A single event record-setting 57 architectural educators from 33 schools throughout the U.S. and Canada attended the SBSE 1995 Vital Signs Summer Training Session. The training session was held August 2–5 at the PG&E Energy Center in San Francisco and the Clark Kerr Campus of the University of California. We learned to use field protocols from seven of the Vital Signs Resource Packages.

Thursday morning each participant presented his or her candidate for a future Vital Signs building work-up (complete with a set of relevant questions for student field investigation). Summary descriptions of these presentations were compiled into a booklet that was distributed to the participants. These introductions and the work-up candidate exchange were judged by participants to be among the most valuable aspects of the entire training session.

Additional activities added spiced to the 2½ days of resource package workshops. Gail Brager coordinated reports from small groups on topics that included "Vital Signs in the Studio" and "Opportunities for the Exchange of Building Work-Ups." Cris Benton led several sessions that were enthusiastically received. He dazzled participants with a demonstration of the possibilities for sharing building science and Vital Signs resources via the Internet and World Wide Web. Cris also demonstrated equipment from the Vital Signs Tool Kits, which are to become part of an equipment loan program for schools of architecture. Jeff Kline offered a demo of Infrared Professor, an educational software program under development at the University of Oregon by G. Z. Brown. (Infrared + Brown = Murky?—ed.)

Sundancin' in the Smokies, Solar '96, April 13–18 at the Grove Park Inn Resort in Asheville, North Carolina, will be the venue for the next SBSE Annual Meeting. The call for papers for ASES is out—abstracts are due October 1!!! Questions or whining? Call Larry Sherwood at ASES at 303–443–3130. ❚❙

Erv Bales and Lance Lavine test glazing.
LETTERS TO THE EDITOR

Thanks to all at Vital Signs for making the 1995 Training Session such a wonderful success. Those who attended have a vast amount of material and software to enrich their 1995/96 courses.

I am continuing to work on data collection for my “Survey of Sustainability Curriculum Development.” I have just under 70 responses to date. I will be sending out reminders and additional copies; I hope that members, who have probably just finished printing up all those course outlines, will help me out with some information. I intend to submit an analysis of the results to the ASES Conference Education Program for Asheville in ’96. I might even be able to get some university funding that way! An interesting piece of information from the survey info so far—5% of those who teach passive design do not consider that they teach sustainable design, and 17% of those who teach sustainable design don’t think that they teach passive design. The respondents were all either ECS or Building Technology profs.—Any ideas?

I am up for tenure and am in the midst of completing multiple copies of my package for the September 11 deadline. My thanks to those SBSE members who might be asked to review my case!

—Terri Boake, Waterloo

[Your compliments are seconded. I’m anxious to hear more results from your survey!—ed.]

* continued page 7 *

ASES PASSIVE ’95

[After the 20th National Passive Solar Conference your editor braved the electronic netherworld soliciting opinions and impressions of the event. Four of you replied—although Leonard offered his opinion via the old technology of notes scribbled on a steno pad scrap. Moreover ASSES contributed the ‘official’ review in the Sept/Oct 1995 issue of Solar Today.—ed.]

Over 500 participants attended daily plenaries and symposia, forums that included audience participation, and well over 100 technical presentations highlighting recent technical advances and successful applications of renewable energy technologies. Special events included a revival of the traditional Passive Conference basketball game, featuring some conference old-timers and new faces. [One of the former, ed., on SBSE’s behalf, contributed about 15 points to the West’s winning effort.—ed.]

Denis Hayes summed up the political climate in Washington—“The geniuses of deregulation . . . have now launched a major intellectual exercise to prove that what renewable energy developers have accomplished in practice is impossible in theory.”

—ASES

The Republican incentive for return of power to the states and state decentralized budgets to county and city level is the most positive trend in the spending cut frenzy (Senator Janet Johnson, Christine Ervin, Denis Hayes, Randy ‘big unit?’ Johnson). I hope localized priorities will favor local resources and sustainability strategies. Coupled with utility forays into wind power (now cheaper than coal) and continued reference to externalized cost accounting, this could be a significant shift in decision making paradigms to favor solar. [Are we optimistic, naive, or what?—ed.]

