers' College.

## "GREENING OF THE CAMPUS" CONFERENCES

Since 1996 Ball State University has sponsored a gathering of faculty, students, administrators, facility managers, and other professional staff to examine ways a university community acts as a demonstration model for stewardship of the environment. Each of the three conferences have drawn over 200 participants from more than 30 states and numerous other countries to present papers and participate in workshops on the full range of green campus issues, including curriculum development and reform, facilities management, operational policy creation and management, and faculty-student-staff development. Greening of the Campus IV: Moving to the Mainstream is scheduled for the fall of 2001. A call for papers will be issued later this month.

Proceedings from each of the conferences have been published, and copies are still available. More detailed information is on the Greening of the Campus website <<http://www.bsu.edu/greening>>. ■

—Bob Koester



Ball State has truly reinvented the wheel!

## THE OTHER STUDIO COMPANION

SUN, WIND & LIGHT, 2<sup>ND</sup> EDITION

G. Z. Brown and Mark DeKay

If I were charged to select three books for people interested in teaching themselves the discipline and profession of architecture, Sir Bannister Fletcher's *History of Architecture* would be the first to come to mind—to help visualize how others have designed and built structures for habitation, celebration, and contemplation over the centuries and to stimulate inquiries into why and how buildings are designed and built. *The Architect's Studio Companion* would be a good reference for practical rules-of-thumb. And I would choose *Sun, Wind & Light* to teach the processes architects should use to respect, respond to, and enhance the natural environment during the creative process. These texts should form the backbone of every architect's reference library because together they represent the whole of what we are about.



*Sun, Wind & Light* is an inspirational book. First, its drawings seduce you if you have any inclination toward design, even if you are not particularly interested in the subject matter. The hundreds of sketches, each drawn in the same style seemingly by the same hand, are enough to make a coffee table volume. They draw you into and through the book, page by page. That the same hand did not actually draw all the sketches is a credit to those involved in its execution. Not to have succumbed to the use of digital images to produce a book about technology and the environment is a decision to be commended.

The book's organization and design help those with varying interests, backgrounds, and learning styles glean what they need. Both the beginning architecture student learning to analyze and understand environmental factors and the seasoned professional looking for specific tools to explore a design in an unfamiliar location can find what they need. The concisely-written text and easy-to-understand tools are cross-referenced between different sections of the book. The typography highlights the hierarchies of information presented (with the exception of "bold italics" which could be "key points," "reference materials," or "examples of calculations"). Whether you need a quick reference or want to delve into the details of a strategy, the information is presented in an easy-to-use manner.

In this edition the number of design strategies has increased, as has the depth of material provided for many of the strategies. Consolidating the climate data in one section of the book is one of the major improvements as is the introduction of substantially more information on air movement, daylighting, envelope design strategies, and other uses for natural energy sources such as photovoltaics. One of the better strategies introduced is *20—Shading Periods*, which includes an extensive explanation of how to translate information from a spreadsheet to sun-path diagrams or to sundials so they can be useful tools during the design process.

Like most technical resources published in North America, the bulk of the climate data in *Appendix A* is for the contiguous 48 states. Recognition of the remainder of North America is provided through minimal references in *Appendix B* although, increasingly, our academic programs and practices reach far beyond our borders. The challenge is for all of us to continue to seek opportunities to produce resources that include all the world's environments and cultures.

The novice user will never know the foundation for the bioclimatic plots is the psychrometric chart nor learn the wonders of using them to help solve heating and cooling problems that arise in design. The maps in *Appendix A* do not include latitude and longitude lines, perhaps to ensure clarity of the images (but this gap does not help the reader who is not sure whether Phoenix and Flagstaff are in the same climatic zone). Tabulated information does not consistently reference source material that would be helpful to those seeking additional data, but the index references specific strategies presented in the text. For those itching to surf, the bibliography includes references to Internet sites.

