

SOCIETY OF BUILDING SCIENCE EDUCATORS SBSE NEWS

SPRING 1999



photo: Terri Meyer Boake

Does Canada harbor more sustainable buildings than the Eva Matsuzaki and Jim Wright-designed C. K. Choi Center at the University of British Columbia in Vancouver?

TADOUSSAC RETREAT SET—SPACE AVAILABLE

During the closing days of June, SBSEers will retreat to Tadoussac, Québec, a site whose intriguing beauty will enhance our ponderings and musings. Tadoussac is situated at the confluence of the Saguenay Fjord with its steep cliffs and the mighty St. Lawrence River, which at this point in its march to the sea has an astonishing 15-mile girth. This junction creates a very special microclimate favoring marine life, particularly whales; the whale watching is spectacular! The eastern border of Tadoussac adjoins an amazing geological formation of incredibly high, steep sand dunes (famous for sand-dune skiing—come prepared). We may also enjoy the seemingly endless trails leading up the fjord or down the St. Lawrence shoreline, including wide expanses of beaches nestled between rocky cliffs. Numerous excellent restaurants, bakeries, patisseries, shops, as well as cafés with terraces overlooking the seaway lie within walking distance.

CASTING REFLECTIONS ON MEASUREMENT

In order to fully appreciate the locale's offerings, we will cast our reflections in thematically rooted sessions [*as opposed to last year's shadows cast into giant kivas?—ed.*] on the topic of *Measurement*. As is well-known, estimating or computing the value of physical and social phenomena is fundamental to everyday activities as well as to diverse bodies of knowledge. For this reason the elements, conditions, limitations, and theoretical foundations of measurement have engendered many debates. We will engage in four successive, related sub-themes, hosted by our colleagues.

MEASURING SUSTAINABILITY

The ever-curious [*How do you mean 'curious?'—ed.*] Bruce Haglund will seek active participation and lively discussion aimed at the Measurement of Sustainability. He will ask his colleagues to frame sustainability in terms of the new physics, to recognize how buildings are part of a more complex and interdependent system beyond the limitations of Cartesian analysis. We will wade through the deep waters of relativity and chaos theory and surface with a re-defined concept of sustainability. While both Green Building Challenge attendees and classroom veterans should be well-equipped

SBSE CALENDAR

1999

- Apr 15-18 HOPES Eco Design Arts Conference; Eugene, OR
- Jun 12-16 ASES Solar '99; Portland, ME
- Jun 16 SBSE Annual Meeting; Portland, ME
- Jun 19-23 ASHRAE Conference; Seattle, WA
- Jun 25-27 ACSA Technology Conference and ARCC Research Conference; Montréal, Québec
- Jun 27-30 ACSA Construction Institute; Montréal, Québec
- Jun 28-Jul 1 SBSE Retreat; Tadoussac, Québec
- Sep 18-26 PLEA 1999 Conference; Brisbane, Queensland ■

ANNUAL BUSINESS MEETING

The SBSE Annual Meeting will be held at noon on Wednesday, June 16, 1999 at the ASES Conference in Portland, Maine. In addition to normal business, the slate for our next election will be set. Think about volunteering or nominating a soon-to-be former friend for president-elect or secretary/treasurer. ■

LETTERS TO THE EDITOR

I've made the very difficult decision to leave the University of Oregon at the end of the academic year in June. After long and careful consideration, I realize that in the long term I cannot thrive away from the land, skies, and, yes, sunshine, of my native New Mexico and the intermountain west. Those of you who attended last summer's retreat know what I mean.

It will be very difficult to leave the stimulating environment created here by the students and faculty at the UO. I've been honored by the opportunity to work with such dedicated and supportive colleagues. In particular, the steady guidance and constant support of John Reynolds has been the sunlight that has brightened many a gray Eugene day, and I couldn't ask for finer colleagues than Charlie Brown, Ginger Cartwright, and Alison Kwok. I joined this faculty with many hopes and expectations, and they have all been fulfilled or exceeded.

My intermediate step will be to return to Sausalito to continue my work with Van der Ryn Architects, try to walk-my-talk, and gain the experience I need if I'm to be the teacher I wish someday to become. I hope to return to teaching in the not too distant future, closer to home.

—Rob Peña, Oregon

[Rob, you can stop teachin', but you can't stop bein' an SBSEer. Can you say, "Tadoussac?"—ed.]



