



photo: Tisha Egashira

Walter Grondzik, Tom Bartuska, Jeff Guggenheim, Alison Kwok, and ed. check out the rustic, eco-friendly accommodations at IslandWood.

OUT OF THE BOX AT ISLANDWOOD

The SBSE 2007 Retreat, “Out of the Box,” will be at IslandWood on Bainbridge Island, WA, Wednesday, June 27 through Saturday, June 30.

Loosely, the “box” is what architecture faculty traditionally do in their classes. Many of us also influence communities beyond the classroom—the retreat focuses on SBSEers’ successful activities and innovations with practitioners, the community, K–12 students, and/or in their research. Part of the schedule will be devoted to a brief grant-supported building performance investigation at IslandWood.

Participants will stay on campus in comfortable, rustic lodges, use the IslandWood learning classrooms during the day, and eat in the dining facility—where food is prepared with fresh local ingredients and served family style. The retreat will be organized into morning and evening sessions, leaving the afternoons free for informal networking groups, hikes through the 255-acre IslandWood campus, or impromptu work groups that gather as needed.

The retreat will be organized around four themes and also will include participant-defined roundtable discussions and working groups, where your “hot topic” perspectives will be discussed in an informal setting:

Practitioners—Activities, programs, and research in concert with design practitioners. Describe how these experiences inform teaching and practice.

K–12 Programs—Activities and programs involving K–12 programs that enhance an understanding of how buildings affect nature and ecology.

Community and Studies Abroad—Programs conducted with local community groups and beyond that address research, design, and nurturing the environment.

Innovations—Exemplar tools, methods, and inventions that enhance energy- and resource-efficiency in building design and town planning.

Imagine your contribution, and stay tuned for this fall’s call for participation. ||

—Walter Grondzik, Bruce Haglund, Alison Kwok

SBSE CALENDAR

2006

- Nov 11–12 SBSE Board Mtg; Denver, CO
- Nov 15–17 GreenBuild; Denver, CO
- Nov 22–25 ANZAScA Conf; Adelaide, SA

2007

- Mar 8–11 ACSA Meeting; Philadelphia, PA
- Apr 15–19 Engr Sust 2007; Pittsburgh, PA
- Apr 16–18 ARCC Conf; Eugene, OR
- Apr 19–22 HOPES Conf; Eugene, OR
- Jun 27–30 SBSE Retreat; IslandWood, WA
- Jul 8–12 Passive Solar Conf; Cleveland, OH
- Sep 14–15 TIA Conf; Krems, Austria

2008

- Jul 22–23 TIA/SBSE Conf; Oxford, UK ||

PLANETARY NEWS

In August the International Astronomical Union met and was expected to reaffirm the planetary status of Pluto. The proposed attributes that would define a planet—round and in orbit around a star—would also qualify two other objects in the Kuiper Belt and Ceres as planets. However, the August 24 vote of astronomers relegated Pluto and the others to a “dwarf planet” classification. I just know that Bob Koester is heartbroken! ||

—Bruce Haglund

LETTERS TO THE EDITOR

I'm still trying to switch from paper, but can't figure out how to. Perhaps I should ask my 12-year-old granddaughter!

—Erv Bales, NJIT

[Go to <<http://www.sbse.org/membership/>> and click on update info in the left margin ... should be easy then. By the way, I used the old spring mailing list for the summer news, so you may have already done it correctly.—ed.]



I couldn't believe my eyes when I saw the last page of our latest newsletter! You have done such a wonderful job of presenting the 'Dhaka Heliodon'. I can't thank you enough for such great publicity for our nascent architecture program. The university authority was much pleased to see us in print. Hopefully, with this increased credibility, we shall get more support from them to do other fun experiments in environment-sensitive architecture.

Thanks for the encouragement and the info. I really believe that all of you at the SBSE are doing such a wonderful job—a small group but what comradeship! The openness to share things and the helpful attitude are really commendable. Please keep up the good work, and if any of you are ever coming to this part of the world, I would love to introduce you to my colleagues.

—Shamim Javed, NSU

[Aw, shucks!—ed.]



I just had the chance to look through the Summer 2006 *SBSE News*, and I found a strong theme of environmental awareness

• *continued page 7*

SBSE News is published quarterly by the Society of Building Science Educators, a not-for-profit corporation. Submit material for publication before the first of March, June, September, or December to Bruce Haglund, Editor; Department of Architecture; University of Idaho; Moscow, ID 83844-2451; tel. 208.885.6781; fax 208.885.9428; e-mail <bhaglund@uidaho.edu>. Direct membership and mailing list inquiries to Judy Theodorson, Secretary-Treasurer; WSU Spokane; 668 N Riverpoint Blvd; PO Box 1495; Spokane, WA 99210-1495; phone 509.358.7901; fax 509.358.7900; e-mail <jtheodorson@wsu.edu>. To join our list server or to manage your account go to <<http://www.lists.uidaho.edu/mailman/listinfo/sbse>>. For full membership info and more, visit our home page <<http://www.sbse.org>>. ■

SERMON AT POTTSTOWN UUF

[Delivered August 27 by SBSEer Nick Pine. Condensed here to fit the News—I cut him off mid-rant! Contact Nick <nick@early.com> for full text.—ed.]