Brown and DeKay are to be commended for updating this handy, inspirational text for architects and engineers to use in academe and practice. It is up to us to introduce it to our students and to use it in our practice so the architecture we create reflects our responsibility to our earth and each other. ||

—Kathryn T. Pignore

## LETTERS [CONTINUED]

not searching for a U.S. participant, but one would be very welcome. The person/s have to secure their own financing to travel to expert meetings (mostly in Europe) and must do some work within the framework of the program. I will gladly e-mail the Annex Statement to any interested person. The benefit is working with experts from leading research institutions, universities, and private companies in the field of sustainable solar housing. An individual will be credited by name, e.g., as a chapter author.

—Robert Hastings, AE & E

[Contact Robert at <[robert.hastings@freesurf.ch](mailto:robert.hastings@freesurf.ch)> if you're interested.—ed.]



I'm happily exhausted! The triplets are several hands full—check out our website at <<http://www.guyerb.com>>. I'm having the six-month mommy crisis, however, which led me to contact WSU's Interdisciplinary Design Institute looking for part-time work until I resume my full teaching duties.

—Judy Theodoreson, WSU

[An exclusive SBSE News reader update: Judy named babies A, B, & C Alec, Cole, and Jack. Bruce, not Jack, begins with a "B".—ed.] ||



Judy and Cole, a sample of the Diego Rivera-inspired art on their family website.

photo: Guy Erb

## NEW EDITION OF HCL

The second edition of Norbert Lechner's *Heating Cooling Lighting: Design Methods for Architects* (John Wiley and Sons) is now available. It has new chapters on energy-related sustainable design and building-integrated photovoltaics. The discussion of psychrometrics has been expanded with sidebars to introduce basic formulae and mathematical examples. Foster's Commerzbank and Van der Ryn's Real Goods Solar Living Center are among new detailed case studies. Appendices now include elevational sun-path diagrams, a solar site analysis tool, and an extensive list of resources. Examination copies are available for course adoption consideration by calling Jolene Howard at 212.850.6579. ||

—Norbert Lechner

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**SBSE PEOPLE**


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★ Congratulations to **G. Z. "Charlie" Brown** who was honored by ARCC with the Haecker Award for significant contributions to architectural research.

🐟 On sabbatical leave at Cal Poly Pomona, **Tang Lee** gets to live at the Center for Regenerative Studies, mingle with staff and students, and eat the food they grow. He's there as a tilapia expert to help with the fish farm.

🏠 **Sandra Mallory** has left academia for the architecture firm, Environmental Works, which started as a community design center and now has both nonprofit and for-profit components. Their focus is on community-oriented projects (low-income housing, community centers, child care) that integrate sustainability.

👨 **Jonathan Reich** and **Sandy Stannard** are moving on to Cal Poly San Luis Obispo beginning winter quarter.

🏠 **Marc Schiler** has been promoted to full professor at USC.

🏠 **Veronica Soebarto** has been promoted to Senior Lecturer (tenured) at Adelaide. She also serves as ANZASCA Secretary.

✚ **Frank Sun** is teaching at the University of Hong Kong where there has been great interest in environmental technology. He's recruited faculty members **K. P. Cheung** and **Sam C. M. Hui** for SBSE.

🏠 Though still a contributing editor at *Architectural Record*, **Wendy Talarico** is working at home full-time for the webzine, DesignArchitecture.com, as a consultant in website creation. She also dreams of teaching technology and sustainability.

☆ The fall 2000 issue of *Connector* was an unqualified success! Congratulations to new editor, **Christine Theodoropoulos**, and all her collaborators at the University of Oregon and around the world. ■



photo: Alison Kwok

Alison Kwok turned into a HOB0 while Jim Wasley was on sabbatical at Oregon for fall term.

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**POSITIONS GALORE!**


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[Wow! There're so many environmental technology-related positions available that I've had to edit the announcements to the basic information—responsibilities and contact info. You'll have to pursue the hot links to find out more about them.—ed.]

