

photos: Steve Dent

From Chacoan ruins to Antoine Predock's UNM School of Architecture, SBSEers have the opportunity to explore New Mexico during this year's retreat.

JOIN US AT RETREAT 2011 ALBUQUERQUE

Deadlines are fast approaching! It's time to commit to joining the 2011 SBSE Retreat (June 15–18). Ed Mazria will be our guest and opening night speaker at a dinner event at the homey and relaxed La Placita Dining Rooms in Old Town Albuquerque <<http://www.laplacitadiningroom.com/>>. Please secure your slot for the retreat now, and join us. You might know Ed as the founder of Architecture 2030 and/or for his numerous publications, among them *The Passive Solar Energy Book*. You can read about his celebrated career and many awards at <<http://architecture2030.org/about/leadership>>.

SBSE is delighted to host this event and grateful to have a speaker of Ed Mazria's prominence to launch this year's Retreat. Those SBSEers who have been to one retreat make it a point to return—so many have become perpetual participants—and we always look forward to welcoming new participants. We have a very affordable and valuable experience to offer—Ed Mazria, meals, lodging, workshops, networking, field trips [*Chaco Canyon beckons! See p.6 for more Retreat info.—ed.*], and lots of other built-in fun.

Most events will be held at the Los Poblanos Inn <<http://www.lospoblanos.com>>. Lodging is arranged at the culturally distinct old town Hotel Albuquerque <<http://www.hhandr.com/albuquerque.php>>.

The March 21 deadline for retreat workshop proposals is fast approaching, so please submit your proposal to <LBachman@mail.UH.edu> so we can finalize the agenda. See details on our web site <<http://www.SBSE.org/retreat/retreat2011>>.

Don't miss out; make your arrangements to attend the retreat today. See you there! 🖐

—Leonard Bachman

SBSE CALENDAR

2011

- Apr 20–24 ARCC Conf/Detroit, MI
- May 16–21 ASES Conf/Raleigh, NC
- Jun 15–18 SBSE Retreat/Albuquerque, NM
- Jul 13–15 PLEA/Louvain-la-Neuve, BE
- Aug 4–7 BTES Conf/Toronto, ON 🖐



photo: Steve Dent

This gate leads to the entry court of San Felipe de Neri church on the Albuquerque Old Town Plaza.

WORDS ON WORDS

[No LTE, so this from the list server.—ed.] We take words and differences between them seriously. The authors of the U.S. Constitution argued through many nights over the differences between “wealth” and “prosperity.” At the onset of sustainability, there were disagreements between “sustainable design” and “sustainable development,” the latter an oxymoron (?). 1970s solar pioneers argued “passive” vs. “active,” as if it were a dividing line, crossed at peril of one’s soul, or at least, one’s credentials. We now position our work as “zero-net-impact, positive energy, carbon-neutral,” and so forth. Folks overhearing from the outside might call this “tech-speak.”

For the scientist and scholar, words are the currency of accurate description and denotation. In the communities of the sciences and rigorous scholarship, one has to be clear—we use words along with numbers, models, and artifacts to denote facts and concepts. Agreements on words help us create common purposes and thus, prepare for the future. Clear speaking, writing, and thinking are essential.

Poet and fiction writers use words for nuance and connotation. Words are beautiful things. They express our deep emotions, never sufficiently. As the basis of a critique, often as a written essay put forward as a creative work in itself, they form our perception. One can find the words of the poet in the pub down the street or in a good book or essay, requiring our mastery of words and the intonations and meanings they may call up.

I would not deny any of these possibilities. I have seen both abilities—of precision and of poetry of language—in the same writing, and in that, its best expression. 🖐

—Don Watson

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A RENEWED CALL TO ACTION

The robust membership rolls of SBSE and BTES indicate the value these organizations represent to their members. The information exchanges that take place and the support that members receive from colleagues on many different fronts are very impressive.

Now and again there is a bat squeak of complaint that studio instruction does not place greater value on the contribution of and collaboration with architectural engineers, technology professors, and environmental engineers. This concern constitutes a very real problem for architecture and related professions in the building sector. Climate change is upon us and has altered all the rules of the world, including those by which the building sector professionals have traditionally operated. Climate change mitigation—instead of aggravation—requires a complete re-ordering of the tools, skills, and methods that are already known and practiced by cutting edge professionals. Broadly summarized, these are Integrated Project Delivery (IPD), Building Information Modeling (BIM), and Modular Building Delivery Systems (MBDS).