The U.S. has 5% of the world's population, and uses 25% of the world's energy, but most people find energy boring, intangible, and hard to understand. Why should we care about energy?

Global warming: I've been reading about global warming lately. I've seen Al Gore's movie. I was surprised to see that the earth has had lots of periodic warmings and coolings, and it has been warmer than it is now, and it would be very hot like Venus if there were no life on earth. Humans haven't been around very long in earth's history, so they haven't had much to do with controlling the earth's climate in the past, although we might do that in the future. Our fossil fuel use is delaying a global cooling cycle. It seems unlikely that Gaia can absorb human carbon dioxide production without disastrous consequences.

Global warming affects all species. Warm-weather is moving north and south from the equator at 35 miles per decade, but warm-weather animals are only moving north and south at 4 miles per decade, squeezing polar bears off the planet. Some now have to swim more than 60 miles to find ice. Some drown. Glaciers are shrinking. Ski seasons are shorter. Forest fire seasons are longer. Storms are stronger. Deserts are drier. Floods are more frequent.

Money: Energy is cheap, but if we count Gulf wars, acid rain, and the health effects of air pollution, the real cost of a gallon of gasoline is about \$15. We only pay \$3 at the pump, which sends the wrong signal to consumers. We pay the rest as higher income taxes, health care costs, and so on.

For a rational person, solar electricity might be the last step, at a cost of 100 times more than solar house heat, per peak watt, but photovoltaics are a major focus for government subsidies. Why? Some economists say PVs will get a lot cheaper as people buy more, like integrated circuits, but making them cheap is a difficult problem. Since 1934, lots of people have been trying hard to make them cheap, so it won't happen soon. Our priorities are backwards, from an economic point-of-view. Photovoltaics are hideously expensive and most houses need several times more heat than electrical energy. We can reduce the electrical slice of the energy pie with more efficient appliances. People say "solar is uneconomical," as if electricity were the only form of solar energy. They ignore clotheslines.

Solar water heating costs more than space heating, but it's economical now. People add attic insulation to save money, but fewer people thermally zone houses, which is cheaper and can save more. Air leaks waste 50% of the fuel in a typical U.S. house, but few people air-seal houses and confirm performance with blower door tests. It's required in all new low-income Philadelphia homes, but it's unknown to most people. Popular forms of solar heating seem uneconomical these days, with high costs and low solar fractions (20% for some certified water heaters), so they only appeal to customers who are concerned about climate change and other environmental issues. If more people knew that solar house heating can be cheaper than other forms of heating, more people might use it.

World peace: Our energy use causes wars in Iraq, Afghanistan, Iran, and Israel. For years, Afghans refused to let us build an oil pipeline through their country, until we invaded and replaced the government. The pipeline just started working.

Fun: Renewable energy can be fun, with a sense of personal competence and independence. Someday, solar house heating may be a competitive hobby, like sailing. We might proudly compare low fuel bills, saying "I only spent \$105 to heat my house last year."

America's Cup boats don't have outboard motors. They're well-engineered! Saint Exupery said, "If you want to build a ship, don't herd people together to collect wood and don't assign them tasks ... teach them to long for the endless immensity of the sea." This year, each boat in the America's Cup has a budget of about \$50 million, with 15,000 person-hours of development and 25,000 person-hours of full-scale construction and testing. What kind of solar house performance could we achieve with those resources?

Let's focus on what we can do today versus what we might get "the government" to do tomorrow. ■

—Nick Pine

EXPANDED SBSE NOVEMBER BOARD MEETING

At this summer's retreat the board decided that we needed a board meeting this fall to discuss several strategic planning issues. It was also decided that the meeting should be an "expanded" board meeting, with several additional members attending who have expressed an interest in helping to chart the future course of our organization. The SBSE board meeting will be held in Denver, CO, over the weekend of November 11–12, 2006 (the weekend before the USGBC Greenbuild Conference in Denver). SBSE will reimburse attendees for airfare and provide shared hotel rooms. We will meet Saturday afternoon to discuss a variety of issues, engage in more informal conversations that evening, and meet again after breakfast on Sunday to come to consensus on a "strategic plan." [At press time it looks like Leonard Bachman, Terri Meyer Boake (pres.-elect), Bruce Haglund, Alison Kwok, Margot McDonald, Chris Theis (pres.), Judy Theodorson (secy.-treas.), and Jim Wasley (past-pres.) will attend. If you have strategic planning issues for SBSE to consider, please contact one of the attendees.—ed.]