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**AMERICAN SOLAR ENERGY SOCIETY**


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Executive Director to lead 3,000 members, 5 staff, 22 chapters, numerous contractors, and a budget of over \$1 million. Required: communications and interpersonal skills, management experience (nonprofit preferred), an avid interest in renewable energy, fundraising experience, and a strong history of leadership. For more information visit <<http://www.ases.org/about/employment/index.html>>. Compensation commensurate with qualifications. Send cover letter, résumé, 3 references, and salary requirements to Chair, Search Committee; American Solar Energy Society; 2400 Central Ave. Suite G-1; Boulder, CO 80301; <[ckutscher@ases.org](mailto:ckutscher@ases.org)>. Applications in by December 15, 2000, receive full consideration—late applications may be considered until the position is filled. AA/EOE.

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**ARIZONA STATE UNIVERSITY**


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Associate or full professor in architecture and building design, beginning fall 2001. Candidates must demonstrate excellence in teaching and research/creative activity in building environmental science. Desired qualifications include a strong record of collaboration in projects integrating design and principles of environmental science and building systems as well as research related to issues of energy and urbanism in extreme climates. M.Arch. required; doctorate in related area desired. Include letter of application stating research plans and teaching interests; curriculum vitae; unofficial graduate school transcripts; names, addresses, fax, telephone numbers, and e-mail of four professional or academic references; and samples of teaching and research/creative activity. Applications will be reviewed January 15, 2001, or every two weeks until the position is filled. Building Environmental Science Search Committee; School of Architecture; Arizona State University; P.O. Box 871605; Tempe, AZ 85287-1605. AA/EOE.

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**CAL POLY SAN LUIS OBISPO**


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Assistant/Associate professor, full-time, tenure-track 2001-02 academic year in Environmental Control Systems with additional teaching in architectural design, practice, computer applications, visual communications, and/or elective courses in area of expertise. Minimum qualifications: professional degree in architecture; master's degree in architecture or allied discipline (M.Arch. first professional degree acceptable); experience in the profession; architectural registration and/or doctorate; and related college-level teaching experience. All application materials must be received by January 15, 2001. Margot McDonald, AIA; Associate Professor; Architecture Department; Cal Poly; San Luis Obispo, CA 93407; phone 805.756.1298; fax 805.756.1500. AA/EOE.

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**JUDSON COLLEGE**


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Assistant or associate professor, full-time, tenure-track position beginning Fall 2001. We are seeking candidates who provide expertise in the areas of environmental technology, ecological design, and/or architectural design studio. Applicants should possess M.Arch. or higher academic degree with either strong teaching experience or qualifications that indicate significant potential for sustained outstanding research/creative activity and teaching. Architectural registration is preferred. Send your résumé, a brief portfolio, and a short statement of your Christian faith and its integration within the liberal arts and architectural discipline to: Jack A. Kremers, Chair; Department of Architecture; Judson College; 1151 North State St.; Elgin, IL 60123; <[jkremers@judson-il.edu](mailto:jkremers@judson-il.edu)>.

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**NEW JERSEY INSTITUTE OF TECHNOLOGY**


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Assistant or associate professor of architectural technology and design. Required: Master's degree in architecture or engineering and a professional license; record of achievement in practice and teaching or research in an area of architectural technology such as building structures, construction, or environmental control systems. Experience with the integration of computer-based applications in the architectural design process is essential. The successful candidate will take a leadership role in the technology area of the curriculum and will work with design studio coordinators to enhance the connection between design and building technology. As a technological university, NJIT offers multiple opportunities for funded research within and across disciplines. Send letters of interest, curriculum vitae, and list of three references to NJIT; Personnel Box: NJSOA-AAP/ATR; University Heights; Newark, NJ 07102; <<http://architecture.njit.edu/>>.