• continued next page

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GREEN BUILDING CHALLENGE RETROSPECTIVES

SBSE was well represented at the Green Building Challenge in Vancouver last October. In addition to the SBSE slide archive meeting and dinner, we recruited new members and established new contacts with Canadian faculty. The event was a virtual Olympics of Green Building Practices. Fourteen international teams joined in a spirit of cooperation to define criteria for green building assessment as well as simultaneously assessing the evaluation tool. Only Ray Cole could pull off something of this magnitude.

While I was impressed with the international data and idea exchange, I was disappointed that only the UK mandated that buildings analyzed for the GBC were built, occupied, and post-occupancy evaluated. Clearly, GBC 2000 presents an opportunity for adding post-occupancy evaluation or conducting a companion physical assessment (in the spirit of Vital Signs) for each case study. I invited Ray Cole to join us again at the SBSE Retreat in Québec this summer. Perhaps we can have some input for the next round.

For those of you interested in the GBC, there will be a CD-ROM of the case study building posters sent to attendees. (Non-attendees may order copies from <<http://greenbuilding.ca>>. [I just checked, to no avail. They promise these will be ready in late March.—ed.] And there is a slide set which will be added to the SBSE archive pending approval of funds.

—Margot McDonald

[Terri Meyer Boake agrees with Margot's points about SBSE attendance, conference success, and the need for physical assessment but adds the following notes.—ed.]

Although there was a significant number of SBSE members at the conference, I felt a distinct lack of presence and participation by the education community. Of the ten schools of architecture in Canada, over half were not represented. I would venture to say that U.S. representation was the same or worse. It is still disturbing to see the lack of interest in sustainability shown by so many architecture schools. It is also disturbing that the conference organizers (and the government regulatory bodies involved in creating this event) showed so little interest in ensuring that architectural education be engaged in this important endeavor.

I'm dismayed that I learned of so many simulation and energy-related software programs being developed or marketed by the Canadian government of which I have no copy (nor previous knowledge). As an educator, I am not given beta versions nor free or discounted copies of software and codes as they are released. All must be purchased out-of-pocket. Don't they realize that my teaching is the only chance my students have to be exposed to the ideas of green building, energy conservation, and sustainability? If not taught, more "problems" graduate into the workforce. If our governments are as serious about reducing CO₂ emissions as they boast, we should all encourage them to back our teaching endeavors by stocking our labs with current references and software. ■

—Terri Meyer Boake

CALL FOR SUBMISSIONS

The *Journal of Architectural Education (JAE)* is soliciting submissions on *Technology and Place*, co-edited by Kenneth Frampton of Columbia University and Steven Moore of the University of Texas. We propose that technological choices are political choices that influence material conditions and social settings. For example, authors might investigate the political content of local and/or globalized construction practices, the philosophical relation between technological means and aesthetic ends, or the social and environmental impacts of specific construction practices. Direct inquiries to Steven Moore; School of Architecture; Goldsmith Hall; The University of Texas at Austin; Austin TX 78712-1160; phone 512-471-0184; or e-mail <samoore@mail.utexas.edu>. Submissions should conform to the "Guidelines for JAE Authors," as published in *JAE* 52/1 (Sept. 1998), and be received prior to August 1, 1999, by the managing editor, Howard Smith; PO Box 29276; Los Angeles, CA 90029-0276; e-mail <hsmith@usc.edu>. ■

—Steven Moore

TADOUSSAC [CONTINUED]

to engage in fertile speculations, Bruce will prepare a reading list and short reader. *[Hint: View IQ and Mindwalk to prepare! Wahoo!-ed.]*

MEASURING TEACHING EFFECTIVENESS

The landlocked, but tireless, crew of Charlie Brown, Paul Clark, Mark DeKay, and Lance LaVine will lead discussions on Measuring Teaching Effectiveness. They will ask if our students actually learn what we think they are learning. We'll discuss the relative merits of principle-based knowledge, application-based knowledge, attitudinal changes, the long-term residual effects of various teaching strategies, as well as values of computer-modeling vs. hand calculation. Charlie, Paul, Mark, and Lance will share their research efforts in evaluating students who have used *Energy Scheming*, measuring students' energy knowledge, attitudes about energy in design situations, and abilities to apply energy knowledge. Some of the conceptual groundwork set forth in Bruce's discussion will extend to this session. The team's discussion will further shape this foundation, constructing evaluation measures for advancing building science education.