—Chris Theis

USGBC FORMAL EDUCATION REPORT

The newly-formed USGBC committee dealing with K–12 and post-secondary green building education had their official kick-off meeting in Washington, DC, August 5–7, 2006. The committee is focusing on the short-term task of preparing for an Educators' Member Circle Forum at Greenbuild 2006 this November in Denver. (Watch for a Zoomerang survey that will be going out soon to capture member interest in education topics.) The near-term goals of this committee are to build stronger relationships between academia (students, faculty, and staff) and the USGBC to prepare an on-line USGBC catalog of best practices (green schools, curricula, tools, and resources) for green building education and to identify partner organizations (such as ASES, AASHE, [SBSE?—ed.]) for future development of green building education initiatives. Longer-term goals focus on identifying grants and funding for educational initiatives that support the development of green building education assessment tools (e.g., carbon calculators), awards and recognition programs, mentorship for future green building educators, and integrated campus models for green building education that address facilities and curricula. Four of the eleven committee members are also SBSE troopers, namely, Bob Koester, Alison Kwok, Margot McDonald, and Jim Wasley. ||



The usual suspects—Bob, Alison, Margot, and Jim—gather with the USGBC formal education committee in DC.

photo: Terry Cathoun

—Margot McDonald

THE OXFORD CONFERENCE 2008

50 Years On: Resetting the Agenda for Architectural Education

In 1958 the first Oxford Conference set an agenda for architectural education that has been followed for almost 50 years, but this agenda needs radical change to meet the evolving drivers of costs of energy and construction, shifting social values, and environmental crises. The time has come to re-evaluate what is taught in schools of architecture, how it is taught, and, most importantly, to provide a forum in which why it is taught can be clearly and openly debated. One aim of the Oxford Conference 2008 is the development of a Route Map providing clear directions for ways forward to truly relevant building design for the 21st century.

The Oxford Conference 2008, to be held 22–23 July 2008 in the Examination School of Oxford University, is being organised by TIA and SBSE working in conjunction with a wide range of bodies including RIBA, AIA, RIAS, CABE, CEBE, ARCHAOS, Architecture Sans Frontières, and schools of architecture from all over the UK, America, Europe, and the world to build a three-day programme of events that will resonate across the education and building sectors and throughout society at-large. Visit <<http://www.oxfordconference.org>> or e-mail <s.roaf@btinternet.com> for further info. ||

—Sue Roaf

ACADEMIC JOB OPS

CLEMSON UNIVERSITY

Several architecture positions beginning August 2007. Minimum requirements include a master's with prior teaching and/or professional experience. Architectural/engineering registration and a Ph.D. are preferred. (1) Assistant Professor, tenure-track, architectural design with focus in building structures and technology; (2) Assistant Professor, tenure-track, architectural design with focus in sustainable methods, materials, and technologies; (3) McMahan Fellowship in Architecture, up to four endowed non-tenure-track, one-year positions for candidates of recognized stature in academics or the profession. Fellows must be qualified to teach design studio with an emphasis in history of technology, material culture, post-occupancy assessment, science technology and society, or theory areas relevant to the school's applied research. For initial screening send a curriculum vita; letter of interest that outlines teaching, research/scholarship, and service objectives; three references; and examples of professional or scholarly work to Faculty Search Committee, <miller@clemsun.edu> by 27 November 2006, for full consideration. Additional information at <<http://www.clemson.edu/caah/architecture>>. AA/EEO

KANSAS STATE UNIVERSITY

Head of the Department of Architecture. The successful applicant must possess a Master of Architecture, equivalent terminal degree, or equivalent professional experience and must demonstrate commitment to studio-based instruction as well as an orientation to multi-disciplinary cooperation. Application deadline is December 15, 2007. For further information, go to <<http://capd.ksu.edu/about/employment/>> or call 785.532.1121. AA/EEO

OXFORD BROOKES UNIVERSITY

A new post of Professor in Sustainable Design. The post holder will set the agenda for research and teaching in sustainable design within the Department of Architecture and the Oxford Institute for Sustainable Design and will provide academic leadership for the OISD/Architecture research unit. This person may come from academia or practice, with a degree in architecture, engineering, or a related field. Closing date for applications: 10 October 2006. Full information, including an online application form, available at <<http://www.brookes.ac.uk/vacancy>> or for an informal discussion, contact Prof Mark Swenarton, Head of the Department of Architecture, on +44 1865 483200 or <mmswenarton@brookes.ac.uk>. ||

SBSE PEOPLE

👉 **Martha Bohm** moved from Oregon to teach ECS at Cornell.

