



New and old SBSEers enjoyed the gracious hospitality offered by André Potvin and Claude Demers at Laval University for the 2009 SBSE Retreat.

photo: Terri Meyer Boake

SBSE RETREAT 2010, LAS VEGAS, MAY 14-16

SBSE 2010, “Water: Down to the Last Drop,” will focus on the tensions occurring among all parties who use water and make demands on that finite resource as well as how we educators can best sensitize our students to these issues. *[Sounds like a venue for a Chinatown showing, complete with popcorn!—ed’s ed.]* The 2010 retreat will be held at the Springs Preserve in Las Vegas, NV, from Friday, May 14 (optional trip to Hoover Dam in the afternoon) through Sunday, May 16. SBSEers attending LightFair in Las Vegas from May 12–14 will be able to end our week in the relaxing setting of the Preserve; and SBSEers attending the ASES National Solar Conference, May 17–May 22, will be close to Phoenix. *[It’s anticipated that the full costs of the retreat, including food, lodging, and shuttle to the Springs will be less than \$500.—ed.]*

Next year’s retreat will return to a more casual format with fewer “conference-like” presentations, more hands-on activities, and, of course, opportunities to discuss teaching water-related curricula at all levels. Through our desert experience, in a city where designing water solutions at every level (not merely the city-planning scale) is so crucial, we hope to devise new strategies to address this important aspect of building science/design education in our teaching.

Content coordinators for the retreat are Mark Barnhouse and Cindy Urness of North Dakota State University, and logistics/site coordination will be handled by Deborah Oakley and Alfredo Fernández-González of the University of Nevada–Las Vegas.

Wondering how a “retreat” mind-set will be possible in a dynamic city like Las Vegas? Visit the Springs Preserve web site <<http://www.springspreserve.org>> to read about this beautiful desert environment that includes the LEED Platinum Desert Learning Center, hiking paths, a sustainability gallery, a design lab and training center, and desert gardens. Accommodations are not available on site, so there will also be opportunities for “Learning from Las Vegas” off-site. More information forthcoming in the winter *SBSE News!* 🖐

—Mark Barnhouse and Cindy Urness

SBSE CALENDAR

2009

Nov 25–27 ANZASca/Launceston, TAS

2010

May 12–14 LightFair Int’l/Las Vegas, NV

May 14–16 SBSE Retreat/Las Vegas, NV

May 17–22 ASES Conf/Phoenix, AZ

Jun 23–26 ARCC/EAAE/Washington, DC 🖐

2009 BALLOT IS POSTED

This year marks the transition to an all-electronic election. Your 2009 ballot is available at <<http://www.sbse.org/announcements/2009ballot.htm>>. For your vote to count you must be a member! If you haven’t already, pay your dues—\$25/year, students \$15/year. Go to <<http://www.sbse.org/membership/newform2.htm>> to fill out your membership form. If you’re not sure of your status look at <http://www.sbse.org/membership/current_members.htm>. You can pay by check or through Paypal. If paying by check, you need to mail the check and membership form to Michael Zaretsky expeditiously. 🖐

—Bruce Haglund

LETTERS TO THE EDITOR

I have been accepted at NUS in Singapore to study for a PhD. My thesis is about total building energy performance. Wish me luck!

—Religiana Hendarti, NUS Singapore

[It's good to hear that our scholarship-supported students are achieving great things, potentially joining our teaching and research efforts for the long haul!—ed.]



I saw a photo in Fuller's latest version of the *SBSE News*, and I think there is an impostor posing as Bruce Haglund ... some good looking guy in a sports coat and no ball cap accepting an ASES fellow award. Bruce should sue and ask for damages! :-) 🖐

—Jane Moore, WNBA



photo: Bruce Haglund

Claude et André—proper hosts, proper shading! Thanks!

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INFLUENCING NAAB

[At the SBSE Retreat, led by Peter Papesch, we crafted a plea that NAAB require all schools teach carbon-neutral design. It fell on deaf ears. Earlier many of us working in Walter Grondzik's Sustainability Topic Group recommended changes to NAAB's criteria for accreditation. Here's what happened. Only two of many NAAB reactions are documented due to space limitations.—ed.]