MEASURING DESIGN/TECHNOLOGY INTEGRATION

Eric Angevine will lead a discussion regarding the Measurement of Integrating Technology with the Design Studio Environment. Eric will ask us to define what changes in the architectural curriculum and/or the NAAB requirements would produce a measurable improvement in student understanding or retention of technological issues. This energetic and humorous commentator will give a new twist to this open-ended question by sharing his dissertation research findings that correlate success on the ARE with the style of technology instruction. Clearly this discussion follows and extends aspects of the previous exchanges, aiming to clarify and enhance the relation between building science education and practice.

MEASURING THE PATH TOWARDS TEACHING EXCELLENCE

A final, all-encompassing session will be led by the venerable John Reynolds. He will initiate a discussion on the Measurement of the Teacher's Path. John will ask what brings the building sciences to *life* in the eager minds and souls of our students. Given that the better stories and activities make the most indelible imprint, JR requests participants come prepared to share their stories, myths, and occasional lies about what works and, for certain, what doesn't. Here, the tricks of the trade will be exchanged in terms of anecdotes, tales, slides, reading lists, film picks, and selected mementos. This discussion/roast/pageant will further equip us to better steer our students towards valuing a sustainable building practice, one where design and technology are always well integrated.

The Retreat has been planned to accommodate our participation at the ACSA/CIB/SBSE/ARCC Conference in Montréal. On Sunday, June 28 conference participants may take the train from Montréal to Québec City for an overnight stay within the walls of the lovely old city. The next morning the hotel's ferry leaves for Tadoussac at 7:30 a.m., serves breakfast en route, and provides opportunities for whale watching before its noon arrival at L'Hôtel Tadoussac. The Retreat officially begins on Monday evening with dinner and cheer at the hotel. On Tuesday and Wednesday, discussion groups will gather at diverse sites to fully sample the locale's offerings. The Retreat concludes on Thursday, July 1 at 2:15 p.m. with the ferry ride back to Québec City. As the ferry arrives in Québec City at 4:30 p.m., some may decide to stay overnight to participate in the joyful festivities of Canada's Independence Day celebrations before heading home.

So, what are you waiting for? A few spaces are still available; come join our engaging speculations and revel in Canada's glorious offerings. For more logistical information see the winter issue of *SBSE News* or contact Paul Clark <clark@vt.edu> to enroll. ■

- Paul Clark

LETTERS [CONTINUED]

I was overwhelmed by all the responses to my urgent broadcast of last month concerning the proposed deletion of the daylighting section from ASHRAE 90.1R. The cc's I received showed a real level of effort on everyone's part. I think ASHRAE will have to respond positively. I will follow up on how 90.1R responds to our concerns and will keep everyone posted.

For the last several years I haven't been as active in SBSE activities as I would like, so it was really a pleasure to see all your responses. What a great organization we have!

- Harvey Bryan, *Free Agent*

[Old SBSEers never go away, they just continue to raise hell.-ed.]



Oooops . . . CORRECTION:

Just received the latest issue of the *SBSE News*, and as always was very impressed by how you manage to put together such a nice bulletin in addition to teaching, research, and whatever else you do. NICE WORK!

I was also very pleased to see the article I offered on Solar Sustainable Housing (page 5), but was horrified to see that somehow a mega mistake occurred, under "decisive constraints include not merely energy use; but also . . . and *not* economic costs." But, indeed in this research task we wish to focus heavily on the houses being affordable, *not* exotic demonstrations. The houses should be marketable. By the end of the Task in 2005 many builders should offer such houses as a standard line, and by 2010 these houses should be widespread in our built environment. Perhaps you could correct this mistake in the next issue. Anyway, otherwise, was very happy to see the article.

- Robert Hastings, *E.T.C.*

[I do a lot of whatever, especially getting extra knots into the SBSE News. I'm sorry that this idiosyncrasy destroyed the meaning of your submission. It wasn't the only glitch I suffered in the last edition. Quality control (ed.'s ed.) was booked elsewhere. I'm humbled! Mea culpa.-ed.]



SBSE PEOPLE

‡ The newest addition to the SBSE family arrived Saturday, January 16! Her name is Elanne Virginia Boake; she weighed in at 7lb.-10oz. Everyone is doing well!! Mom **Terri Meyer Boake** says Elanne's pretty darn cute! *[I'm suspicious. Is this sleepy baby from Terri who takes all the photos, goes to all the conferences, writes all the commentaries?—ed.]*



photo: Terri Meyer Boake

A new northern light, Terri's daughter, Elanne.