🏠 The National Building Museum in Washington, DC, will host an October 11 lecture by **Ralph Knowles** on his recent book, *Ritual House*.

🏠 A Hanyang Fellowship for Research and Exchange allowed **Alison Kwok** to take graduate students Matthew Travis, Amelia Thrall, and Samuel Jensen Augustine to Seoul, Korea, in September. They conducted a Tool Day, lectured and provided design crits, and toured research facilities with architecture students at Hanyang University. Alison also conducted a Vital Signs equipment day for **Chungyoon Chun's** design students at Yonsei University and gave a lecture on green building design challenges at Seoul National University. A tremendous amount of research is happening in these universities and there are opportunities for green building in Seoul. Stay tuned for a small web site that chronicles their trip and experiences! ||



photo: Alison Kwok

Matt, Amelia, and Sam pose with hostess Hyojin Kim near thankfully multi-lingual signage at the Hanyang University subway stop.



photo: Tisha Egashira

Pop Quiz: Identify all the green architecture strategies employed in this Islandwood classroom building.

THE REVIEW CORNER

DESIGN FOR LIFE

Design for Life: The Architecture of Sim van der Ryn, by Sim van der Ryn, Gibbs Smith, 2005.

I'm charmed. I obtained this book at the Sun Valley Sustainability Conference last September. Sim was a keynote speaker for this grass-roots, locally organized conference and he graciously signed and inscribed my purchased copy, "To a fellow green traveler." Sim's inclusive persona fit the conference well and inspired the book.

You'll find *Design for Life* to be wonderful in many respects. It's a treasure trove of insight and information on the history of green design from the point-of-view of one of its earliest teachers and practitioners. It's replete with graphic information on all Sim's iconic work. And, it uses Integral Theory and watercolor graphics in a powerful manner to discuss the next steps in providing a viable future for our progeny.

Indulge yourself. Buy this beautiful book. Use it to help train the next generation. Let's learn and teach from past experience.

—Bruce Haglund

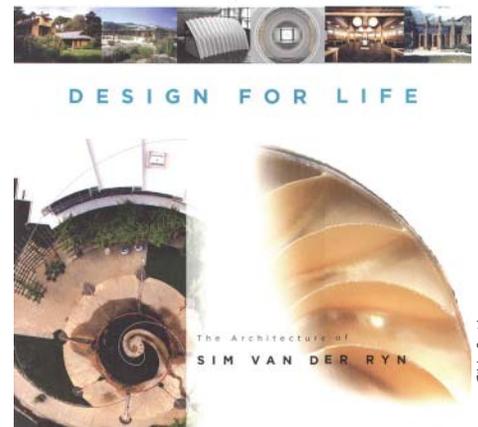


image: Gibbs-Smith

ECOLOGICAL DESIGN AND BUILDING SCHOOLS

Ecological Design and Building Schools: Green Guide to Educational Opportunities in the United States and Canada by Sandra Leibowitz Early, newvillage Press, 2005.

This book isn't what it appears to be. At the first title reading, I thought "Building" was a gerund, and thus, that it was about constructing ecological schools. On further investigation I determined that it was actually a guide to schools that offer instruction in ecological design and building. I also found that it's more than just a guide book. It spends nearly half its pages on setting the context for such instruction by providing a comprehensive recent history and timeline of significant developments (including the establishment of SBSE and its first retreat, the Vital Signs project, and Agents of Change) and by providing an overview of the status of the current scene in ecological education peppered with profiles of on-going programs that illustrate the strength and diversity of offerings.

This book is ambitious. In the author's words, "its contents speak all at once to students seeking formal education, professionals seeking continuing education for their current or new career path, and individuals with a general or homeowner interest in the subject." This comprehensive initiative is no small task, but has been diligently completed through extensive surveying and the author's passion and inquisitiveness. The findings are presented in several ways that are all graphically compelling, sorting them by intended audience, offerings, and geographic location. Of course there are omissions and foibles in this system. How many people were simply unable to respond to the questionnaire and why would a national (or international) organization like SBSE be assigned to Wisconsin?