“Being called anti-science by Dana Roerbocker is like being called ugly by a Klingon.”

—Denis Hayes

“The ability of the environment to absorb wastes will drive our needs more than resource depletion.”—Mark Kelly

“Plan for people, not cars. . .”—John Knott

“There is more computer technology in a throw-away musical greeting card than there was in the entire United States in 1948.”—Randy Johnson

—Leonard Bachman

I thought the conference was good, but I wish that more of you could have attended (intimidated by steamy Minneapolis?). I found it refreshing to gain a perspective other than that of architectural educators: Mike Utzinger’s session on glazing was intriguing to me for it included viewpoints from educators, practitioners, and industry reps. It was also eye-opening to realize that Minnesota is implementing some really strong initiatives related to the environment, energy, and sustainable design—I learned about a lot of new resources in my own backyard.

We also had a surprisingly good turn out for the SBSE Annual Meeting. Should we consider Murray Milne’s recommendation of adopting the loon as the SBSE mascot?

—Mary Guzowski

The continued presence of the Sustainability Division was a welcome sign of legitimacy. The conventional engineering audience and broad-based sustainability interests can co-exist. Now we need to make the effort to get them to co-mingle.

—Margot MacDonald

It is always invigorating to see good friends; this year I missed seeing regulars like Marietta and Joel, Fuller, Gail, Dale, and Ginger, to name a few. Some of the students’ papers were above average. The proceedings seem to get physically thinner each year—I hope that’s not reflective of the content. Personally, I mourn the proliferation of computer graphics in the papers, which I find

* continued next column
The 2nd Annual Green Building Conference was held in Big Sky, Montana, this August and, since I saw very few architecture faculty there, I thought I'd share a few observations.

First, the conference was well attended (.250 people) in spite of its remote location north of Yellowstone. The presenters included carpet manufacturers, such as Interface and Collins & Aikens, both touting environment-friendly policies for their products life-cycles (Interface, a lifetime lease on their product where they take it back at the end of use; Collins & Aikens, carpet scraps and recycled carpet are chipped and molded into plastic landscape lumber for automobile stops.) [Wouldn't bicycle racks be more appropriate?-ed.]

In the area of government activities the National Institute of Standards and Technology (NIST 301–975–3058 or 301–975–4032 fax) had several representatives show their work in economic life-cycle analysis of building products. They will have a software tool (BEES) out in 1996 for beta testing. There were also representatives of the U.S. Green Building Council unveiling the first public draft of the Green Building Rating System. [How does their system compare with BEPES?-ed.] The Council, 301–657–3469, offers a series of publications on green buildings and coordinates with ASTM on a variety of environmental subcommittees. Finally, on the vendor side, Nadav Malin of the Environmental Building News is offering subscriptions to students at a greatly reduced rate ($25/year). Contact him at 802–257–7300 or 802–257–7304 (fax) for details. [A great deal on a valuable publication.-ed.] SBSEers—call or fax EBN with your support of their gracious offer.

It was encouraging to see so much interest from corporate and government types in this arena. There appears to be some genuine efforts out there, not just a “green wash.”

---Margot MacDonald

I am very upset about the direction architecture is headed today and the lack of value society places on our profession and our services. Can we reverse this trend? I feel it will take some fairly significant effort, hence this crazy idea:

Create a new kind of inter-university (hyper-university, virtual university?) that grants an accredited professionally-oriented doctorate in building or architectural science.

Your comments are welcome. If you want a copy of the proposal's rough draft to edit, e-mail a request to <milne@ucla.edu>, fax to 310-454-7328, or call 310-825-7745. I would like to get as many people involved as possible—especially you nay-sayers, critics, or others who think it is a naive idea or doomed to failure. Please read the rough draft, and give me your general reactions, or better yet give my your detailed comments by typing them directly into the text. In a couple of weeks I will collate everything and send out the next round. Then, if I detect a consensus to proceed, we’ll discuss it this summer. Before then we will need some volunteers to make preliminary contact with funding sources.

Wish us all well!!!