[I’d predicate this list of techniques with solid passive design strategies appropriately implemented. Employing passive design solutions reduces the need for higher technologies and addresses the human dimension in design.—ed.] Moreover, these tools, skills, and methods need to be applied within a green mind set in order to practice ecodesign, which David Orr declares as “the careful meshing of human purposes with the larger patterns and flows of the natural world. ... The subject comes down to the one big question of how we fairly, durably, and quickly remake the human presence on Earth to fit the limits of the biosphere while preserving hard-won gains in the arts, sciences, law, the open society, and governance, which is to say civilization.” (citing David Orr, *HOPE Is an Imperative*, Island Press, 2011, p xvi).

Professional schools must change their curricula to instill such a mind set and to provide their graduates with the above-mentioned cutting edge tools, skills, and methods. Many schools, inspired or driven by students’ demands as well as by requests from building sector professions, are struggling to offer, but usually do not require, the full complement of this skill set. Thus, it is important for professional education organizations to lend their voices and their credibility by re-submitting the eloquent recommendation that SBSE crafted at its 2009 retreat to the National Architecture Accreditation Board (NAAB) and its collateral organizations—AIA, AIAS, ACSA, and NCARB:

That NAAB and CACB/CCCA set as a Condition for Accreditation that every North American architecture school’s curriculum provide all graduates with the theoretical and practical competence to consistently design high-quality, carbon-neutral/zero net energy built environments.

Schools need this inspiration so the combination of conditions from the accreditors and clamors from their students will result in effective curricula forged by the ingenuity of their respective faculties. And building sector professions need the next cadre to be properly equipped to address climate change mitigation and to practice ecodesign.

I urge you to lend your individual voices to this common-sense recommendation, ask your administrators or boards of directors to vote on the recommendation, then send a strong message from your organization to the accreditors and to the schools where you labor so diligently. 🖐

—Peter Papesch



Peter Papesch in action at SBSE in Québec City.

photo: Bruce Haglund

REPORT TO THE COOK CHARITABLE TRUST

Two Cook Trust-endowed scholarships were awarded to faculty from developing countries to support attendance at the 2010 SBSE Retreat at the Springs Preserve in Las Vegas, NV, last May. These scholarships—\$940 per person (\$440 for retreat fees and \$500 for travel support)—were received by Noureddine Zemmouri (Algeria) and by Vanessa Gomes (Brasil). Gomes declared, “My time at the SBSE retreat was very successful and rewarding. The information exchanged was invaluable, as well as the opportunity to encounter Las Vegas from a perspective that I would probably not be able to experience in any other context. Following my stay in the U.S. this year, I will intensify my teaching activities in the field of Building Science. I will disseminate specific acquired knowledge when I return to my home country and institution. The true affect of my grant is just beginning to blossom. By making important connections, such as the ones I made during the retreat, I am multiplying the effects of my grant beyond my own experience, and I hope to profoundly contribute to the goal of strengthening ties among researchers, educators, and individuals from the U.S. and from other countries. I hope to be able to take part in future gatherings and maybe even organize one in Brasil in the upcoming years. I end this note reaffirming that I am completely at the Trust’s service to help articulate the reach of the Cook Trust’s actions in the future.”

A call for applications for Cook Trust-endowed scholarships to support developing-country faculty attendance at the 2011 SBSE Retreat (Albuquerque, NM, this June) has been developed and posted to the SBSE web site. We hope to offer two awards again this year—each with a value of \$950.

There was no PLEA conference in 2010, thus the Cook Trust student PLEA scholarship was not offered. SBSE is in the process of selecting two recipients for the Cook Trust student PLEA scholarship for the 2011 PLEA conference in Belgium. Around 20 applications were received from an international group. The decision on recipients should be made within a week, and the applicants will be so notified. Each scholarship is valued at \$1,000.

Selection of recipients for all these awards is handled by the SBSE Scholarship and Awards Committee with a dedicated sub-committee of at least three members formed for each scholarship opportunity. Because of the high interest in the PLEA scholarships, contact was made with PLEA leadership to see if the Cook funding might be leveraged by funds from PLEA donors to expand the number of scholarships available each year. A response is pending.