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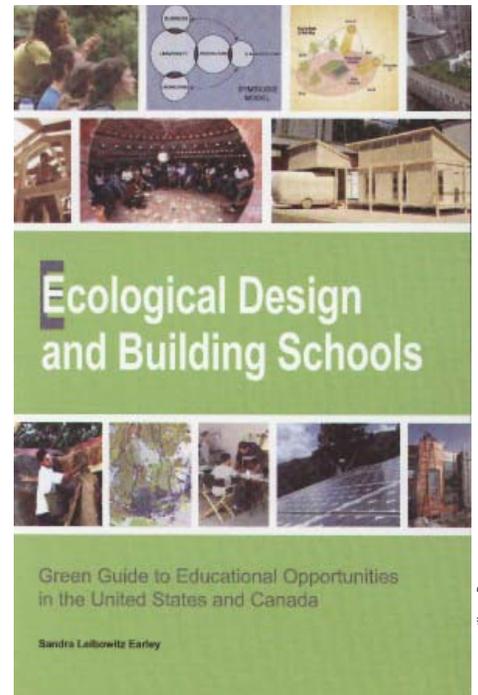


image: newvillage Press

 CONFERENCE PREVIEWS

 CLIMATE CHANGE IN HONG KONG

The Canadian Chamber of Commerce here is sponsoring a three-part “Climate Change” series (Sep 20, Oct 31, Nov 29) in Hong Kong. As far as I know, this series is the first instance of the business community getting involved in a public forum on the environment in this part of the world. Many political leaders and academics are invited as participants and, believe it or not, it is fully subscribed already. I realize that no one in the SBSE community could actually participate this time due to the academic calendar. The Sustainable Committee of the Canadian Chamber has asked me to relay a message to members of SBSE that if ever they have the opportunity to visit Hong Kong, please let us know in advance. If it is possible, the chamber would like to have the opportunity of arranging a seminar, a lecture, or some other related activities during your visit. Public awareness of global warming has caught the attention of many here in Asia. Let’s keep up the energy and make something out of it!

—Frank Sun

 TIA CONFERENCE 2007

Teaching Sustainability: Theory, Methods, Best Practice

Pre-Announcement. Subject to alteration

An international TIA Conference will be held 14–15 September 2007, at Danube University, Krems, Austria, bringing together instructors, research assistants, and students in the field of sustainable architecture and building engineering to exchange experiences on how to enhance the quality of courses in sustainable design, didactic techniques, teaching materials, films, experiments, and pc-tools; to identify vehicles and experience to bring sustainable architecture into discussion in the university community and with the public; and to explore ways to integrate the subject in the overall degree program of courses, identifying mechanisms to share exercises, lectures, and encourage cross-dialogues.

Written contributions as well as oral presentations will be accepted in English only. Conference structure: plenary lectures, parallel topical lectures and discussion groups, demonstrations of tools and equipment, posters, publications display, proceedings of papers, and a list of participants and sponsors distributed at the conference. Abstracts are due 30 January 2007. Stay tuned for more info. █

—Peter Holzer

This second revision of earlier works has been improved and refined, and the next version will no doubt fix the glitches in this edition.

Ecological Design and Building Schools deserves a spot among your references. You’ll find it as valuable for the context it presents as for its actual guide to educational opportunities. █

—Bruce Haglund

 AN INCONVENIENT TRUTH—THE MOVIE

Conscience and education seldom draw me to the cinema. When I do pay for the theater experience, it’s normally to see some incredible special effects blast that’ll be ruined when first viewed on my TV.

This movie was different. A colleague, Vincent Hui, who is verbally opposed to “tree huggers,” was among the first to see this film when it opened in Toronto earlier this year. His recommendation, “Okay, I just got back from watching the only theatre screening of Al Gore’s *An Inconvenient Truth* at the Cumberland, and even I admit that it’s worth watching. I must reiterate that I don’t have anything against the environmental movement in general; rather I have a serious problem with the superficial way so many people (especially architects) sell and profit from fear and ignorance (pretty much snake oil to me). This movie articulates the state of the environment in a very concise and objective way (albeit with a Democratic slant) without dumbing it down too much. Think *Bowling for Columbine* meets David Suzuki. I highly recommend it; not only for personal interest or academic reasons, but also as a service to the rest of the world.”

There are hundreds of movie theaters in Toronto and many films show for a few weeks before empty theaters signal shipping the reels off to a DVD production house. What’s intriguing, particularly for this type of film, was noticing the expanding number of theaters showing the film, accompanied by a run that managed to far exceed most of the summer “blockbusters.” Released on May 24, 2006, *An Inconvenient Truth* is still showing in three theaters in Toronto.

I screened *End of Suburbia* for my students last winter. It’s also quite explicit about environmental degradation and the end of oil—it left me depressed for weeks. The way Al Gore presents even more drastic information on the effects of Global Warming (which the end of oil might, in fact, solve!) manages to enlighten, convince, but in some strange way, leave the viewer with a sense of hope. I’m truly perplexed as to how he managed to do it. Perhaps it was his mixture of media and settings which allowed us to understand the material in various ways and at different levels. Perhaps it was Gore’s personality (it still slays me that you did not elect the man ... [er, I thought we did—ed.]). We addressed the ozone issue. We can address carbon dioxide. The film is passionate and convincing. I believe it will finally allow the public and naysayers to understand that it is not IF, but WHEN. Then perhaps we can get on with the business of fixing the problem.