⊗ **Gail Brager** won two awards for her research on thermal comfort and adaptation in naturally ventilated vs. air-conditioned office buildings—a 1999 EDRA/Places Research Award and ASHRAE's Crosby Field Award in recognition of the best paper published by the Society in 1998. Her work was done in collaboration with Richard de Dear from Macquarie University in Sydney.

🏠 **Eddie Cazayoux** has been building his house for the past four years, one month, and a few days: He's finally moved in! The house is French colonial vernacular and as passive as it can get it. Even some of the interior walls are bousillage (mud construction). A geothermal heat pump acts mainly to dehumidify in the thick of summer.

⚖️ **Tang Lee** has been retained as an expert witness by one of the largest law firms in Canada on a major, country-wide problem affecting a common building component. The case is so serious that Tang had to sign a confidentiality agreement, valid until after the trial, slated for September–December 2000. Guess which component.

🎓 RPI announced that **Russ Leslie** has been promoted to Professor.

🏠 Rockport Publishers has printed *Rendering Real and Imagined Buildings*, by **B. J. Novitski**. *[See ACADIA Quarterly 17:4 1998 for a thorough review, a rave!—ed.]* ||

BOOK REVIEW

Architecture and the Environment: Bioclimatic Design, by David Lloyd Jones, Foreword by Tadao Ando, The Overlook Press, Peter Mayer Publishers, Inc., Woodstock, NY, ISBN 0-87951-819-7.

What I like about this book is that it states that “green architecture” is NOT an architectural style. It is, instead, or it should be, an integral part of architecture. Fifty buildings across continents are examined to see how they achieve harmony with their settings, conserve energy, provide health and well-being for the occupants, and minimize their impacts on the environment. Four aspects are examined: building energy features, HVAC systems, energy performance, and environmental/health features. The buildings are sited from Kuala Lumpur to Kumamoto; Golden, Colorado, to Cambridge; Harare to Athens; Bordeaux to Pomona; French West Indies to Belgium; and (yes!) Northern Territory, Australia to West Java, Indonesia. And they are, indeed, beautiful pieces of architecture.

But what I appreciate most are the first three chapters. The first chapter discusses the roots of green architecture. Two extreme schools of thought on green architecture are presented. One is that “salvation can only be met through a radical change in social and cultural values,” where the “people look for simple community-based lifestyles” and “materials and labor are obtained locally.” The other approach is that we can invent new structures and communities, rely on technological fixes, and “ecological disaster can be avoided if we can learn to harness technology in an appropriate manner.” Which is the right approach? The author leaves it up to the reader to ponder whether a single answer exists. I think that's what makes this book so interesting. In the next two chapters Jones presents the principles of bioclimatic architecture and discusses several examples without giving a list of recipes (as in most previous books in this genre). It also discusses the paradigm shift from concentrating on operating energy to embodied energy and the impacts construction of an energy-efficient building done today will have on life in the future.

After finishing the case studies part of this book (Chapter IV) I concluded that we have a long way to go to create green, sustainable, environmentally-friendly, bioclimatic architecture. Most buildings presented in the book do have low energy use and CO₂ emissions, but they answer “No” to the questions of whether low-embodied energy or recycled building materials, water-conserving systems, or natural sewage treatment are used. This sort of book will encourage architects to go greener so that a decade from now those questions will be answered with a resounding “Yes.” (Available at <<http://www.barnesandnoble.com>> for a special price). ||

—Veronica Coebarto

BOOK PREVIEW

The manuscript for the 9th edition of *MEEB* is now in Wiley's hands and is expected to be in print by late 1999 or early 2000. When my seven half-filled FedEx boxes of manuscript were launched, the sigh of relief could be heard well beyond Lawrence Hall. New materials in the text include cooltower design guidelines, earth heat exchange, fuel cells, displacement ventilation, water supply, and sewage treatment systems. *[I hate to admit it, but I'm looking forward to the update. I hope the new edition far outweighs the old—I bill ECS as a body-building course.—ed.]*

In my new-found spare time, I have been updating the bibliography of ECS-related books in the University of Oregon library system. It's now at about 1,400 items and still growing—a monster has been unleashed! *[Is this list available to SBSEers?—ed.]* Now I understand why the last time I attempted this was 1982. *[No wonder you were such a grump when I was TAing for you.—ed.]* ||

—John Reynolds

RESEARCH NOTES

HOLES IN WALLS—HOLES IN BUILDING SCIENCE?