In summary, SBSE is very pleased to act as the conduit for these funds from the Jeffrey Cook Charitable Trust. We believe that the funds are being put to outstanding use and are accomplishing their intended purpose. We hope to be able to continue to support students and developing-country faculty in the coming years through continuation of our relationship with the Trust.

—Walter Grondzik

MORE SBSE SCHOLARSHIP OPPORTUNITIES

Please see the SBSE Scholarships and Awards web page <<http://www.sbse.org/awards/index.htm>>. All have a relatively quick turn around, so look now if you are interested. The following opportunities are currently active:

1. Student scholarships for the SBSE Retreat (fees and travel)
2. Developing-country faculty scholarships for the SBSE Retreat (fees and travel)
3. Student travel scholarships to Solar 2011
4. Student ASES Best Paper Awards
5. Malcolm Wells Memorial Design Award for exemplary work that embodies the Wells ethos.

Due dates, expectations, criteria, and application requirements are all posted to the SBSE web site. The clock is ticking ... 🙌

—Walter Grondzik

ELECTION NEWS

SBSE ELECTIONS AFOOT

SBSE is now entertaining nominations for President-Elect and Secretary/Treasurer for two-year terms beginning November 1, 2011. You may self-nominate or nominate a colleague to these vital posts on the SBSE Board. Please submit your nomination to any SBSE Board member <<http://www.sbse.org/contact/index.htm>>.

—Bruce Haglund

2011 ASES BOARD ELECTION RESULTS

At the recent February ASES Board meeting, Mary Guzowski* was welcomed as the Solar Building Divisions Representative, and architect David Panich* was welcomed as the Sustainability Division representative. The ASES Board also created the position of “Honorary Past-Chair,” a non-voting member of the ASES Board. As its first occupant, the ASES Board selected John Reynolds*, an ASES member since 1975 and most recently the Immediate Past Chair of the ASES Board. Now, Margot McDonald* is Immediate Past Chair.

—John Reynolds

2011 BTES ELECTION RESULTS

The results of the 2011 Election are in. Thanks to all the willing nominees.

RESULTS

Pres.-Elect: Terri Meyer Boake*
(Waterloo)

Secy/Treas: Franca Trubiano (Penn)

Board Members: Linda Brock* (UBC)

Rashida Ng (Temple)

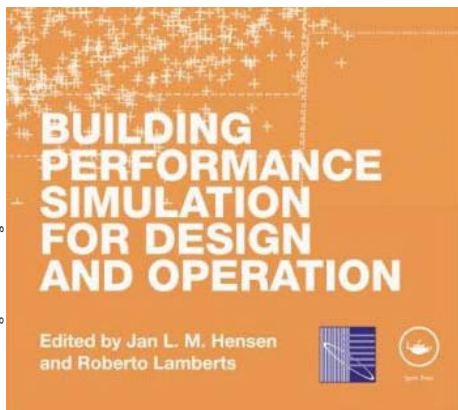
Patrick Tripeny (Utah)

Thanks to all the outgoing leadership—Deborah Oakley who has served in BTES since its inception, Shahin Vassigh who has faithfully served as Secretary since 2008, Diane Arm-priest*, Don Hunsicker, and David Peronnet who have served as board members and organizers since BTES’ inception. Without these individuals BTES would not exist.

We hope to see many of you at ACSA this year at the special session. We will have two panel discussions made up of BTES members and many others who are interested in the organization. We especially look forward to the conference this summer put on by Terri Meyer Boake and Vincent Hui. Thanks, everyone! 🙌

—Ryan E. Smith*

[*SBSE members serving our collateral organizations!—ed.]



✳ *Building Performance Simulation for Design and Operation*, edited by Jan L. M. Hensen and Roberto Lamberts, includes contributions by Dru Crawley. Produced in cooperation with the International Building Performance Simulation Association (IBPSA), this book provides a unique and comprehensive overview of simulation for the complete building life-cycle from conception to demolition. It is primarily intended for advanced students in building services engineering and in architectural, environmental, or mechanical engineering. It will be useful for building and systems designers and operators.