---Murray Milne

lesseens their appeal—does this warrant an angry response from the mouse-keteers among us? [See related story—SBSE and Internet.-ed.] For me, the real value of ASES is the chance to hear, then sit down and talk with researchers, manufacturer reps, engineers, architects, and, of course, SBSEers about real things happening in their work. Utility deregulation may sound dull, but its implications are enormous; and PV orders vastly outstripping delivery capability is a wonderful portent. For diversity and stimulation it beats the hell out of either ACSA or AIA gatherings.

---John Reynolds

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**SBSE PEOPLE**

- **Max Akridge** has been awarded a $44,000 research contract by Georgia Power to investigate energy conservation and design options for a small commercial building.

- **Progressive Architecture** awarded a 1995 Architectural Research Citation to Ray Cole for his work on the Building Environmental Performance Assessment Criteria Program. Ray attempts to explain BEPAC in this issue (see p. 6).

- Dee Ginther and Mary Guzowski received the 1995-96 Nuckolds Grant for Lighting Education to develop and conduct a collaborative theater, interior design, and architecture lighting studio.

- This fall Architronic, an electronic journal from Kent State, will publish an issue on Sustainable Design, edited by Jack Kremers.

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Sun angle study for the Rock 'n' Roll Hall of Fame, June 21, 10 a.m.

Among his peripatetic daylighting research projects is Moji Navvab’s consultation with I.M. Pei–Cobb Freed & Partners on the Rock ‘n’ Roll Hall of Fame and Museum in Cleveland. Glare was the big issue. [Duh!–ed.] Your eyes did not deceive you—that was Moji rockin’ to Chuck Berry and Melissa Etheridge on the HBO dedication concert broadcast! Or was it just some guy from the ‘hood?

- Congratulations to Hofu Wu on his promotion to professor at Cal Poly Pomona.
AVAILABLE

SLIDES OF GALLERY INTERIORS
For those disappointed folks who didn’t get to see the inside of the Circle Gallery (formerly Morris Gifts) by Wright in SF, I took 7 nicely exposed, very clear, covert shots of the interior. Strange how these automatic cameras can just shoot by themselves. Also, I have some interesting shots of the ceiling and lighting systems in Botta’s SF MOMA—another autonomous shot. [Are you related to Alan Funt?—ed.] I will probably have copies archived with Gail, but in the meantime I could arrange to make copies for anyone interested. Contact Terri Boake.

TEACHERS’ RESOURCE PORTFOLIOS
for climate-responsive design have been distributed free-of-charge to all 300 European schools of architecture to advance the teaching of "green" architecture. Each portfolio (Residential Buildings, Educational Buildings, and Tertiary Buildings) includes material on the history of the building type, relevant design strategies, detail design, contemporary buildings, and a bibliography. The portfolios are extensively illustrated and will be invaluable for teachers in the design studio and to practicing architects. Each portfolio may include text, drawing, illustration, computer software, OHP transparencies, and posters. They are available outside Europe for purchase ($8125). For further information, contact J. Owen Lewis, Energy Research Group, University College Dublin, Clonskeagh, Dublin 14, Ireland, +353.1.269 2750, fax +353.1.2838908.

TWIN KILLING AT SEATTLE

SOFTWARE ON CD
The dean and department chair of each architecture program in the U.S. received a copy of Total Teach on CD from the National Institute of Building Sciences. Each CD includes several archive-quality software packages of interest to SBSE members—MOSAIC 2.0, SOLAR–5, DAYLIT, Climate Consultant, Window 4.1, and Superlite for example. Ask your dean or department chair about it.

CENTER FOR REGENERATIVE STUDIES SITE PLAN.
At the SBSE Annual Meeting in Minneapolis we decided that two retreats would be developed for the coming year. One, an international retreat to Cyprus and Turkey (organized by Fatih Rifki and Lance Lavine) [Stay tuned for the next issue of SBSE News.—ed.], and one in the U.S. for those who are unable to make it to Cyprus.