Below is a comparison of two key draft NAAB criteria, the review comments, and suggestions submitted by the ACSA Sustainability Topic Group during the public review process, and the final published NAAB criteria. The word “key” is relative, but refers to criteria with a role to play in environmentally responsive design (the reason for posting to the SBSE listserv). The Topic Group comments demonstrate consensus among the vast majority of the group, and were submitted directly to NAAB without the blessing or filtering of ACSA.

The big-picture question seems to be “Why is a quasi-government organization such as NAAB allowed to make critical decisions that affect literally millions under the auspices of a closed-door system of decision-making?” Being able to comment on a proposal is not the same as being able to affect a proposal. It seems any progress toward more environmentally responsive design outcomes falls (for the next half decade) fully in the laps of students and faculty.

—Walter Grondzik

This comparison illustrates implementation (or more accurately the general lack thereof) of ACSA Sustainability Topic Group feedback to NAAB regarding the spring 2009 draft NAAB criteria. The commentary that accompanies each criterion is **not** that of the Topic Group, it represents my personal take on the final criteria as posted on the NAAB web site.

Topic Group Comment: We offer one final recommendation. NAAB should immediately adopt the principles of the 2030 Challenge as promulgated by Architecture 2030. If NAAB is to be taken seriously as a positive force in the development of the next generation of architectural professionals, remaining silent on the issue of global climate change is simply inexplicable. Considering NAAB's quasi-government status (relative to architectural licensure), silence on this issue is ethically unambiguous. The message is “do as we say, not as we do.”

- There is no evidence that this simple no-cost statement of environmental concern has been adopted by NAAB.

Topic Group Comment: We suggest that some commitment to environmental responsiveness be made a part of the institutional program criteria. The current proposal places all responsibility for improving the relationship between the built environment and the global environment on the shoulders of students (via their work products) and none of this responsibility falls directly on the administrators of a program or institution. Yet another outstanding (but regrettable) example of “do as we say, not as we do.” In this day and age, no accredited program in architecture should be able to ignore the responsibility to get its own house in order relative to environmental impacts. For the accreditation criteria to be silent on this critical question raises serious ethical concerns.

- There is no evidence that this programmatic requirement (as opposed to student requirements) was adopted by NAAB. It appears that students and faculty will be the environmental standard bearers for the next five or so years (with institutions getting a bye).

[The topic group also provided comments on many individual student performance criteria with very limited success in making substantial change, even in areas of the topic group's particular expertise. For the full breadth of Walter's analysis, see the SBSE list server archives <https://www.lists.uidaho.edu/pipermail/sbse/2009-August/003602.html>.—ed.] 🖐



photo: Peter Papesch

Six past, present, and future SBSE presidents (Bachman, Boake, Theis, Wasley, Guzowski, and Brown) were all smiles at the 2009 retreat.

SBSE PEOPLE

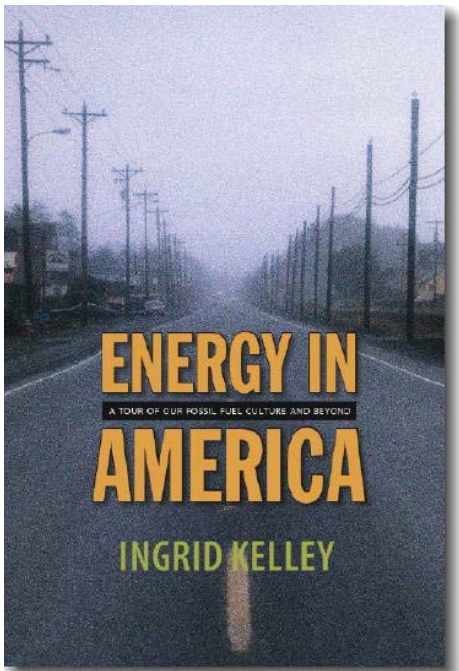
✦ **Harvey Bryan** made a cameo appearance in the August 31 *New York Times* article about underperforming LEED buildings. See <<http://www.nytimes.com/2009/08/31/science/earth/31leed.html>>.



photo: David Kadlubowski, NYTimes

Harvey Bryan makes great strides toward real-time data acquisition at ASU.