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## POSITIONS GALORE! [CONTINUED]

### SIEBEN ENERGY ASSOCIATES

Independent, innovative Chicago-based energy management firm seeks energy engineers with electrical, mechanical, and/or architectural experience. Duties include comprehensive facility energy audits of HVAC, envelope, and lighting systems; utility and financial analyses; building retro-commissioning; technical research and writing; presentations to clients. Additional duties may include development and implementation of strategic energy management programs, utility deregulation planning, and energy-efficient design assistance. M.S. or B.S. with 1-3 years' experience and excellent written and oral communication skills required. Fax résumé and cover letter to 312.828.0755 or <sea@siebenergy.com>. No phone calls, please.

### UNIVERSITY OF CALIFORNIA BERKELEY

Assistant professor in architectural design, beginning Fall 2001. Responsibilities include studio instruction at both the graduate and undergraduate levels as well as seminar, lecture, or workshop courses on related subjects. Candidates with interests and experience in the making of buildings, including careful exploration of materials and construction processes, will be particularly welcome as will those who use the computer in conceptualizing, designing, and making buildings. In addition to teaching, the successful candidate is expected to engage in creative work such as active practice, research, and publication. Required: M.Arch. or an advanced post-professional degree in architecture, with experience in teaching at the university level, practice, and/or research and a demonstrated ability to publish and disseminate the outcome of their work. Send applications, including a letter stating teaching interests, a non-returnable portfolio of no more than 20 pages, and the names of three references by 4 February 2001 to Charles C. Benton, Chair; Department of Architecture; 232 Wurster Hall #1800; University of California; Berkeley, CA 94720-1800; <crisp@socrates.berkeley.edu>; <http://arch.ced.berkeley.edu>; <http://titan.chance.berkeley.edu/fea/>. EOE/AA.

### UNIVERSITY OF KANSAS

Two full-time, tenure-track positions (assistant or associate professor) beginning August 2001. Design studio and building technology or sustainable design. Required: Professional degree in architecture and a post-professional degree in architecture or related field; professional experience or scholarship in an area of building technology, ecological design, sustainable design, or renewable resources; and the ability to lecture in an area related to building technology or sustainable design issues and teach in a design studio setting. Preferred: Professional registration, the ability to develop external funding opportunities, and the ability to use digital design technologies. Screenings begin January 16, 2001, and will continue until the position is filled. Application materials include a letter of application, résumé or curriculum vitae, contact information for three references, portfolio of professional and students' work. William Carswell, Chair; School of Architecture and Urban Design; University of Kansas; 205 Marvin Hall; Lawrence, KS 66045; phone 785.864.4365; fax 785.864.5185; <jwc@ukans.edu>; <http://www.arch.ukans.edu>. EOE/AA.

### UNIVERSITY OF OREGON

Three to four positions (assistant or associate professor) beginning Fall 2001. Review of applications is underway and will continue until suitable candidates are identified. Qualifications: Terminal degree in architecture or related field; potential to engage integrative, scholarly work; prior teaching experience desirable; professional practice experience an asset. Nancy McNaught; 541.346.1435, <mnaught@darkwing.uoregon.edu>, <http://arch-uo.uoregon.edu/people>, or Faculty Search Committee; Department of Architecture; School of Architecture and Allied Arts; University of Oregon; Eugene, OR 97403-1206. EOE/AA.

### UNIVERSITY OF PENNSYLVANIA

Assistant or associate professor beginning Fall 2001. Construction or environmental systems, as well as architectural design. Technology teaching will take the form of required and elective courses taught as lectures and seminars. Applicants must demonstrate a commitment to research and scholarship. Applications will be reviewed beginning November 1, 2000, and continue until the position is filled. Send a letter of interest, curriculum vitae, examples of research and scholarship (published or unpublished), and the names and contact information for three professional and academic references. Send applications, nominations, and inquiries to Professor Peter McCleary; Chair, Search Committee; Department of Architecture; Graduate School of Fine Arts; University of Pennsylvania; 207 Meyerson Hall; Philadelphia, PA 19104-6311; <www.upenn.edu/gsa>. EOE/AA. █

