



Photo: Ryan Smith

Retreaters will meet at the Taft–Nicholson Center (TNC) in Montana’s Centennial Valley, a near pristine landscape located in the Greater Yellowstone Ecosystem.

CALL FOR PROPOSALS SBSE RETREAT 2019

TEACHING BUILDING SCIENCE IN THE 21ST CENTURY

The call for proposals to present your ideas at the SBSE retreat 2019 is now open! The retreat will be held in Lake View, MT, Jul 22–25, 2019, at the Taft–Nicholson Center. Presentation/workshop proposals are due by Friday, Mar 1, 2019.

We call on faculty, practitioners, content experts, and students to share tools, case studies, and innovative studio exercises with attendees through workshop experiences. The retreat theme—Teaching Building Science in the 21st Century—focuses on the multiple frontiers we need to consider as we prepare future design professionals to best address the pressing issues of this century. We invite proposals for workshop, activity, or discussion presentations on numerous sub-themes:

- **Digital and Technology:** how we use data collection and visualization, BIM, modeling, programming, and smart devices
- **Disciplinary:** how are we step outside our silos to engage such disciplines as computer programming, environmental sciences, engineering, art, and literature
- **Pedagogical:** how to teach this new generation of tech-savvy students
- **Design:** methods best to engage traditional design or construction faculty
- **Material:** emerging low-carbon materials and how to integrate them
- **Political:** addressing contemporary political issues such as climate change, and the value of science
- **Place and Experience:** using place and experience to inform our teaching, research, and practice
- **Ecosystems:** integrating, analyzing and designing the built environment through a systems approach

Submission Deadline and Requirements:

Please e-mail your proposals to <sbse.2019@wsu.edu> by Friday, Mar 1, 2019, 5:00 p.m. Pacific/8:00 p.m. Eastern. Please build your proposal using our proposal template and clearly indicate whether you prefer a 1-hour workshop or a 30-minute activity slot where projects, games, tools, and material demonstrations are shared.

For more information and the proposal template, please visit the 2019 SBSE Retreat web site <<https://www.sbse.org/retreats/sbse-retreat-2019>>.

Proposals must include innovative pedagogical content that relates to teaching and learning for design studio, lecture, or seminar courses. Sessions will take place in parallel. We are looking for 15–20 workshops and presentations for the retreat, selected through a review process that will balance content and schedule. 🙌

—Ryan Smith

• continued next column

LETTERS TO THE EDITOR

The Fourth National Climate Assessment <<https://nca2018.globalchange.gov/>> made clear the dire consequences of continuing to wait to respond to climate change. Sign your firm to our letter <<https://p2a.co/7s5BPGJ>> to tell the Administration to heed the warnings of this report and curb greenhouse gas emissions now.

The future will not wait for us.

—Angela Brooks, 2018/AIA COTE Chair

Thanks for spearheading this effort to change the stance of the nation's leadership.—ed.



Sandy Halliday's book, *Sustainable Construction*, which you reviewed was published here yesterday. I bought one and gave it away at a meeting a few hours later!

Just wondered if you were going to do a review for the *SBSE News*? It should attract a wider audience, though I am afraid the title might put it in a dusty civil engineering section.

—Bill Bordass, Usable Buildings Trust

I intend to review it as soon as I get a full copy from the publisher. See Sandy's book blurb on page 8. My endorsement was based on a review of the manuscript without the illustrations, which I'd love to see.—ed.



What an incredible 4-minute message from a 15-year-old Swedish student! Wisdom out of the mouth of a child! <<https://www.youtube.com/watch?v=HzeekxtyFOY>>. 🙌

—Norbert Lechner

Amen!—ed.

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REYNOLDS SYMPOSIUM: EDUCATION BY DESIGN

PORTLAND, OR, OCT 18–19, 2019



We are at a critical transition in architectural education—one that must propel schools to address the urgency of the multiple challenges facing our current environment. Join us in engaging this transition at the 2019 Reynolds Symposium: Education by Design.

Through an abstract and reviewed-paper process (including traditional, poster, and lightning presentations), we call on faculty, practitioners, content experts, and students to shape the future of design education. Synthesize, document, and share your most effective lessons; those that will move design away from creating fossil fuel-based communities, toward building environments that are healthy, resilient, and carbon-emissions free. We plan multiple ways to capture the outcomes of the conference, one of which will be an edited book or journal of selected symposium papers.