✦ **Rajat Gupta** was guest editor for a special issue of the *International Journal of Low-Carbon Technologies*, Oxford University Press with a sustainable energy technologies and low-carbon buildings theme (September 2009), bringing together evidence-based research papers from the UK-India Young Scientists Networking Conference on sustainable energy technologies and low carbon buildings for climate change mitigation convened in New Delhi (India) from 6-8 Feb 2008, by British Council Delhi, Oxford Brookes University, and the Indian Institute of Technology (IIT) Delhi. To access the editorial, abstracts, and papers visit <<http://ijlct.oxfordjournals.org/current.dtl>>.



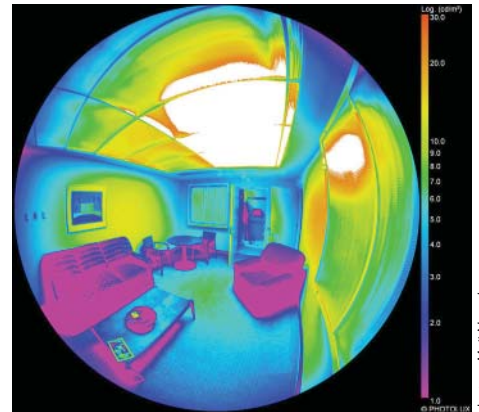
cover: University of Vermont Press

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RESEARCH NEWS

UNIVERSITY OF MICHIGAN—SLEEP AND CHRONOPHYSIOLOGY LAB

A Sleep and Chronophysiology Laboratory (SCL) allows researchers to investigate sleep and biological rhythm regulation using an electroencephalogram to measure brain activity. The SCL has a control room and two identical living spaces called Temporal Isolation Labs in which a volunteer can be closed off from the outside world. The acoustic, thermal, and lighting conditions are regulated by a computer program serving as an integrated building system and environmental simulator. Lighting conditions are equal or scaled to real day and night light levels—equal in duration, intensity, and spectral variance to visual experience in a natural environment—and allow sleep and biological rhythm regulation studies under all lighting conditions. This system makes it possible to create days longer or shorter than 24 hours or 24-hour-days that are synchronized with any time zone. The system can produce dynamic changes for typical clear, overcast, or partly cloudy sky conditions. The comfortable bedrooms with down comforters and muted lighting make the lab seem more like a cozy hotel than a research facility. The system is equipped with an array of T-5 lamps at 3500, 5900, and 10,000°K in walls (window) and ceiling (skylight) with lenses that can be accessed, adjusted, or measured repeatedly by the associated computer to simulate and record conditions at all times of day. These spaces can be used for light therapy to combat such



The fish-eye lens captures realistic and analytic views of the SCL living spaces.

photos: Moji Nawab

problems as depression and sleep disorders, to shed even more light [*pun intended?*—ed.] on the link between sleep and mental illness, and to prepare astronauts for space travel.

—Moji Nawab

RYERSON UNIVERSITY—ECOLOGICAL COSTS OF BUILDINGS

Wind turbines kill birds, but buildings are more deadly. Conservative estimates suggest 100 million birds die in the U.S. every year as a result of hitting glass. Interior landscaping by windows can increase risk as a large leafy plant inside a building can be seen as a refuge: a panicked bird will smack into a window as it attempts to hide. Glass on both sides of a room or building can create the illusion of an unobstructed corridor. Tilting glass down to reflect the ground helps, as do exterior shades, shutters, and markers on the glass.

Buildings and development also cause more complex ecological traps. Many organisms rely on light polarization to identify important habitat for migration, nesting, breeding, or feeding. Pavement, dark cars, glass, and shiny building materials can polarize light and confuse behavior. Birds that can only take flight while on water have been known to land on asphalt at night because of a polarized light signal similar to that of water. Insects that lay eggs near ponds may lay eggs near parking lots for the same reason.