The U.S. retreat will be held at the Center for Regenerative Studies in Pomona, CA, and will be an opportunity to study, live in, and experience a place that integrates principles of sustainable design into the occupants and guests’ daily routine. The center was designed as a demonstration project to explore the interactions between people and regenerative technologies and practices. Approximately 20 residents live, work, and study issues related to energy, shelter, water, food, waste, and agriculture at the center. The 16-acre site is on the Cal Poly campus in Pomona. In addition, there are many interesting places to visit nearby that address related ecological issues. Hofu Wu, Margot MacDonald, and Mary Guzowski are investigating opportunities and setting the agenda for this retreat. Contact Mary, <guzow001@maroon.tc.umn.edu>, if you are interested in spending summer days in Pomona or have ideas for retreat activities. [continued page 5]
With about 30 SBSE members in attendance, the Annual Meeting occurred Sunday, July 16, in the Crystal Room, City Center Marriott, Minneapolis, Minnesota.

1. Leonard Bachman reported that SBSE is in outstanding fiscal shape ($12,509.06 on hand as of May 1995) and distributed copies of a one-page mini-directory.

2. Walter Grondzik, Margot MacDonald, and Mike Utzinger were nominated (and accepted) chair-elect, while Leonard was nominated to serve a second term as secretary-treasurer. Ballots were mailed in September.

3. Walter Grondzik reported that 12 professors, 4 associates, and 3 assistants volunteered for the SBSE peer review bureau. Walter maintains the list and will develop procedures for its use. Look for an SBSE News item in the winter issue.

4. SBSE’s role as an AIA Continuing Education Provider was proposed. Is it possible to sponsor CEUs at Asheville? Lance Lavine, Leonard Bachman, Bruce Haglund, and Walter Grondzik formed a committee to investigate the possibilities.

5. The 1996 Retreat in Cyprus was discussed. It should last about two weeks, cost $2000, and accommodate a maximum of sixteen people. Fatih Rifki will handle the logistics and Lance Lavine will coordinate content. The retreat will focus on on-site study of vernacular courtyard architecture and its passive cooling performance. More information will be provided soon. A subcommittee was formed to discuss an alternative U.S.-based retreat. The subcommittee adjourned to a working lunch at Daytons [where I used to sit on Santa’s lap!–ed.] penthouse cafeteria. Their report is included in this issue.

SBSE 1995 ANNUAL MEETING MINUTES

1995 LEADING EDGE COMPETITION

Three Cal Poly–SLO third-year architecture students, with Margot MacDonald as mentor, earned honorable mentions. Their winning projects transformed the Grand Central Air Terminal in Glendale, CA (terminus of the first commercial flights to Los Angeles and the site of the closing shots in Casablanca) into a destination light rail station with an emphasis on energy and resource efficiency, sustainability, and historic preservation. The projects have been on tour through Northern California, including a stop at the PG&E Energy Center.

Vikas Shrestha, a UCLA architecture student and Fulbright Scholar from Nepal, won first place. Second place was won by Sukanya Nutalaya, a Ph.D. student from Thailand. The students began this project in Murray Milne’s Climate Responsive Design course, and completed their submissions in a special studio course. Murray has been the faculty advisor for all four of the UCLA students who previously won first place in this competition. In recognition of this feat, he was presented a special commendation from the competition sponsors.

ECO-DESIGN ARTS CONFERENCE

“Changing Paradigm, Changing Place” will be held April 11–14, 1996, at the University of Oregon School of Architecture and Allied Arts. Last year over 450 participants, including 63 lecturers from around the country, spent 3 days in panels, workshops, and lectures discussing the creation of regenerative [supplanting ‘sustainable’ as buzzword du jour–ed.] communities. For more information and a call for entries of papers and projects, contact HOPES at 503–346–0719, e-mail <hopes@gladstone.uoregon.edu>, www<http://gladstone.uoregon.edu/~hopes/>

GRANTS FOR SUSTAINABILITY

The W. Alton Jones Foundation offers grants through its Sustainable World Program. In addition to addressing biodiversity and economic activity, the program aims to solve energy needs in environmentally sustainable ways. The foundation supports applied research and scholarship that define or explore new solutions and problems. There is no specific deadline for applications. See your research development office for more information.
BOOKS TO REVIEW

A Primer on Sustainable Building, by Dianna Lopez Barnett with William Browning, Rocky Mountain Institute, 1995. Both P/A and AIA laud this offering. "A way-cool synopsis of state-of-the-art sustainable design..." -AIA "...the book is compact, but loaded with valuable information on the basics of sustainable design. ." -P/A.