🏠 **David Lee Smith** has penned *Environmental Issues for Architecture*, which provides architecture and interior design students the larger picture without overwhelming details. Exploring subjects that are not emphasized in traditional classrooms, this timely book shows how architects and designers can successfully transform their ideas in ways that allow them to expand their professional services and play a more important role in the building design process. 🖐

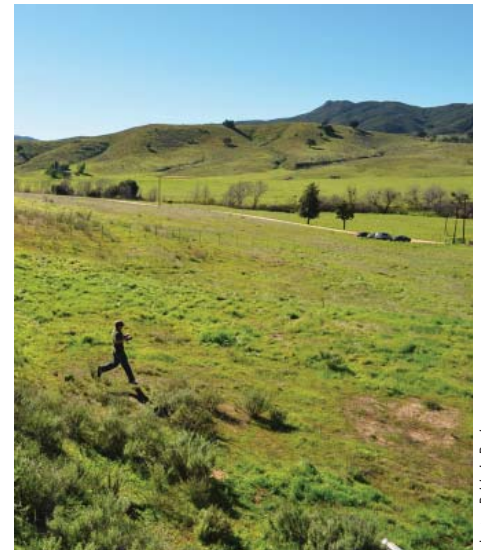
CAL POLY POMONA: NCARB GRANT

California State Polytechnic University, Pomona, was among three 2010 NCARB Grant winners, a monetary award to support new projects that further the integration of education and practice. Cal Poly Pomona was awarded \$4,000; and the University of Hawaii at Manoa and North Carolina State University received \$3,000 each. For full information see <<http://www.ncarb.org/News-and-Events/News/2011/01-NCARB-Grant.aspx>>.

The NCARB Grant for the Integration of Practice and Education in the Academy is awarded annually to schools to implement new for-credit curricular initiatives that integrate practice and education. Grants are given to programs that desire to turn good ideas that might involve risk into reality; have a long-term effect on students, faculty, the curriculum, and the profession; and give other schools innovative ideas for initiating new programs. To be eligible, schools must be NAAB accredited (or in candidacy) and located in an NCARB Member Board jurisdiction.

The proposal submitted by the Cal Poly Pomona couples teams of students with architects and city officials through a joint venture between the school's architecture department, HMC Architects based in Los Angeles, the City of San Diego, and the Federal Emergency Management Agency (FEMA). Students will design low-cost, sustainable homes; assist in construction planning; and then analyze the performance of two dwellings to replace those destroyed by raging wildfires on public land in San Diego County in 2007. Goals for the structures are reduced environmental impact and maintenance costs, greater durability, and fire resistance.

—Pablo La Roche and NCARB



One of the Cal Poly Pomona students checks out the San Diego County site—plenty of solar resource available!

MICHIGAN: PLANTS AS METERS IN BUILDING COMMISSIONING

USGBC guidelines encourage the effective use of daylighting in the architecture and design of buildings. Daylighting systems and good indoor air quality are common features of sustainable building design that influence the occupants' well-being and productivity. Carbon dioxide-absorbing plants are as much a part of the design of today's interiors as are lighting and furniture. Hence, the interior landscaping industry has grown ten-fold in the last decade, and there are few buildings constructed today without some major effort given to interior landscaping. However, there is reported plant loss of 20–40% each year for all interior-scape projects due to qualitative and quantitative problems with soil, water, drainage, planters, lighting systems, and available daylight.

Collaborative research efforts between the University of Michigan's College of Architecture <<http://www.tcaup.umich.edu/>> and School of Natural Resources & Environment <<http://www.snre.umich.edu/>>, with support from industry representative Planterra <<http://www.planterra.com/>> have provided opportunities to examine the effects of lighting design, examining the application of various electrical light sources with different spectral power distribution (e.g., Incandescent, Fluorescent, HPS, HID, LED, and Light Pipes with HPS light or daylight). The plant growth and acclimatization under these lighting conditions are being investigated at UMichigan's Matthaei Botanical Garden Conservatory (MBG) <

Moji's instrumentation ascertains that the spectral distribution of electric lighting in the MBG simulates that of daylight.

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lsa.umich.edu/mbg/plan/hours.asp>. The MBG provides an indoor environment for plants from many warmer regions of the world. The garden space is divided into three different thermal climatic conditions—tropical, temperate, and arid.