Lights also disrupt organisms. Ten million birds a year may be killed by towers, from attraction to lights and by unseen guy wires. Lights may also encourage migration in the wrong direction (leading baby sea turtles away from the water), stop fish migration, and cause problems for a remarkably wide range of organisms. Environmental costs of electricity include bird kills, estimated at 174 million annually from transmission lines, with more deaths from power plant stacks, mine water pollution, and habitat damage. Design and planning decisions also influence auto/truck collision bird kills, estimated at 100 million per year.

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These problems all play a role in the population decline of once common birds. The Audubon's Society's Christmas Bird Count and Breeding Bird Survey has revealed the alarming decline, up to 80% population loss, for many of our most common and beloved birds.

For design guidance see *Glass: a deadly trap for birds*, Swiss Ornithological Society <<http://www.windowcollisions.info/public/vogelkiller2en.pdf>>; *Bird-Safe Building Guidelines*, Brown, H., et al. 2007; and *Bird safe design guide* <<http://www.birdsandbuildings.org/docs/ChicagoBirdSafeDesignGuide.pdf>>.

—David Bainbridge

AUBURN UNIVERSITY—HELIODONS FIGHT GLOBAL WARMING

Buildings cause about half the global warming due to the large amount of energy they consume, mostly for heating, cooling, and lighting—all highly affected by the sun. Thus, it's imperative that all buildings be solar-responsive to significantly reduce their energy consumption, which requires that architects understand complex solar geometry. Fortunately, conceptually clear heliodons can make learning solar geometry “child's play.” Heliodons make it easy and fun to design highly successful solar-responsive buildings. Presently, most “solar-responsive” designs perform poorly, confirmed by an international survey of shading systems on new buildings. About 90% of east- and west-facing shading systems don't work! Most shading systems on the south façades either don't shade enough in summer or shade too much in winter.

Heliodons can also be called “myth busters.” A heliodon demonstrates that fixed fins don't work very well on the east and west, contrary to common belief. In most cases, high performance is only possible with moveable shading systems. Heliodons also show skylights to be devices that collect maximum solar radiation in summer and minimum in winter. Who would want that? Heliodons don't give opinions; they only reveal the facts.

I've invented two types of “Conceptually clear” heliodons—the best for teaching and design—the Sun Emulator (top) available from High Precision Devices <<http://www.HPD-online.com>> and the Sun Simulator (middle). Free CAD construction drawings are available for the Sun Simulator. You can get drawings for a table-top heliodon (bottom) if you e-mail <lechnnm@auburn.edu>. The Sun Simulator or the table-top heliodon are available from Radian <<http://www.Radian21.com>> or by e-mail <Radian@radian.or.kr> (their web page is still under construction). A single-light heliodon can be obtained from Beijing J-T Science & Technology Co. Ltd. <<http://www.tradekey.com>>.

I make no money from heliodons in any way. I passionately promote them because I'm convinced they're critical tools for fighting global warming. See my scholarly web site <<http://www.cadc.auburn.edu/sun-emulator>>. 🖐

—Norbert Lechner



A student demonstrates the ease of use of the full-scale, conceptually clear “sun-emulator” heliodon.



Fig. 2 The Sun Simulator with hand held remote control unit. —구신 리우
The multi-sun path “sun-simulator” heliodon.



Finely crafted personal table-top heliodons can be constructed from readily available materials.

📖 The University of Vermont Press has published *Energy in America: A Tour of Our Fossil Fuel Culture and Beyond*, by **Ingrid Kelley**. It presents a broad, cultural view of America's energy sector, traditionally the domain of engineers and policy makers, for nonscientists involved in creating sustainable communities. See <<http://www.upne.com/1-58465-640-9.html>>.

🏛️ **Tang Lee** has been appointed to the Canadian Commission on Building and Fire Codes of the National Research Council of Canada. He will serve until August 31, 2014, specifically on Part 5: Environmental Separation. This committee is responsible for the model national building code pertaining to the building envelope, which is often not well understood nor properly designed by architects.

🦋 **Ralph Muehleisen** was recently elected a Fellow of the Acoustical Society of America for “Contributions to Architectural Acoustics and Acoustics Education” and to the Board of Directors of the Institute of Noise Control Engineering.