## STUFF THAT'S OUT THERE

### HIGH-PERFORMANCE BUILDINGS

A Technology Roadmap <http://www.eren.doe.gov/buildings/commercial\_roadmap> describes "a 20-year industry plan for commercial buildings" that "outlines a plan to integrate research, development, and deployment for the next generation of commercial buildings" and contains a link to DOE's High Performance Buildings website which has several well-documented building examples. *Energy User News* (Nov. 2000, page 8) claims "DOE has made available a CD-ROM describing the Zion Visitor Center, 4 Times Square, and a number of other energy-efficient buildings." I have been unable to find out how to obtain this CD or even verify its existence. Does anybody out there know more about it?

-T ruett J ames

### SUSTAINABILITY SOFTWARE

BEES 2.0 Windows-based software "brings to your fingertips a powerful technique for balancing the environmental and economic performance of building products." Read about and download software at <http://www.bfrl.nist.gov/oea/software/bees.html>. Also available on CD with printed manual, available through the EPA Pollution Prevention Information Clearinghouse by calling 202.260.1023 or <ppic@epamail.epa.gov>.

-T ruett J ames

### VENTILATION SOFTWARE

When searching for user-friendly, quick-to-learn software for modelling cross-ventilation and stack ventilation that will help students design window openings or stack chimneys (mainly for controlling air changes and room temperature), I contacted the BRE (Building Research Establishment) in the U.K. and was advised of *Nitecool*, a program that's downloadable from <http://projects.bre.co.uk/>. I haven't yet had the chance to test it, but it sounds excellent. *[I tried it, but could only produce the infamous 'run time error.' Nice website though.-ed.]* █

-S imone M edio

## RESEARCH AND INQUIRY

### SIMULATION CURRICULUM PROJECT

Several weeks ago Jeff Haberl, Texas A&M, began a series of conference calls about developing curriculum material for simulation courses. During two conference calls (a third is scheduled for Dec. 13) several SBSEers helped define the problem, establish the level of work needed, and survey existing curricula. SBSE's long involvement in curriculum development and case study generation for Vital Signs offers important precedents.

Since there is currently no funding for this project, we will build on existing work and depend on voluntary efforts. We'd like to hear from anyone who has well-documented case studies with simulation data (the simulation model is open—from my brief survey, the three top models being used by SBSEers are ENERGY10, SOLAR-5 and DOE2). We are hoping that some type of formal proposal emerges from this work. Dru Crawley at DOE is interested in new building simulation curriculum material. If you would like to participate in our next conference call, contact Jeff at <JHaberl@esl.tamu.edu>. Dru has set up <[http://energy.nrel.gov/buildings/energy\\_tools/education/](http://energy.nrel.gov/buildings/energy_tools/education/)> with information on the Simulation Educators' Web Forum and the notes from our previous conference calls.

—H arvey B ryan

### SOLAR ENVELOPE INTERSTITIUM

Ralph Knowles and Pierre Koenig are directing research in the USC School of Architecture's Natural Forces Laboratory. Their aim is to test the interstitium of the solar envelope, the changing space between the low winter and higher summer envelopes, as a flexible shield against climatic extremes of sun and wind in courtyard buildings. The study involves twenty students working in teams to devise flexible structures that may expand and contract, grow and decay in response to seasonal variations. Laboratory equipment includes a sun machine, wind tunnel, and computer for simulation studies. ■

—R alph K nowles

## BUILDING SIMULATION 2001

BS2001 will be held in Rio de Janeiro, Brazil, August 13–15, 2001. Full details of the conference may be obtained at <<http://www.labee.ufsc.br/bs2001/>>. Building Simulation 2001 will be the 7th biennial conference of IBPSA, the International Building Performance Simulation Association. ■