Tang Lee wrote in the last newsletter about the crisis of leaking condominiums in Vancouver. He raised some important issues that bear our further scrutiny.

Moisture failures in building envelopes are on the rise around the world and should be of serious concern to architects, who consider design of the envelope within their core competence and their sole responsibility. When building envelopes fail to keep out moisture, building components will decay—a life-safety issue when structural integrity is compromised; a health issue when fungi, mold, and bacteria make people sick, sometimes fatally; a sustainability issue when building parts are replaced far sooner than would normally be expected. In California alone, \$1 billion is spent each year to replace rotten wood. That's a lot of trees.

And now for the scary part: The vast majority of people believe energy efficiency is at fault, at least in part. Buildings are leaking water and have always leaked for a variety of reasons. The problem these days, according to the masses, is that our walls no longer also leak heat and air that would have dried out any unwanted moisture. In other words, our walls are now much more unforgiving of design and construction errors. There's a general lack of understanding of how walls work in the presence of heat, air, and moisture loads. How well do we really understand envelope performance? Many people are questioning the fundamentals of our modern walls and challenging the gospels of air sealing, vapor barriers, between-stud insulation, and energy codes. The businesses trying to fix all these rotting buildings are dying for solid data and skilled professionals who actually know what they're doing.

Vancouver is just one city among many experiencing a leaky building crisis—class action lawsuits related to moisture failures are rampant around the U.S.—but it offers some lessons and some red flags. Tang mentioned a lack of faith in architects in Vancouver. It's more serious than he suggested—British Columbia actually considered removing the right of architects to be self-regulated. In other words, the profession itself would no longer be in charge of its own licensing. This change arose from the architects' own admission to a government inquiry that they really don't understand the building science behind envelope performance. And yet architects claim to own the envelope. What's wrong with this picture?

It's no news to any of you that there are serious technical gaps in the architectural profession, both in school and practice. But we also have a problem with how we teach building science. I had some great teachers in energy efficiency, but after 15 years in the field I am only now learning something about moisture. Are we plagued with tunnel vision for energy efficiency and sustainability such that we've lost the bigger picture of the building as a complicated assembly that must meet a whole series of disparate performance requirements? Are we, therefore, guilty of the same crimes of which we accuse the studio instructors and the mainstream architects? I'd be pleased to hear your comments—drop me a line at <jennifer@van.forintek.ca>.

—Jennifer O'Connor

VISUAL FIELD DIGITAL IMAGE ANALYSIS METHODOLOGY

In several Vital Signs-based courses at Ball State University the resource module "Interior Illuminance, Daylight Controls and Occupant Response," developed by Marc Schiler and Shweta Japee, has been used. Lesson Seven, "Extended Luminance Measurements," describes a method for capturing digital photographic images of scenes and submitting them to both graphic and numerical analyses of brightness distribution and glare potential. The process describes both long-term, time-lapse video and short-term, single-image capture and analysis techniques. While the described tools and techniques for image capture are relatively straightforward and available, the software (VIDEO1) for digital image conversion, manipulation, and analysis is somewhat dated and difficult to obtain.

In an effort to accomplish the data analysis described in Schiler's lessons, an alternate system was developed, using two generally available commercial software products and one specially developed conversion utility. After the digital image is captured the alternate methodology uses the following Windows-based software packages:

- *Adobe Photoshop* imports the digital image and exports it in .RAW data file format.

- *RASCAL*, a specialized BSU freeware application that converts the image file in .RAW format to a delimited ASCII file.

- *Microsoft Excel* for data import and analysis. A specialized spreadsheet template has been developed to analyze the image in six different ways.

The Web directory <<http://www.bsu.edu/classes/culp/litestuff/>> contains three downloadable files required for this process.

- *culpstep.txt*—an ASCII text file that gives step-by-step instructions for the entire procedure.

- *rascal.exe*—the .RAW-to-ASCII file converter (a simple .exe file that runs under Windows 3.x, 9x, and NT).

- *culplite.xls*—the *Excel* workbook that analyzes and displays the data. (Load this file in *Excel*. If you don't want to complete the entire process right away, there is a default image loaded in this workbook so you can see what it does.)