Gary Siebein plays *Godzilla* to an acoustic classroom model. photo: Gary Siebein

🗣️ **Gary Siebein** presented “Application of Soundscape Techniques” to members of the American Institute of Certified Planners, government officials, architects, university professors, acoustical consultants, engineers, citizens, and environmental enforcement personnel at a joint Symposium hosted by the Acoustical Society of America and the City of Portland on May 19, 2009, at City Hall. The symposium was one of the first of its kind to explore multidisciplinary design solutions to community noise issues.

🦋 **Chris Theis** is officially retiring in May 2010 after a total of 36 years in academia—14 years at the University of Kansas, and 22 years at LSU. LSU will be actively looking for someone with similar interests to replace him. 🖐

OPS AND STUFF

EMERGING FRONTIERS IN RESEARCH AND INNOVATION 2010 (EFRI-2010)

Check out these grant ops from Science in Energy and Environmental Design (SEED) Engineering Sustainable Buildings:

<http://www.nsf.gov/publications/pub_summ.jsp?WT.z_pims_id=13708&ods_key=nsf09606> and

<<http://www.nsf.gov/pubs/2009/nsf09606/nsf09606.htm>>.

[I suggest you all bookmark the EFRI homepage for future reference <<http://www.nsf.gov/div/index.jsp?org=EFRI>>. —cd.]

—Dru Crawley

ENERGY CENTER OF WISCONSIN

The Energy Center is a nonprofit organization that offers energy-efficiency research, consultation, and education. We have architects, engineers, researchers, builders, educators, and others on our staff. Check out our offerings:

Daylighting Collaborative <<http://www.daylighting.org/>>

Energy Center University <www.ecw.org/university>

Free Daylighting Webinar <<http://www.ecw.org/university/ecuevent.php?ecuid=2>>

Accelerating Energy Efficiency: An Executive-Level Webinar Series <<http://www.ecw.org/project.php?workid=6&resultid=380>>

—Dave Vigliotta

ENERGYPLUS AND OPENSTUDIO

There's an upcoming training workshop on *EnergyPlus* and *OpenStudio* (plugin for *Google SketchUp*) just before the October ACADIA conference in Chicago <<http://www.acadia.org/acadia2009>>. For information about this event and about *EnergyPlus* training visit <<http://www.gard.com/training.htm>>.

—Dru Crawley

RETScreen 4 SOFTWARE UPDATED

An updated version of the RETScreen Clean Energy Project Analysis Software was released on May 26, 2009. Download RETScreen 4 (44 MB) from <<http://www.retscreen.net/ang/identification.php>>. 🖱

—RETScreen International

REVIEWS—CONFERENCES AND BOOKS

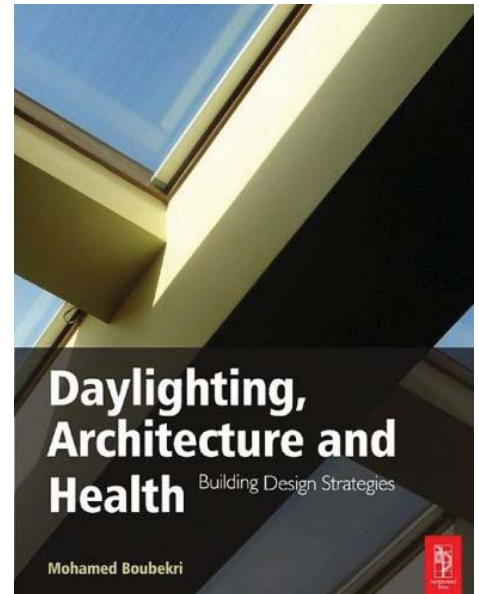
DAYLIGHTING, ARCHITECTURE, AND HEALTH

Mohamed Boubekri advocates increased daylight and sunlight in buildings. This idea, of course, is nothing new, but rather than preaching to the converted, Boubekri provides a comprehensive outline of current research showing the positive effects of daylight and sunlight exposure. *Daylighting, Architecture and Health: Building Design Strategies* (Architectural Press, 2008) provides a single, accessible source of information on the health benefits of getting adequate daylight and sunlight. The book begins with a summary history of daylighting and sunlight in architecture and continues to include modern solar legislation and the building code's historical relationship linking daylight, human health, and productivity. It is important to note that the book makes a distinction between sunlight, true full-spectrum light (including UV), and daylight (typically lacking the UV range).