I must admit that I am delighted to see that Amazon.com is now taking pre-orders in anticipation of a late November DVD release—perhaps a stocking stuffer for your loved one or students! █

—Terri Meyer Boake

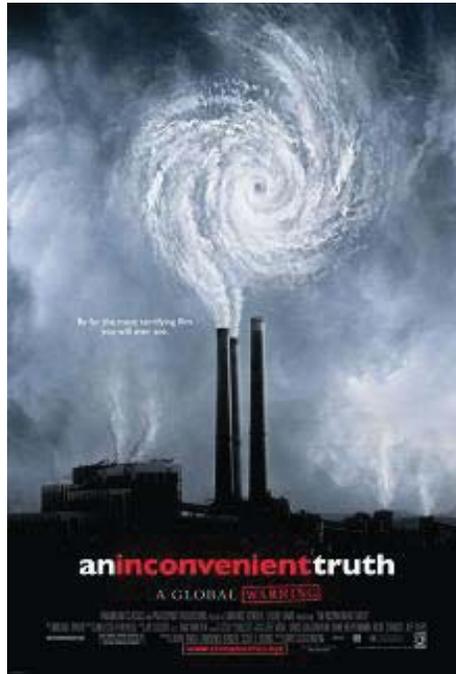


Image: An Inconvenient Truth poster

STUFF FOR YOU

COURSE MATERIALS

There was a request on the SBSE list server for posting building science course material. So, overtaken by guilt, I finally got the material together for our UCLA course, Building Climatology. It incorporates the various energy design tools, available on our web site, including *Climate Consultant*, *Opaque*, *Solar-2*, and *HEED*. The ten problem sets, taken together, give students experience in using these programs for the various design and analysis tasks needed to design a small, energy-efficient building in any climate. It's posted at the end of our web site <<http://www2.aud.ucla.edu/energy-design-tools>>.

—Murray Milne

FREE ARCHICAD 10

Now SBSEers and their students can download a free personal copy of *Archicad*, to widen knowledge and teaching potential at no cost. Few would doubt that virtual modeling is the future in architecture, but all instructors need easy access to the latest, full version of the modeling tools their students use.

This Graphisoft policy began only a few weeks ago. Teachers and students can start with a 30-day license code while we check their status, then they get a year's access, which can be extended.

Check out <<https://eduregistration.graphisoft.com/linkouts/>> for student buttons that link to the software; and to get more info see <<http://www.graphisoft.com/community/education/downloads/>>.

I hope you and your readers find this interesting! If you have any questions, please call me, I will be happy to answer them all.

—Barbara Vigh

GREEN GLOBES FOR STUDENTS

I work with the Green Building Initiative, a not-for-profit organization dedicated to "greening the mainstream" by promoting credible and practical approaches to green building for residential and commercial construction.

We'd like to invite SBSE schools to submit proposals to try *Green Globes* for commercial construction systems for free in a classroom setting. Participating professors get free access for one semester and are asked to provide feedback on the program and its use within classrooms. If you have any questions, give me a call at 312.988.2065 or e-mail <mgehrig@thegbi.org>. ■

—Mike Gehrig

RESEARCH REPORTS

DE MONTFORT UNIVERSITY—MEASURING LUMINOUS FLUX

In a major departure from my usual simulation-based work, I somehow formed this notion for a radically new measurement approach. The first presentation on it was given last week (Sep 6) at the annual Radiance Workshop. Check it out at <http://www.iesd.dmu.ac.uk/~jm/2006_Radiance_Workshop/Presentations/MardaljevicKrausseAndersen.pdf>. It's sweet and very (very) simple!

I'll be repeating the presentation in an expanded form at the CIBSE Daylight Group in a few weeks retitled, "5 Million Lux Meters: High Dynamic Range Imaging as a Means to Quantify Luminous Flux."

Abstract: 'Illuminance Proxy High Dynamic Range Imaging' is a new image-based technique to quantify luminous flux. It is both simple and revolutionary. It allows quantification of light output/spatial distribution under real-world conditions for arbitrary-sized apertures (windows, pipes, etc.) and for any sort of glazing material or shading structure. The technique can also be used to quantify the lumen output of electric lighting. The technique opens up measurement possibilities that simply weren't available before. For background info on HDR see <<http://luminance.londonmet.ac.uk/webhdr/>>.

I'm interested in hearing any views from SBSEers on the technique in general, but also on its usefulness in teaching to help impart a quantitative understanding of daylight fluxes. Contact me at <jm@dmu.ac.uk> and see <<http://www.iesd.dmu.ac.uk/~jm>>.