Admittedly, this method is not a single, seamless, integrated product but instead strings together a series of applications and steps to get from point A to B, to C. It requires slight familiarity with *Adobe Photoshop* and *Microsoft Excel*. Nonetheless our students have found it useful. Hopefully yours will, too. Please send comments and suggestion to <jculp@bsu.edu>.

—Jeff Culp

LBL DAYLIGHTING NOMOGRAPH

I've developed an *Excel* spreadsheet for estimating energy savings due to daylighting. It is based on the *LBL Daylighting Nomographs*. Copies are available via e-mail, <efmoore@aol.com>. While the spreadsheet can be used without further documentation, the underlying assumptions are discussed in Selkowitz and Gabel (1984), *LBL Daylighting Nomographs* and the more recent (and excellent) *Tips for Daylighting* (LBNL pub 790); both are available from Steve Selkowitz, <SESelkowitz@lbl.gov>. ■

—Fuller Moore

• continued next column

VITAL SIGNS DOWNBEAT

It's Vital Signs Toolkit time again. Eight toolkits are available to ACSA member schools and ABET schools of architectural engineering for the 1999–2000 academic year. If you would like to borrow a toolkit for next year, submit a brief written proposal to Cris Benton by April 15, 1999. Brief is the key word here. Applying for a kit should not be a major chore. Applicants will be notified via e-mail by May 3, with written confirmation to follow by mail. You can download proposal guidelines at <http://www-archfp.ced.berkeley.edu/vitalsigns/res/ToolRFP-99/rfp99.pdf>, or just follow the link from the Vital Signs home page at <http://www-archfp.ced.berkeley.edu/vitalsigns/Default.htm>. We've also added a number of building case studies to our web site in the past few months and will continue to add new ones as they are completed.

As most of you know, funding for Vital Signs has ended and future support remains uncertain. Beyond the Toolkit Loan Program and maintenance of the web site, we don't have the resources to mount new activities from Berkeley at this time. There will be no Vital Signs Training Session in 1999, although we hope to resume this event in August 2000. We are happy to report that Walter Grondzik will chair a symposium on Vital Signs at the upcoming EDRA conference in Orlando, Florida, in June. The intent of the symposium is to introduce the Vital Signs approach to EDRA attendees. Walter will also seek comments from post-occupancy evaluation adherents as a means of establishing links between SBSE and EDRA. You can contact Walter by e-mail at gzik@polaris.net. Thanks to everyone who sent a letter supporting our current proposal to the U.S. Department of Energy. We expect to hear from DOE shortly.

Finally, with the cessation of funding Bill Burke's position as project coordinator ended in February. *[Where have you gone, Bill adagio? Vital Signs turns its lonely eyes to you. Ooo ooo ooo. What's that you say, Mr. Richardson? Busy Bill has left and gone away! Hey, hey, hey. Hey, hey, hey. -ed.]* Bill is now working at the Pacific Energy Center in San Francisco. He'll help review the Vital Signs toolkit loan proposals, but isn't working on the project on a regular basis. Send your Vital Signs inquiries to Cris Benton at crisp@socrates.berkeley.edu. [Yes, that's 'crisp,' not 'cris' in the e-mail address!] ■■

-Bill Burke

THE CHINA CONNECTION

Margot—I just finished an academic visit with Ed Allen in China and Hong Kong where there was an exceptional response to his lectures and seminars. It was apparent from what we saw that education in architecture is in need of new ideas and updated information. When we were in Beijing there was some talk about bringing the SBSE 2000 retreat to China if it could be arranged with the membership. The reasons are multifold: (1) fill a present need in China to use information previously inaccessible to them, (2) introduce current developments in education and research concerning technological issues in architecture, (3) introduce new formats for holding meetings and seminars, (4) create avenues for academic exchange where new research schemes can be developed for the China market both in education and built projects. There is a good possibility that I could raise funding from developers in China. Since the ACSA international conference will be in Hong Kong next year, perhaps we could dovetail it with the SBSE retreat. We could generate a great deal of interest in China. Two of the schools in China (in Beijing and Guangzhou) are interested in hosting the meeting. The idea I have, should this become a possibility, is to bring the SBSE meeting to China without radically changing its format and content, perhaps with some additional sessions specifically developed for China. The Chinese could either join in the discussions or observe the proceedings. It is my hope that the personality of SBSE would be a natural influence for academic exchange to benefit both shores of the Pacific. Please let me know what you think. Perhaps Ed Allen could give another perspective on this possibility when he returns from Hong Kong this week.