In the sun-averse culture we live in, where good parents are almost defined by the SPF number on their children's sunscreen bottle, Boubekri effectively addresses concern about sun exposure, not by dismissing it, but by providing the data on both sides of the argument, showing that the physical and mental health benefits of increased exposure (compared to that of the average American) are greater than the risks. We simply do not get enough sunlight and daylight.

Despite the wonderful synopsis on the history of daylighting and human health there were some missed opportunities in the daylighting strategies section. Boubekri spends relatively little time on methods to incorporate more sunlight in our living and workspaces. Daylight apertures and technologies are addressed, but increasing sunlight through true outdoor spaces like atria or U-shaped buildings is missed. Still the summary of daylighting strategies is a fine, clear, and succinct overview of daylighting techniques, perfect for incorporating in a survey course on environmental controls.

—Sam Jensen Augustine



cover: Architectural Press

BTES CONFERENCE, ALBUQUERQUE, NEW MEXICO – AUGUST 2009

The second official Building Technology Educators Society conference was held at the University of New Mexico. BTES is a parallel organization to SBSE—a group of educators whose interests align more closely to the teaching of construction, materials, and structures—but whose membership currently overlaps SBSE. People who teach construction and sustainable design found the BTES event of significant interest and a nice complement to the SBSE Retreat.

The idea of the BTES emerged at a gathering of structures and construction professors, held at the University of Wisconsin–Milwaukee in 1996, hosted by Gil Snyder. The group made a further attempt to form an official organization post-Taos SBSE Retreat 1998, when Ed Allen and Chris Luebke organized another gathering parallel to ours. In 2006, the first official BTES Symposium was held in College Park, MD, organized by Deb Oakley and Ryan Smith. With Ed Allen as Keynote Speaker (you can download a copy of Ed's speech on the BTES web site <<http://www.btesonline.org/maryland.html>>) much enthusiasm was harnessed. A highly successful event, its outcomes included the formation of an incorporated BTES with official 501C status.

Much of the incentive behind the formation of this group lies in the demise of the ACSA Technology Conference, last held in Portland in 2002. Although the ACSA Annual Meeting provides a “technology track,” the overwhelming consensus of the group was that it failed to provide a collegial atmosphere for exchanging teaching ideas with like-minded professors. Where we at SBSE hold an annual retreat, it was decided that BTES would follow the peer-reviewed paper

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CALLS

LIGHTFAIR 2010

The call for speakers deadline is October 2. Details at <http://www.lightfair.com/convdata/lightfair/brochures/09212_LFI10_CallSpeakers_RD9.pdf>.

ARCC/EAAE RESEARCH CONF 2010

Abstract submittal deadline is October 15. See <<http://www.arccweb.org/call2010c.pdf>> for details.

ASES SOLAR 2010

Solar 2010 will consist of three “technical” tracks (Active, Passive, and Policy). Abstracts and proposals are due November 9. For more information about presenting your work at SOLAR 2010 see <<http://www.solar2010.org/participate>>. 🖐

JOB OPS

LAWRENCE BERKELEY LABS

We’re seeking a Mechanical Engineer Post-Doctoral Fellow to join our Heat Island Group, part of our Environmental Energy Technologies Division. The Heat Island Group studies ways to save energy, improve air quality, and slow global warming by passively cooling cities in summer. With guidance and supervision from scientists, the candidate will participate in projects to quantify the benefits of cool surfaces for roofs, pavements, and cars. For more info visit <<http://eetd.lbl.gov/r-bldgsee-crhi.html>>.

This one-year appointment has the possibility of renewal based on performance and continuation of funding. In order to be considered, your application must include a single, uploaded document that includes your CV/Résumé and one relevant publication. However please note our application system has a maximum uploadable document size of 1.5MB. Apply online at <<http://jobs.lbl.gov/LBNLCareers/details.asp?jid=23353&p=1>>.