## INTERNATIONAL CONFERENCE REVIEWS

### SUSTAINABLE BUILDING 2000

#### SB2000, Maastricht, the Netherlands, October 22–25, 2000

SB2000 attempted to build on the highly successful Green Building Challenge '98 conference, but was not quite up to the task. Although about 850 people attended and all the critical issues were addressed, the conference organizers operated in a far too laid-back fashion. The proceedings were poorly organized (no uniform format), many papers were missing (84 of 328 were not included), and sessions ran over or did not start on time. The green building comparisons were significantly de-emphasized compared to their role in Vancouver. The networking was great, and from what I could gather the Europeans are about a decade ahead of Americans. Europeans seemed primarily concerned with Life-Cycle Analysis models (LCAs), several of which were presented [ECO-QUANTUM (Dutch), ECO-BUILD (Norwegian), and ENVEST (British)]. Point-based rating systems were considered anachronistic by most—the reason that U.S. Green Building Council's LEED program got a big yawn. As one Dutch attendee put it, "How can we respect anything coming from a country that is about to elect a former oil company executive as president, will not ratify the Kyoto Treaty, and has put forward impossible conditions for ratification that would collapse the Hague conference on global warming (which in fact did happen last month)?" It was not easy to counter someone living in a country with half of its land area below sea level and whose newspapers run global warming stories daily. I was struck by the level of environmental knowledge that many Europeans displayed, even those I met in non-conference settings.

SB2000 did have its moments. I was impressed by several presentations by representatives from developing countries. It seems that many of the sustainable technologies that work in the West do not work in developing countries. I believe most of those attending SB2000 felt it a worthwhile conference, and organizers are already planning the next conference which will be held in Oslo, Norway in Fall 2002. I hope the Norwegians took good notes on what not to do. The printed proceedings cost 115 Euros (about \$100) and can be ordered from <<http://www.aeneas.nl>>. A CD with the papers (hopefully all of them), all the GBC case studies, and the GBC Tool Software will be available by January. Since so many papers are missing from the published proceedings, wait and order the CD.

—H arvey B ryan

### NEW TECHNOLOGIES IN ARCHITECTURE

#### The First International Symposium on New Technologies in Architecture: Digital Design and Manufacturing, Harvard Graduate School of Design, October 27–29, 2000

There were about 135 attendees at the conference, of which 46 were associated with the GSD. Architects, manufacturers, software developers, and CAD/CAE/CAM (CDEM) equipment industries were represented. The proceedings may be posted on the conference website soon.

The basic proposition advanced CDEM as enhancing design through direct fabrication, mass customization, component prototyping, and team collaboration. The Finnish government, <<http://www.cic.vtt.fi/vera/english.htm>>, represents 5 million people but is investing US\$36 million in CDEM. Benefits would include:

- Design of sophisticated forms unavailable from suppliers or custom fabricators
- Full-scale and reduced-scale mock-ups
- Accuracy and tolerances in the range of 0.001 inch
- Reverse engineering by use of 3D digitizing
- Enhanced collaboration with associated trades
- Simulation of physical integration in 3D or what is referred to in software as "interference."

CDEM means "Cutting 50-ft.-long metal parts with 0.001 inch accuracy at 70,000°F or using water jets at 60,000 psi to cut metal up to 8-in.-thick ..." Bruce Gitlin, Milgo Bufkin Fabricators.

**Friday.** Keynote speaker, Robert Abarbanel, Advanced Systems Group Manager for Boeing, presented the *FlyThrough* software developed for the 100% digital design of the Boeing 777: Three Million Megabytes Flying in Close Formation.