-Frank Sun

Frank—I'm interested in the potential for an SBSE event in China. We have discussed international venues, and the connections you provide make China a good choice. I would like to take steps to realize this goal. I will need to discuss your proposal with the other officers but suspect we will have support from them as well. I hope that we can soon formalize a plan for specific dates, topics, and funding.

-Margot McDonald

Margot—Frank Sun has sent you a message about the possibility of holding the next SBSE retreat in China. I just returned from spending three weeks lecturing and giving workshops in China under Frank's sponsorship, and I can tell you from firsthand knowledge that it's a great idea, provided he can raise some travel money to help SBSEers get there. The schools are *hungry* for information on better ways of teaching because they're stuck in the old lecture-and-examination mode. Both teachers and students are wonderfully open to new ideas. A workshop like the one we had in Taos would be a revelation to them and would do a world of good. A side benefit would be that Frank knows China like Rob Peña knows New Mexico. In other words, we'd have the best of everything from food to sightseeing, to hidden architectural treasures. It's an amazing experience! So give the idea serious consideration.

-Ed Allen

Margot—I plan to return to Beijing at the beginning of March to continue my efforts to coordinate matters for the Center for Architectural Research & Education and SBSE 2000. I assume there are many items in this plan we need to discuss as there are many possibilities we could tackle as subject matter. Two weeks ago I received word that the ACSA international meeting 2000 is going to be in Hong Kong with Jerry Finrow, University of Washington, as conference chair and Lisa Findley of CCAC and Howard Davis of Oregon as co-chairs. I am in communication with them about logistics. It's possible to dovetail the two meetings in Asia in June or July 2000. I'll keep you posted on this development. I hope to attend the SBSE meetings in Québec this summer. ■■

-Frank Sun

JOB OPPORTUNITIES

CAL POLY SAN LUIS OBISPO

Recruitment #93055: Assistant/Associate Professor, full-time, tenure-track 1999–2000 academic year. Primarily teach environmental control systems. Also teach architecture design, practice, computer applications, and M.S. Arch courses. Salary commensurate with qualifications and experience. Requires: M. Arch. or M.S. Arch. + B. Arch. or Ph.D. in architecture; plus minimum 3 years' practice; architectural registration (eligibility for registration acceptable for appointment, but promotion/tenure contingent on registration); recent experience teaching ECS in an architecture program; research in the ECS area (thermal performance, lighting, acoustics); and demonstrated design experience.

Recruitment #93056: Full-time lecturer for 1999–2000 academic year; possible 1-year extension. Primarily teach environmental control systems; also teach computer applications. Salary commensurate w/qualifications and experience. Requires: B. Arch. or M. Arch. degree, minimum 3 years' experience and background in architecture through education and/or professional consultation. Prefer: candidates with research in ECS area (thermal performance, lighting, acoustics); recent experience teaching ECS in an architecture program; and demonstrated design experience.

Refer to above recruitment codes and contact Architecture Department; Cal Poly SLO; San Luis Obispo, CA 93407 for information and application. Application deadline for both positions: April 16, 1999. AA/EEO.

RENSSELAER POLYTECHNIC INSTITUTE

Architectural Technology and Design—tenured or tenure-track position beginning Fall 1999. Candidates must have earned a master's or doctorate in architecture or related field. They should have demonstrated strength in teaching and research in construction technologies and computer-assisted design integration. Technology and design faculty are expected to demonstrate leadership in the technology and design studio sequence in the architecture and building science degree programs. The candidate will be expected to undertake significant research and scholarship.

Interested applicants should submit a vita, statement of professional interests, as well as names and addresses of at least three references to: Chair, Architectural Technology and Design; School of Architecture; Rensselaer Polytechnic Institute; Troy, NY 12180–3590. AA/EEO.

UNIVERSITY OF OREGON

Faculty Position: Design/Environmental Control Systems, visiting assistant or associate professor, beginning fall term 1999 through spring term 2000.

Responsibilities: Teach environmental control systems in lecture and seminar formats in addition to architectural design studios. A strong interest in the relationship between environmental systems and architectural form is desirable. The normal teaching load will be two courses each quarter, one of which is studio.