The results of our first-year measurements of variables essential to plant’s growth within the MBG conservatory indicate that acclimatized plants could play a major role in verifying daylight design integration. Properly selected plants strategically located throughout the building can serve as a measuring system or “Plants as Meters.” Plants have little control over their living environment and do not require Survey Monkey to measure their preferences within some statistical scale as to whether or not they are “somewhat” satisfied with their living/working environment. By the time the plant is in a defoliated state, it’s too late and indicates the poor status of the occupants’ indoor environment. Our latest results support the use of plants in LEED-candidate buildings as a passive commissioning protocol/procedure that measures the validity of the design’s claim of successfully implemented integrated lighting design without incurring major cost to the owners.



photo: Rajat Gupta

Rajat Gupta poses amid Oxfordshire symbols of sustainability—straw bales and wind turbines!

To undertake such an integrated evaluation, the research program is divided into two core elements: community-led action research and a program of monitoring and evaluation of the DECC-funded interventions on energy consumption.

Besides the academic community and policy-makers, community groups across the UK and abroad will have access to research findings. The key outputs of the EVALOC project will include a community engagement toolkit that will provide usable materials and guidance for community energy projects and a map-based interactive community energy monitoring toolkit that will extend the capability of the RIBA award-winning, carbon-counting DECoRuM model <http://www.decorum-model.org.uk> to present results dynamically on the influences and effectiveness of low-carbon interventions to community groups. 🙌

—Rajat Gupta

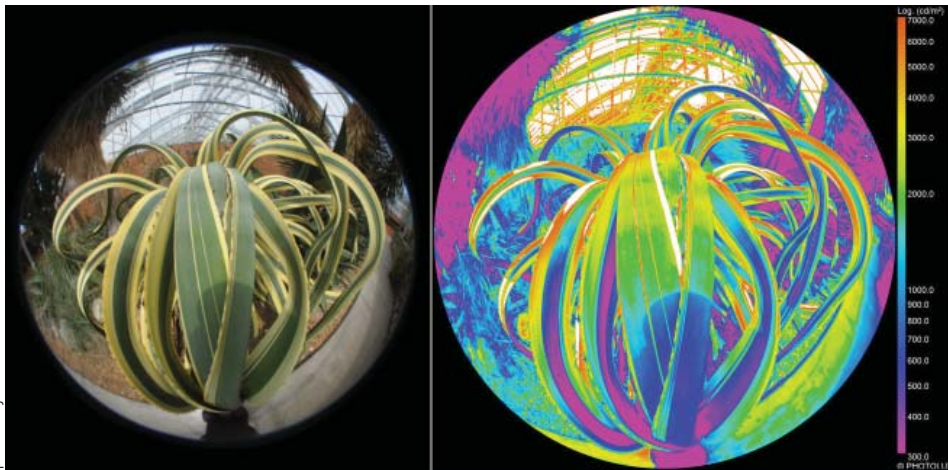


photo: Moji Navab

Moji employs analytical photographic technique to study a plant’s luminous environment.

Providing clear direction to the building industry for controlled environments in which plants grow is essential. The investigation of optical radiation and other environmental parameters provides new opportunity to identify current optical sources suitable for plant culture. The final findings of this collaborative research effort will be published as part of a report for the International Commission on Illumination (CIE) Technical Committee TC 6-42, Lighting Aspects for Plant Growth in Controlled Environments <http://www.cie.co.at/>.

—Moji Navab

OXFORD BROOKES: LOW-CARBON COMMUNITIES

Rajat Gupta has been awarded a major research grant of £1.14 million by the UK Economic and Social Research Council (ESRC) to lead an interdisciplinary research team from Oxford Brookes University (OBU) and University of Oxford (OU) in a three-year project. The EVALOC project seeks to evaluate the impacts, effectiveness, and success of Department of Energy and Climate Change (DECC)-funded, low-carbon communities on localized energy behaviors.

The EVALOC project, which started in January 2011, brings together social science and building science-based disciplines to assess, explain, and communicate the changes in energy use due to community activities within six selected low-carbon communities funded under the DECC’s Low Carbon Communities Challenge (LCCC), a government-supported initiative to transform the way communities use and produce energy, and build new ways of supporting more sustainable living. The six geographical low-carbon communities represent: best-practice low-carbon interventions, socio-economic status (affluent and non-affluent), and track record in achieving carbon reductions. In the EVALOC project, these low-carbon community projects will be evaluated in terms of their effects on changing individual and community energy behaviors, effectiveness in achieving real-savings in energy use and carbon emissions, and success in bringing about sustained and systemic change.