—Ronen Levinson

RESEARCH AND DEVELOPMENT LEADER—SUSTAINABILITY

Lead a staff of 8 PhDs and other researchers toward further development and implementation of the entire company’s sustainability program—involving greening of company products and facilities as well as accelerating energy efficiency improvements in the built environment. For details contact Rick Springer, PrincetonOne Search, 440.243.5151 x-235 <rick.springer@PrincetonOne.com>. 🖐

—Rick Springer

conference model. There are significant numbers of young, tenure-track faculty in BTES, and with the demise of the ACSA Technology Conference, BTES felt that more opportunities needed to be created to help with peer-reviewed publications. The first symposium’s proceedings are available through Lulu <<https://www.lulu.com/commerce/index.php?fBuyContent=2492185%2522>>, or you can download a free pdf from the BTES web site.

It took three years to get the organization, well, organized. Diane Arm Priest and some helpful law students at the University of Idaho assisted with the legal issues. The initial organizing committee became the Board of Directors, and elections were held. Christine Theodoropolous (also SBSE) is the current President with Deb Oakley (now at UNLV and coincidentally working on the site logistics for the SBSE Las Vegas Retreat in 2010) is the President-Elect.

The theme of the New Mexico conference was “Assembling Architecture.” The conference was held in the recently completed architecture building designed by Antoine Predock. The day before the conference an adobe workshop was held—was it about pixels and digital images? No, we learned how to make mud bricks and restore traditional New Mexico buildings. Francesco Uvina (UNM) provided a fascinating run through of the advantages of lime and mud vs. cement. The conference papers were varied and the shared teaching pedagogies engaging—a worthwhile experience. I’ll go again! In fact, my colleague from Ryerson University and I are bidding to host the next BTES conference in Toronto in August 2011. Stay tuned. Maybe SBSEers will be ready to hike north again and participate in what is to be a very “urban” event. For more information on the BTES, please check out <<http://www.btesonline.org>>.

—Terri Meyer Boake



Hard hats, soft hats—no problema for adobe makers.

photo: Terri Meyer Boake

HOW TO DO A FIELD TRIP

We planned to take 50 students from LSU and the University of Louisiana Lafayette (ULL) on a 3-day field trip to a place on the central Louisiana coast called Chenier au Tigre, accessible only by boat. When I left Baton Rouge on Thursday afternoon the forecast for the weekend was a 40% chance of rain, typical for this time of year—not a problem. After managing to get 34 LSU students successfully to a motel in Abbeville and awake at 5:30 Friday morning, the forecast upgraded to 80% rain. We pushed on to the coast to meet the boats. We made one attempt to get to the site with half the students, but were turned back by rough water. At this point we aborted the mission and sent the students home. However, there were still several students and faculty who camped on the site, having set up in advance.

We experienced 100% rain with frequent squalls and unusually cool temperatures. It was like something out of “Survivor.” I don’t think I’ve been so wet for so long in my life. And there were mosquitoes! 🖐

—Chris Theis



Chris Theis (yellow slicker), Michael McClure (ULL), and three students smile in spite of the downpour on the Chenier Plain.

photo: Ursula Emery McClure

CND ZED WORKSHOPS GO TO ECUADOR!



photo: Tisha Egashira

Bruce Haglund critiques Marisa Vintimilla's team's Zero-Energy Design Charette solution at the 3-day CND workshop conducted at the Universidad Catolica de Ecuador in Quito and sponsored by the university and ENNE Arquitectos.

THE ILLEGAL-DRUG OPERATIONS PROFESSOR

Tang Lee (University of Calgary) has been testing and remediating former illegal drug operations such as grow-ops (marijuana) and methamphetamine labs. He was retained to provide guidelines for the assessment of such facilities based on occupant health and building code standards. One of the issues is the necessary background, education, and training to qualify as consultants and remediation contractors. It seems the best qualified professionals are architects with specialization in building envelopes, along with some training in industrial hygiene, microbiology, mechanical engineering, and similar disciplines. Tang also proposes that qualified professionals take a university-level course specific to the remediation of former illegal-drug operations. 🖐

—Tang Lee



photo: Tang Lee

Tang Lee and his staff suitably dressed for entering an illegal-drug house.

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WINTER ISSUE SUBMITTAL DEADLINE—DECEMBER 1

FIRST CLASS MAIL