Qualifications: Candidates will be expected to have an advanced degree in architecture as well as experience in teaching, research, or practice. Salary commensurate with qualifications.

Applications: Completed applications must include a current curriculum vitae, no more than ten pages of representative research/creative practice, and, where possible, examples of student work done under the direction of the candidate; a statement of interest describing teaching objectives; and names with addresses and phone numbers of three references. None of the above material will be returned. To assure full consideration, completed applications must be received by the Department of Architecture no later than April 15, 1999.

Inquiries and complete applications should be addressed to: Faculty Search Committee; Department of Architecture; 1206 University of Oregon; Eugene, OR 97403–1206. Visit our web site at <<http://www.architecture.uoregon.edu>>. AA/EEO. ■

EVENTS

SOLAR IS RENEWABLE

The ISES 1999 Solar World Congress, *Solar Is Renewable*, will be held in Jerusalem, **July 4–9, 1999**. For info check out the congress website <<http://tx.technion.ac.il/~meryzse/ises99.html>>.

PASSIVE AND LOW ENERGY

The *16th International Conference on Passive and Low Energy Architecture* will be centered on Brisbane, Australia, **September 18–26, 1999**. For info contact Conference Secretariat Sally Brown; ICTE Conferences; The University of Queensland; Brisbane, Australia 4072; phone 61–7–3365–6360; fax 61–7–3365–7099; <sally.brown@mailbox.uq.edu.au>; <<http://www.architect.uq.edu.au/PLEA99>>.

GREEN CAMPUS III

Greening of the Campus III: Theory and Reality will be held **September 30–October 2, 1999**, at Ball State University, Muncie, Indiana. For info see <<http://www.bsu.edu/greening/>>.

MAINSTREAMING GREEN

Mainstreaming Green: Sustainable Design for Buildings and Communities will be held **October 14–17, 1999**, in Chattanooga, Tennessee, organized by AIA COTE and the U.S. Green Building Council. For info contact Muscoe Martin, <mbm@maxmanpartners.com>. ■

LETTERS [CONTINUED]

I'm so glad I get the e-mail from the SBSE list server. There are so many hard-working people out there willing to share so much information.

I have not gotten as involved in the network as I wished because of my overload at the office, conducting *ENERGY-10* workshops, teaching at NJIT and CCNY, and working with James Marston Fitch as co-author of the third edition of *American Building: The Environmental Forces That Shape It*. (Release is expected in March. I'm told that it's already available for ordering through amazon.com.)

–Bill Sobenhausen, Steven Winter Associates

[I envy Bill's opportunity to work with Fitch who was arguing for environmentally-responsive design in his 1948 first edition!–ed.] ■

BUILDING REVIEW

ZEUM, A CHILDREN'S DISCOVERY MUSEUM

On a recent trip to San Francisco I discovered an interesting project under construction. "Zeum" is a children's center, designed by Adele Santos, that will contain a skating rink, bowling alley, glass-encased carousel, outside play area, and other indoor interactive activities including a glazed spiral ramp to access parts of the museum. It is adjacent to the Moscone Convention Center and across the street from the new Sony Metreon—MEGA entertainment center. Its sensitivity of design and detailing makes Zeum a nice contrast to the massive scale and structure of Moscone and the new Metreon. The exterior landscaping has been designed with kids in mind—even the undulating garden walls are ideal for "wall walking" (which my kids love!).

The Zeum, from a sun shading point-of-view, makes a wonderful study of what to do and NOT do when designing and constructing sun-shade devices—good intentions gone astray! There are nicely detailed south shading devices on the south, east, and north elevations of the building.

Of particular interest is the indoor skating rink. I am not sure how many rinks y'all from down south hang out in, but from a northern perspective, the atmosphere and daylighting at the Zeum rink are particularly delightful. The south wall is Kalwall on its lower 90%, topped by a continuous clerestory window. The concave roof and overhang, which run east/west, serve to prevent most of the south sunlight that enters the clerestory from hitting the ice surface. They create an ethereal quality of light in the space, quite apart from the usual glare of electric lights (common in non-daylighted rinks).

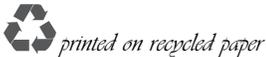
It should be interesting to see how the building performs when complete and occupied. I would love to see a Vital Signs Study of the Ice Rink. ■

-Terri Meyer Boake

photo: Terri Meyer Boake



A Kalwall window topped with a clerestory provides illumination to Zeum's icerink.



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