Light Revealing Architecture, by Marietta Millet, Van Nostrand Reinhold, 1996 (Feb?). Intended to explore light as an architectural medium and to present light and its interactions with architectural space. 400 illustrations, mostly color.


BEPC EXPLAINED

[Those of you who noticed the July 1995 Awards issue of Progressive Architecture probably saw that Ray Cole of the University of British Columbia received a Citation for Architectural Research for his BEPAC project. I asked Ray to elucidate his complex rules for environmental scorekeeping.—ed.]

Building Environmental Performance Assessment Criteria (BEPAC) was initiated in British Columbia in 1993 for new and existing office buildings and is administered through the Vancouver-based BEPAC Foundation. Its building design and management criteria are categorized into five major environmental topics—Ozone Layer Protection, Environmental Impact of Energy Use, Indoor Environmental Quality, Resource Conservation, and Site and Transportation. The number, organization, and rigor of the criteria are influenced by the practicality, cost, and consistency of making an assessment, the extent of general agreement about the significance of the criteria, and the ability to accommodate future changes in criteria.

All performance criteria are implicitly or explicitly judged relative to a base condition and an "ideal" or "best possible" performance. In BEPAC, the basis for evaluations is the performance expected by best-practice approaches, given the current and emerging knowledge base in these fields, and the available standards which guide design and operation. Where quantifiable values are used, they are in reference either to current standards (such as those developed by professional organizations) or to emerging design guidelines (such as low-toxicity materials selection).

BEPAC assigns points to various aspects of building performance—the better the performance, the greater the number of points awarded. A maximum of 10 points may be awarded for each criterion. In some feature-specific criteria, full points are awarded for the presence of a feature or for compliance with a threshold value. In other criteria, such as greenhouse gas emissions and ozone layer protection, a scale of point awards has been determined based on a continuum. Some performance criteria, such as ventilation rate, have point awards increasing as the effort to achieve them increases.

The interpretation of an environmental assessment requires comparison and judgment (assigning relative importance to environmental criteria and between environmental and other aspects of buildings). BEPAC has attempted to recognize the relative significance of different building environmental criteria by "weighting" the points assessed to reflect significance, priority relative to other criteria within the same topic area, or effort required for meeting the criteria. The relative weightings for the criteria were derived by filtering them through a set of relevant considerations which indicate their importance, scale, and urgency in global and health terms. The total weighting of a specific section is always 1.00. The program ultimately assigns credits calculated by multiplying the point awards of the criterion by its relative weighting. Credit scores for one criterion can therefore be more legitimately compared with others within each of the five topic areas. Although it is possible to identify the detailed strengths and deficiencies of buildings against a declared set of criteria, an important question emerges as to which has the "best" overall performance. Simply adding the performance scores attained in all criteria is clearly dangerous. BEPAC offers an environmental profile of a building wherein the credit scores are kept discrete and communicated graphically.

Apart from providing a comprehensive environmental assessment protocol, BEPAC offers several indirect benefits. BEPAC has reinforced the notion that the environmental performance of a building must be assessed comprehensively. In a rapidly expanding field of knowledge, BEPAC structures and prioritizes environmental information for new designs and major renovations of buildings and for organizations formulating environmental criteria for their specific facilities. A BEPAC assessment gathers and organizes detailed information on the building, which can be used by building management to lower operating, financing, and insurance costs; lower vacancy rates; and increase marketability. Moreover, an assessment can act as a catalyst to bring together many diverse sections within an organization to develop a coordinated strategy for environmental action.

Copies of the full BEPAC documentation (approx. 200 pages) are available from the BEPAC Foundation, #301, 1770 West 7th Avenue, Vancouver, BC V6J 4Y6, at the cost of $100 CAN. —Ray Cole
SBSE AND THE INTERNET

During the 1995 SBSE Summer Session at San Francisco we had a dinner meeting to discuss the Internet and its implications for SBSE. Like the fax machine before it, the Internet is inexorably creeping into our lives. I can clearly remember when it finally dawned on me that I was going to have to get a fax machine. Today, references to the Internet are becoming similarly insistent. Folks ask if they can FTP that document you mentioned, what your department’s URL might be, or if you can receive MIME-encoded attachments. Early in the learning curve this dialogue is a nonsensical alphabet soup. But it starts to make sense pretty quickly. If you are not Internet savvy, I recommend a gentle exploration: the learning curve is steep, the benefits are substantial.