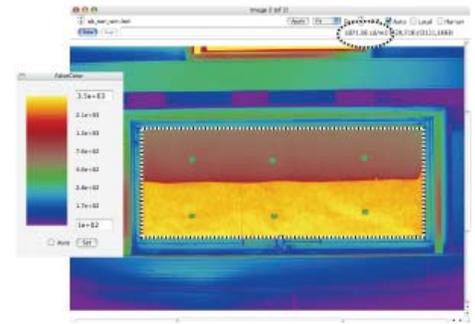
—John Mardaljevic

MICHIGAN—CONTROLLING REFLECTION AND DIFFUSION IN SONIC SPACE

Use of any sound system in an architectural space is acknowledgment of the design team's lack of an architectural solution for the acoustic needs of the space. In theory, with adequate diffusion and appropriate reflection, you can make a small listening room sound like a very good concert hall because psycho-acoustically the same basic ingredients can be present, including smoothly decaying reverberation that permeates the whole room.

Newly developed sonic panels by Golden Acoustic have silvered, color-studded surfaces with an ordered array of half- and full-sized cones, which can jut from every wall surface and the ceiling itself. The panels have shown positive results of delaying decay of low frequencies within the space. The measured results by a certified laboratory and on-site evaluation (before and after) case studies conducted by Moji Navvab and the surveys of user satisfaction prove the enhanced performance. The acoustic case studies included the distorted, blurred sound afflicting WSU's studio control room and recording studio, Walled Lake high school music practice room, and a recording studio and main stage of the Detroit Symphony Orchestra Hall.

Experiencing high-definition acoustics in a classroom. The University of Michigan has set a new standard for acoustic excellence in an educational environment with the decision to upgrade the acoustics in a classroom to High-



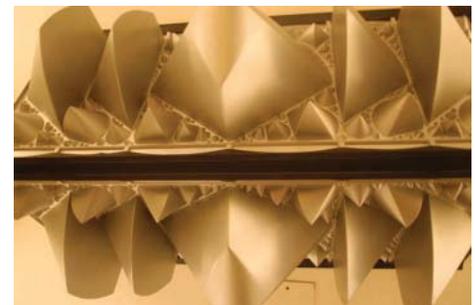
Quantify the lumen output of a light-well using a "flux-net"



A "flux-net" is a sparse mesh of small rectangles of paper strung across a building aperture. Half of each rectangle has an opaque patch on the upper side.

False color analysis of luminance of a partially shaded window (above) and measurement set-up for complex lightwell.

images: John Mardaljevic



Detail view of typical Tricons on a sonic panel.

photo: Moji Navvab

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Definition Acoustics, the first classroom setting in the UM/U.S. to receive this treatment.

This room has been fitted with the most advanced acoustical treatment system, resulting in high quality and clarity of sound. As you look around the room you will see panels of varying sizes, consisting of modified cones called Tricons. These Sonic Equalizer Panels, developed by Golden Acoustics, redistribute sonic energy, or sound, and eliminate standing waves, flutter echo, and other room anomalies, creating rich, smooth, comfortable listening in a learning environment.

High-quality sound in this 100-seat classroom with architectural restrictions was made possible with the proper size, type, amount, and placement of Sonic Equalizers and additional sound absorption panels. Ancient mathematics—the Fibonacci series—is used as the foundation for the design of these forms. Each differently-sized, varied-aspect ratio Trico has an assigned numerical value. Fibonacci sequencing was both used to create the patented shape of the Tricons and their layout. Combining these developments with a unique polymerized gypsum material developed in cooperation with United States Gypsum Corporation (USGC) creates effective and efficient acoustic treatment panels. Based on the current research by Moji Navvab on subjective and objective performance evaluation, no other acoustic treatment, panel system, sound system, or piece of electronic equipment (given architectural limitations of this room) can create such a high-quality sonic signature in this room.



Sonic equalizer panels installed in the control room at WSU.

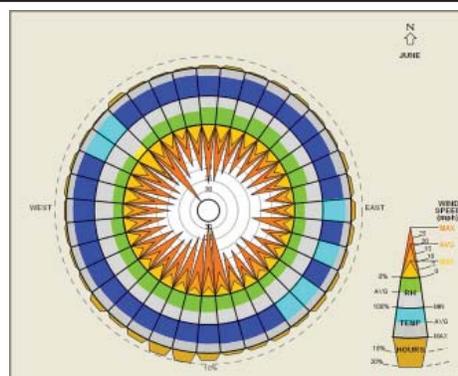
photo: Moji Navvab

—Moji Navvab

UCLA—CLIMATE CONSULTANT 3

We have just posted a new version of Climate Consultant 3 (written in Java) that runs on both PCs and MACs, to replace the older (but surprisingly popular) DOS version. This new version reads climate data in the Energy Plus format for which hundreds of stations are available worldwide (a link is also on our web site). Climate Consultant displays 2D and 3D plots of all kinds of climate data, including sun charts and psychrometric charts with a third variable overlaid in color. It also contains a new graphic tool, called wind wheel, that shows in animation the wind direction and velocity correlated with temperature and humidity. Climate Consultant 3 can be downloaded at no cost from <<http://www.aud.ucla.edu/energy/desgin/tools>>. ■