**Saturday.** Chris Mercier, Project Architect, Frank O. Gehry Associates presented the cafeteria design for Condé Nast <[http://www.ctek-on-line.com/conde\\_nast\\_project.htm](http://www.ctek-on-line.com/conde_nast_project.htm)>. "Our projects are too complex

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## INT'L CONFERENCE REVIEWS [CONT.]

to draw by hand." This building is also known as Four Times Square [*Is the answer, 16 times?—ed.*] (Fox Fowle, Project Architect; Steven Winter Group, Design Architect). For the first time ever it houses the entire collection of Condé Nast magazine publications whose separate identities had been strong and fiercely maintained. The cafeteria was seen as a potential gathering point for creating social harmony among the diverse publication staffs. Presentations by the fabricators for the cafeteria filled the rest of the morning. Reps from C-Tech (warped, annealed, laminated glass), Ziba (glass partition mounting system), and Permasteelisa (warped and seamed titanium steel partitions) discussed their challenges and collaborations. "My first challenge was to price this project," Alberto de Gobbi, Permasteelisa, asserted.

The lunch speaker was Christopher Barry of the U.S. Coast Guard Boat Engineering Branch. Naval architects have been aggressive about CDEM for sometime, like their counterparts in the aerospace and automotive industries. Shipyards no longer loft boats by drawing full-size hull sections on the loft floor. They simply engineer "fair" hulls (continuous second derivative surfaces) and send the sections and unfolded ruled surfaces to CNC machines. They now build better boats faster with a 20% cost savings. Automobile manufacturing was discussed but not formally presented. The design of a new car entails design of an assembly sequence and therefore the design of the robotics which in turn means design of the factory itself. In movie parlance the architect shifts roles from director to producer. There will be a revised notion of design tempo and feedback loops. Format: design workshops will be an alternative to architectural design studios.

The Saturday afternoon sessions and panel as well as the Sunday morning gatherings were less coherent. Notable among these presentations was Martin Becthold's dissertation, *Complex Curved Roof Forms in Wood*. Martin described the design of structural shapes and domes on an integrated foam insulating formwork. The form is responsive to the funicular shape of loads. The plywood laminations are oriented according to stresses. Voids are left in the foam for services. I think he is stuck on the sectioning and reconnecting of the resulting panels. If you use ribs to reconnect them, why have a stress skin? Kevin Rothoroe, Freeform Inc., discussed 3D printing in direct metal deposition for structural tubular armatures. These forms would be "welded up out of nothing" in varying thicknesses of different alloys simultaneously. He cited the quantum cloud sculpture at the millenium dome and aircraft fuselages as prime candidates. "Problems of form. Problems of syntax. Problems of invention ... without which the discipline atrophies."

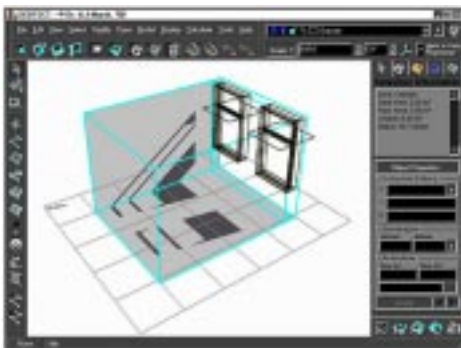
—Leonard Bachman

### ANZASCA 34

**The 34th annual conference of the ANZAScA (Australia and New Zealand Architectural Science Association), Adelaide University, Adelaide, South Australia, December 1-3, 2000**

The papers presented covered the areas of architectural science education, thermal performance analysis, simulation/modelling, building construction, sustainable design, and case studies. Conference participants were largely the ANZAScA members, plus a number of delegates from Japan, Hong Kong, and the U.S. (SBSEer Dale Brentrup from UNC Charlotte). Other SBSEers were Werner Osterhaus, who, at the end of the conference, was elected ANZAScA President (Congratulations, Werner!), and me.