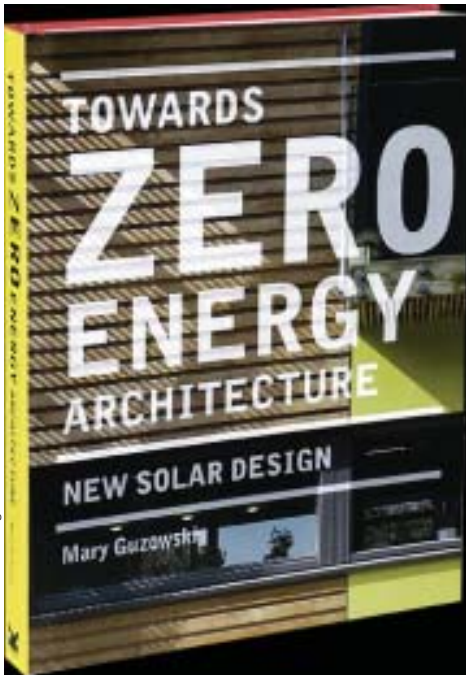
photo: Steve Dent

An unnamed courtyard in Old Town Albuquerque.

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BOOK REVIEW NOOK

TOWARDS ZERO ENERGY
ARCHITECTURE: NEW SOLAR DESIGN



book cover: Laurence King

With this offering Mary Guzowski markets the gap between technical dossier and design coffee-table book. Beautifully illustrated and photographed, the images are lush. Each building profile includes plans, sections, and elevations as well as climate data on each of the building's locations. Green building diagrams, produced by the designers (I assume) are often included as well.

What is missing from the book is serious evaluation of the green strategies and how they are expected to function within the design. The book could have gone much further and linked the technical reasoning behind the selection of various strategies and how they relate to the specific climate illustrated. The climate data is helpful and explanatory, but could just as well apply to any building at the location of the designs showcased. Analysis of each project's expected performance would have gone far to solve this shortcoming. Still the design community and technical performance advocates need books like *Towards Zero Energy Architecture* to show that design and performance is not a zero-sum proposition. 🖐

—Sam Jensen Augustine

SBSE RETREAT: ALBUQUERQUE INFO

GETTING HERE

Air: Nonstops from about 30 cities (most by Southwest Airlines)

Car: Albuquerque is located at the intersection of I-40 and I-25

Train: Accessible by Amtrak

WEATHER IN JUNE

Average high temperature:	89°F
Average low temperature:	59°F
Average relative humidity:	28%
Percent possible sun:	85%

In other words, warm to hot and very dry days with cool evenings.

RETREAT HOTEL: HOTEL ALBUQUERQUE

Located ¼-mile south of I-40 on Rio Grande Blvd. (Rio Grande Blvd. is approximately 2 miles west of I-25 on I-40) <<http://www.hotelabq.com>>.

RETREAT VENUE: LOS POBLANOS HISTORIC INN AND CULTURAL CENTER

Los Poblanos' stated mission is "to cultivate a conservation ethic by preserving the agricultural fields, formal gardens, and the important New Mexican art and architecture of the Historic Los Poblanos Ranch through sustainable practices."

Located on Rio Grande Blvd. about 3 miles north of the Hotel Albuquerque. <<http://www.lospoblanos.com>>

GENERAL ALBUQUERQUE VISITOR INFORMATION

See <<http://www.itsatrip.org>>, a comprehensive web site for all visitor information. Albuquerque has a wealth of museums, Native-American sites and casinos, a great zoo, hiking, biking, and golf. The terrain varies from the Rio Grande valley at 5000' elevation to the crest of the Sandia Mountains on the east at 10,678'. Come early (Tuesday, 14 June), and enjoy a barbeque at Steve Dent's house in the mountains above Albuquerque.

OPTIONAL EVENTS



photo: Steve Dent

Saturday, June 18 at 8:00 a.m., our van leaves for Chaco Canyon National Historic Park for an all day tour (\$35). Other tours may be offered, depending on interest (e.g., Santa Fe and Bandolier National Monument, passive solar homes, Acoma Pueblo). 🖐

—Stephen Dent

STUFF FOR YOU

CONNECTOR GOES ONLINE, ARCHIVAL ISSUES INCLUDED

Connector is a semi-annual newsletter that Edward Allen established in 1992 and edited its first eight years. In 2000, Christine Theodoropoulos (Oregon) assumed the editorial role. Its primary goal was to connect building technology educators posting their best teaching pedagogies, practices, methods, strategies, and tactics in a "... highly informal publication." Great examples of structures, construction, and environmental classes were shared openly with events, news, and even criticisms of technology trends.