—Murray Milne, Robin Liggett, and Rashed Al-Shaali



Climate Consultant 3 introduces the wind wheel, which summarizes wind speed, direction, and frequency and can be animated

image: Climate Consultant Software

MORE STUFF FOR YOU

ENERGYPLUS VERSION 1.4

Version 1.4 of the *EnergyPlus* building energy simulation program will become available in early October. In addition to many new features, we've updated and extended capabilities and reporting throughout the existing building envelope, daylighting, ventilation and HVAC equipment, and systems portions of the program. A few new key features include being able to control space conditions based on operative temperature or Fanger PMV values, water simulation throughout the HVAC systems and in spaces (you can include the kitchen sink!), and a new predefined report to support compliance with standards and beyond-code programs (think LEED or Federal Commercial Building Tax Deduction). If you're having trouble sleeping, the documentation now exceeds 3,000 pages. Check out <<http://www.energyplus.gov>> for information on this release and the four major user interfaces.

—Dru Crawley

ECOLOGICAL LITERACY

AIA COTE has issued *Design & Ecology: Ecological Literacy in Architecture Education*, aimed to help architecture curriculum evolve to the point where all design teachings are sustainable in nature. For the executive summary and full report see <www.aia.org/cote_tides>. ■

—Kira Gould

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and concerns over sustainability throughout. I, therefore, think SBSEers will be quite interested in my recently published *A Handbook on Low-Energy Buildings and District-Energy Systems: Fundamentals, Techniques and Examples* (James+James/Earthscan), which takes an aggressive, holistic approach to the question of how to create buildings with dramatically less (factors of 3–4) energy use than conventional practice. It has received endorsements from high-profile architects and engineers. At the recent ACEEE summer study and at a meeting of the Canadian Solar Buildings Network those who saw it were quite excited about it. The book admittedly is expensive (about US\$270), as it is targeted to a niche market—institutional and professional libraries—but your members will want to make sure their library gets a copy, and some may very well want their own copy.

—Danny Harvey, Toronto

[Great! Send me one, and I'll make sure an appropriate and willing member reviews it.—ed.] ■



photo: Robert Marcial

When next in Zion National Park, treat yourself to a walk down the part of the Virgin River called "The Narrows." Beware flash floods! You don't need to travel too far to appreciate the depth of the canyon, but the further you go, the more spectacular the cliffs become, at times reaching 2,000 feet in height. I think this picture was taken after about an hour-and-a-half upriver.



SBSE NEWS
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ECOHOUSE STUDENT DESIGN COMPETITION

The Concrete Centre in conjunction with Architectural Press and Teachers in Architecture (TIA) present the 2006/7 Design Competition for an Ecohouse. Entries are invited from around the globe. Design an Ecohouse for a family of two adults and two children. The house should have around three bedrooms.

- The site and location are of your choice and concisely described on your entry.
- The house should be around 120 square meters. The site should be 1/50 hectare with maximum external space for growing or amenity. Ideas for combining houses for an urban condition with individual or shared garden/open space should be considered.

The three key aims are to make the house:

- Comfortable, with "thermal delight," using passive heating and cooling techniques.
- A 21st-century building, safe from the effects of climate change, able to survive without relying on a great deal of fossil fuels.
- Robust and with locally-sourced materials and skills, where possible.

This year we are looking to explore two new Ecohouse ideas:

Slow Buildings: Buildings able to store energy in the form of heat, coolth, or pure energy, so, if the grid breaks down, will not lose all their heat or coolth immediately, but will provide a buffer of safe comfort even in the most extreme weather.

Low-Carbon Buildings: Not only do we have to reduce our dependency on fossil fuels, but we also need to reduce the emissions of carbon dioxide that drive climate change. It means lowering energy use to a minimum and making as much energy as possible from clean renewable generators.

The last date for delivery of entries to Oxford, UK, will be 28 Feb 2007. For full information e-mail <tia@brookes.ac.uk> or <s.roaf@btopenworld.com>. ||

—Sue Roaf

WINTER ISSUE SUBMITTAL DEADLINE—DECEMBER 1

FIRST CLASS MAIL