Among several interesting topics were a number of papers on the issue of "theory" (which sometimes becomes "myth") vs. "practice," in dealing with sustainable design. The reductionist approach, often taken in (architectural) scientific research, was criticised as it doesn't reflect what is actually happening in architectural design processes nor reality in general (surprise, surprise!). Instead it was shown that a more holistic approach, which includes considering the issues related to people (cultural background, preference, and lifestyles), must be taken. Another compelling presentation was by Andrew Marsh, University of Western Australia. He demonstrated *Ecotect*, a "complete" environmental design tool <<http://www.squ1.com>>. In my opinion, it is **the** computer program for this



ECOTECT v1.0 user interface, showing internal sun penetration.

• continued next column

## A BIRTH

Here is the deepest secret nobody knows  
here is the root of the root and the bud of the bud  
and the sky of the sky of a tree called life;  
which grows higher than soul can hope  
or the mind can hide  
and this is the wonder that is keeping the stars apart

Kaya Lane Olgyay  
November 25, 2000, 4 p.m.  
Boulder Community Hospital  
6 lbs.-4 oz., 20" long

Live in reverence of the earth,  
and wonder of being part of her. ||

—Victor Olgyay



Kaya Lane Olgyay of Boulder, Colorado

photo: Victor Olgyay

## INT'L CONF. REVIEWS [CONT.]

purpose; it is friendly to students and designers early in the design process. And it's in SI units!

The memorable conference dinner was in an old earth-berm cellar of Hardy's Winery, one of many great wineries in South Australia. The food was great, and the servers kept pouring the wine, which made it quite difficult for me to get up for my 9:30 paper presentation!

Conference proceedings are available on CD-ROM for AUS\$65 from <[anzasca2000@arch.adelaide.edu.au](mailto:anzasca2000@arch.adelaide.edu.au)>. The conference program can be seen at <<http://www.arch.adelaide.edu.au/~anzasca2000>>. ||

—Veronica Sobarto

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## THANK 'EM OR BLAME 'EM

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photo: Walter Grondzik

Dan Williams, Walter Grondzik (standing), Sandra Mallory, Sandy Stannard, Harvey Bryan (seated), and Alison Kwok (not pictured) served as paper reviewers for Solar 2001. [Alison is, however, featured on p. 4.-ed.]

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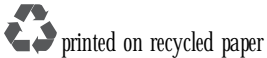
## INSTRUMENTS NOW DO MORE FOR LESS

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The Vital Signs Project has stimulated the development of methods for using instrumentation to help students understand how buildings and sites interact with environmental forces. Over the last five years I developed curriculum improvements using Vital Signs teaching resource packages dependent on the \$25,000 Vital Signs toolkit. Could a low-cost alternative be developed? Yes, an awesome instrumentation package can be assembled for less than \$3,000!

Raytek MiniTemp MT4 Infrared Thermometers [to measure surface temperatures of building and site materials] < <a href="http://www.flw.com/raytprod.htm">http://www.flw.com/raytprod.htm</a> > 831.458.1100	3@ \$99	\$297
Hobo Temperature/Relative Humidity Loggers [to collect indoor and outdoor climate condition readings] < <a href="http://www.onsetcomp.com">http://www.onsetcomp.com</a> >	9@ \$85	\$765
Kestrel 3000 Pocket Weather Meter [to measure instantaneous airflow speed and direction over sites and in buildings as well as temperature and relative humidity] < <a href="http://www.nkhome.com">http://www.nkhome.com</a> >	3@ \$159	\$477
Forestry Suppliers Digital Sound Level Meter [to detect noise problems on sites and in rooms] < <a href="http://www.ForestrySuppliers.com">http://www.ForestrySuppliers.com</a> >	3@ \$239	\$717
Olympus D-340L Zoom Digital Camera + AC Adapter [to record site and building features] local camera shop	2@ \$299 + \$30	\$628

-Bruce Haglund



SBSE NEWS  
C/O BRUCE HAGLUND  
DEPARTMENT OF ARCHITECTURE  
UNIVERSITY OF IDAHO  
PO BOX 442451  
MOSCOW, ID 83844-2451

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## SPRING ISSUE SUBMITTAL DEADLINE—MARCH 1

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