At its 2009 conference at the University of New Mexico, BTES decided that *Connector* would become the primary forum for the dissemination of News and Teaching ideas for the society. Now, all 24 issues of *Connector* have been scanned and uploaded to the BTES web site for your perusal and enjoyment <<http://www.btesonline.org/connector.html>>. Several people who helped with this effort—Daniel Alexander, Edward Allen, Terri Meyer Boake, Joseph Defarias, Mark Sidla, and Christine Theodoropoulos, —deserve a big "Thank You!"

The new era of *Connector*—This notice is a call for your best teaching tips, stories, ideas, images, research methods, questions, provocations, and other bits you would like to share with colleagues. Whereas the *Connector* of yesteryear was printed, the new *Connector* will be an exclusively online forum. Please send your submissions for the first e-issue of *Connector* to be published this spring. Send submissions via email to <rdermody@rwu.edu> as a .doc with embedded images. Files cannot be larger than 5MB.

Deadline is April 1. Let's connect!

—Bob Dermody

ART AND DAYLIGHTING

Explore museums from around the world (like the National Gallery in London pictured here), discover and view hundreds of artworks at incredible zoom levels, and even create and share your own collection of masterpieces. See <<http://www.googleartproject.com>>.

—Truett James



Image: Google Art Project

A RENEWABLE ENERGY WORLD?

I assume many are already aware of *The Energy Report* at <<http://www.panda.org>>, which claims, "*The Energy Report* is a bold, new vision of a world run entirely on renewable energy by 2050. It shows that such a transition is not only possible, but also cost-effective, providing energy that is affordable for all, and producing it in ways that can be sustained by the global economy and the planet." It is an optimistic, convincing, and useful teaching resource.

—Truett James

ASHRAE'S GUIDELINE 10

Another valuable resource, hot off the press, is ASHRAE's new Guideline 10, *Guideline 10-2011: Interactions Affecting the Achievement of Acceptable Indoor Environments* <http://www.techstreet.com/cgi-bin/detail?product_id=1771697>. Among the committee members who produced this new guideline are Walter Grondzik, Michael Humphreys, and Alison Kwok—all well-known to the SBSE community. 🐾

—Hal Levin

Connector

Volume 1
Number 1
Winter 1992
A Forum for Teachers of Technology in Schools of Architecture

Designing Details

Dear Colleagues: The final touch is one which comes at the end of one School's construction curriculum and one in which the students have supposedly learned so much about performance issues that they can intelligently appreciate their own. The main purpose of the course is to allow students to develop beyond the generic aspects of what they've already learned, and to carefully generate their own details, with well-considered design as the primary focus. The goal of the class work center on how to detail a building trade.

I begin by giving the students a series of exercises which establish the basic framework for the way I want them to look at details for the duration of the course. These exercises are based on what I consider to be important intersections of building parts, and key areas in need of careful detailing. These are four areas around which I build the exercises:

1. The building as it meets the ground and the first floor.
2. The top of the building and its roof deck as either an eave or a parapet.
3. The building at a typical window opening, which includes its spandrel and floor connections and
4. The building as it turns the corner, where two vertical planes intersect.

Each exercise addresses one of these four intersections and is organized somewhat like the proverbial Chinese menu in which a number of different possible combinations from different "type" columns are made available. These combinations create several specific structural types and specific details.

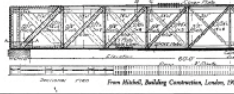
These structural types are identified: Load bearing wall, hipped roof, beams, and ceiling joists. The theory

behind establishing these types is that they represent the basic ways in which an enclosure system interfaces with the structure and thereby affects its architectural design expression.

There is one assignment for each of the intersections. All students are required to undertake their design of the intersection using the structural

type and the enclosure material assigned to them. When they understand the new exercise, the structural type and enclosure material are rotated. This ensures against any student ever receiving the same combination of material and structural type.

Each exercise is provided by a slide presentation from my personal collection.