At our working group dinner meeting Mike Utzinger, Margot MacDonald, J. J. Kim, Werner Osterhaus, Walter Grondzik, John Selfridge, Marc Schiler, and I agreed that SBSE should begin with an e-mail list server to further the discussion. A list server is an e-mail address (tentatively <sbse@ced.berkeley.edu>) which will reflect any message it receives to a group of subscribers. I’ve volunteered to maintain the list server from UC Berkeley. So, if you are interested in contributing to the discussion of SBSE on the Internet, send an e-mail note to <cris@ced.berkeley.edu>, and I will make you a charter subscriber.

There are quite a few interesting Internet projects that would benefit SBSE and its membership.

1. Establish and maintain an SBSE World Wide Web (WWW) site. The WWW grows at an astounding pace and reaches every corner of the world. [At its regional inception was it known as the Walla Walla Web?–ed.] Within this medium we can provide basic information about SBSE, a calendar of SBSE events, an on-line SBSE directory, and links to the pages of member schools and related projects. I’m astounded at the response to my early experiments posting web pages (I’ve had 15,000 visits to my Kite Aerial page, <http://www.ced.berkeley.edu/cedr/vs/>). Similar efforts on behalf of SBSE would connect us to a larger audience while serving our existing member base. Mike Donn from New Zealand is visiting Berkeley for the next six months and has offered to contribute to the development of a site. We are particularly interested in your ideas and suggestions. For the last year Mike has maintained a page describing SBSE, <http://brick.arch.vuw.ac.nz:85/index.html>.

2. Develop an SBSE File Transfer Protocol (FTP) site. SBSE has long maintained an archive of shared teaching resources including course materials, exam questions, and slides. An FTP site, accessible through the Internet, would be a natural adjunct to these earlier efforts. We would offer copies of contributed software programs, documents, digital images, and data. The Vital Signs Project will offer Resource Packages and Building Workup data via this medium.

3. Provide advice to SBSE members on tricks of the Internet trade. It seems one of the tangible advantages to being an academic is access to the ethernet that wanders through our campuses. The connections made possible by this remarkable flow of bits and bytes can add a new and useful dimension to SBSE. We can assist each other over the potholes of Internet use via a discussion group or e-mail.

Join the discussion group.

Letters to Ed. [Cont.]

For those of you in the ACSA Western Region (and those wishing to express their viewpoints), I want to see SBSE’s sentiments on improving the technology portion of the Annual Meeting presented to the ACSA board. The Western Region representative is at Cal Poly–SLO and has offered to take our comments to the next board meeting. The format of the Boston meeting in March 1996 probably will not change, but let’s give them some food for thought.

—Margot MacDonald, Cal Poly–SLO

[Thanks Margot for passing on our widespread discontent to the ACSA representative.–ed.]
SBSE Vital Signs Retrospective (cont.)

Even more hands-on experiences were requested.

“This is a better approach to the subjects. Get out of the lecture hall and involve students.”

“I enjoyed getting to the hands-on stuff because in the same way it is intended to raise
students’ excitement levels, it raised my own.”

Future Vital Signs Training Sessions will heed this advice, placing even greater emphasis on the
hands-on approach to learning. [We also loved the small group working dinners, gourmet sack
lunches, Alison’s treats, strong coffee, the gizmos at the PG&E Energy Center, Clark Kerr Campus
accommodations, and the MOMA tour with the local architects.—ed.]

The Vital Signs Curriculum Resource Packages are scheduled to be distributed to architecture
schools throughout North America early in 1996. $5,000 mini-grants will be awarded to six schools
for the production of prototypical building work-ups during the first half of 1996. A Student
Building Work-Up Competition will take place during the fall term 1996. For an RFP for the
production of these new building work-ups, contact Gail Brager at 510-642-1696 or
<gbrager@ced.berkeley.edu>.

—Bill Burke