From *Architectural Detailing*, London, 1991

Polarities: Teaching Structures

We spend far too much time teaching calculations, which are the least important thing about structural design. It's much more important that students learn real-world structural concepts and develop structural intuition. We should spend much more time teaching students to select an appropriate structural material and system for any building, lay out the system in a way that works well with the building's form and space, and analyze approximate sizes to the structural members. The exact sizing of members will be done usually by engineers and computers in the real world; as architecture students need be taught only a basic repertoire of calculations.

When do your thoughts fit in the questions between these poles? We will post the most interesting responses.

The mathematical underpinnings of structural design are wonderfully elegant and clear. They give us an ideal way of unraveling the mysteries of structural behavior and developing in students an intuitive sense of how structures work. They lend naturally to a concentration of detailed design calculations in all structural materials. This prepares students to perform well on the architectural registration exam. It also prepares them to communicate with structural engineers in their own language. The teaching of a field to practice as a structure should not be diluted with rough approximations and fuzzy conceptualizations.

JOB OPS

[These ops and more are posted with more detail at <<http://www.sbse.org/announcements/>>. -ed.]

LAWRENCE BERKELEY LABS

There are three job openings in the Environmental Energy Technology Division of the Building Technologies Division:

1. Senior Scientific Engineering Associate—Lighting Systems and Controls—Req Number 25449
2. Research or Staff Scientist/Engineer—Lighting Systems and Controls—Req Number 25448
3. Senior Scientific Engineering Associate—Req Number 25518

See <<http://www.sbse.org/announcements/>> for details.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

The Department of Architecture seeks candidates for a tenure-track faculty position in the broad area of building technologies, with an emphasis on the science and technology of sustainable design. While intended as a junior search, in exceptional cases a senior or tenured appointment will be considered. The position is available beginning AY 2011-12.

Interested candidates should send application materials—a curriculum vita, a one-page statement on research, a one-page statement on teaching, and any additional documents that represent the candidate's scholarly output or other work—to: John E. Fernandez; Chair, Building Technology Search Committee; Room 5-418, Building Technology Program; Massachusetts Institute of Technology; 77 Massachusetts AV; Cambridge, MA 02139; <fernande@mit.edu>.

UNIVERSITY OF WYOMING

Assistant Lecturer, Civil and Architectural Engineering in the College of Engineering, at the University of Wyoming. Our committee has determined that a Master's or above in Building Sciences is an equivalent/acceptable prerequisite. For details see <http://www.eng.uwyo.edu/civil/jobs/assist_CA_E_12-2010.pdf>. 🐾

cover: BTES web site



photo: Nick Pine

The new south façade avoids sloped glazing.

The rebuilt 32'x12'x28'-tall sunspace has an 8'x32' deck at the attic floor level, 16' above the ground. 🖐

—Nick Pine



SBSE NEWS
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NEW DAYLIGHTING IN GLASGOW?

I just read architectural historian J. R. Curtis' critical article <<http://archrecord.construction.com/features/critique/2011/1102commentary.asp>> on a Steven Holl-designed planned addition to the Glasgow School of Art. One of Curtis' many points is that the large expanse of glass in the new design will reflect a great deal of light back onto the Mackintosh-designed building. Holl replies that this won't be the case because the glass will have a matte finish. Granted, the matte will scatter the light hitting the glass, diffusing it, so there won't be specular reflections from sunlight back onto the historic building and the glass will not visually mirror the building surroundings. But there certainly will be an increase in reflected light and the building could become a source of glare to occupants in the Mackintosh building. In Glasgow, overcast skies predominate, so specular reflections are less of an issue there. But the luminance of the glass, even if it has a matte finish, is a different question.

A sectional diagram shows seasonal sun angles and indicates the design includes a deep light well intended to bring reflected sunlight to lower levels of the building. Have daylighting studies been conducted on the effectiveness of the deep light well in delivering daylight to the lower levels? The slope of the matte glass on the north-facing studios appears to have been set to ensure that sunlight from the south will never directly strike the glass. Of course, low-angle sun from north of east-west may strike this glass for half the year [*implying a high potential for glare in the studios—ed.*].

Architecture students will certainly consider the building a daylighting precedent for their own work. So, I'd like to know more about the design and if Holl's daylighting design works. 🖐

—Bill Burke



You be the judge—Glasgow School of Art today vs. after Holl's addition.

composite image: Bruce Haglund

SUMMER ISSUE SUBMITTAL DEADLINE—JUNE 1

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