Proposals, due Mar 1, 2019, must include innovative pedagogical content that relates to teaching and learning for design studios, lectures, or seminar courses. We are seeking presentations on these topics: Design Integration, Design for a Changing Climate, Digital Approaches, and Education in Practice. Presentations will take place as a single track in a venue that will hold approximately 120 people. The objective of the 2019 Reynolds Symposium is to gather significant and innovative pedagogical work from national and international scholars and practitioners.

The Symposium will launch on Friday (Oct 18) with an evening keynote and reception, followed by full day on Saturday (Oct 19) at the University of Oregon's White Stag Building in downtown Portland, OR. We're planning optional tours on Sunday (October 20). A limited hotel room block has been reserved for participants.

Past symposia held at the University of Oregon—The John Reynolds Sustainability Symposium in May 2015 to celebrate his work, influence, and contributions; Transforming Architecture: A Festschrift Event in May 2017 honoring Professor G. Z. "Charlie" Brown organized by the Energy Studies in Buildings Laboratory (ESBL).

The 2019 Reynolds Symposium, Education by Design, is supported by the University of Oregon Reynolds Sustainability Symposium Endowment, SBSE, the Jeffrey Cook Charitable Trust, the UO Technical Teaching program, and the UO Department of Architecture.

Stay tuned for further information and submission deadlines at <<http://reynoldssymposium.uoregon.edu>> when the site goes live and the call for abstracts opens on Jan 1, 2019! 🙌

—Alison Kwok, John Reynolds & Isabel Rivera



And you thought it was Nike Town!

photo: Bruce Haglund

CONFERENCE REVIEW

2018 PLEA CONFERENCE IN HONG KONG

The Passive Low Energy Architecture Conference, PLEA 2018, was held Dec 10–12 in Hong Kong, China. The conference was hosted by the School of Architecture at the Chinese University of Hong Kong and chaired by Edward Ng.

With the topic, “Smart and Healthy within the two-degree limit,” the conference was organized around four themes: Science and Technology, People and Community, Design and Practice, and Education and Training. Most of the papers were in either the science and technology or the design and practice sections, and included topics in passive cooling and heating, urban microclimate, daylight and glare, and thermal comfort, with most emphases on practice and implementation.

The opening keynote by Edna Shaviv was a call to provide more value to passive design in certification systems and energy codes. Additional keynotes by practitioners and government officials discussed sustainable design and implementation through nontraditional materials, design with the site, affordable housing and buildings that also teach sustainability through their design.

A generous “Student Design Colloquium” allowed students from many parts of the world to come to PLEA and present the implementation of sustainable strategies in their design projects. Scholarships awarded by SBSE (1) and the Cook Charitable Trust (4) helped five students present papers at the conference: Maaz Barin Dixit, from CEPT University, Shreshth Nagpal from Massachusetts Institute of Technology (also an SBSE scholar at ASES in 2005), Jonathan Natanian from Technical University of Munich, Laura Isabel Rodríguez from Universidad del Zulia (Venezuela), and Natalia Sokol from Gdansk University of Technology. See blurbs on their work in the next column.



Ulrike pitching the 2019 Retreat at PLEA.

SOCIETY NEWS

PLEA 2018 SCHOLAR BLURBS

Maaz Barin Dixit, Master of Technology in Building Energy Performance Candidate, CEPT University, “Performance Evaluation of an Energy-Efficient Educational Building in India.” Dixit’s research responds to the rapidly growing usage of energy by buildings in India through conducting a building performance evaluation focused on a better understanding of the gap between a buildings’ predicted and actual energy usage.

Shreshth Nagpal, Ph.D. Candidate, Massachusetts Institute of Technology, “When Buildings Converse with Climate: Can technology mediate the dialogue between climatic forces and building design?” Nagpal’s paper discusses how teaching students to assess the climate responsive strategies in buildings such as Le Corbusier’s iconic Mill Owners building, and then applying those strategies to buildings in other climates, can help develop a critical understanding of how the design of the building envelope and mechanical systems can be integrated to provide occupant comfort.

Jonathan Natanian, Ph.D. Candidate, Technical University of Munich, “Zero Energy Buildings in the Mediterranean: Typological feasibility analysis towards an Israeli adaptation.” Natanian’s research evaluates the potential for the broad adoption of zero energy buildings in cooling-dominated climates in Israel. His feasibility analysis, performed for the Israeli Ministry of Environmental Protection, informed the development of four models for zero energy buildings and aims to provide a road map for local adaptation.

Laura Isabel Rodríguez, Ph.D. Candidate, Universidad del Zulia (Venezuela), “Green Roofs for Cooling Tests in a Hot and Dry Climate.” Rodríguez’s research compares the cooling potential of an uninsulated green roof coupled with a radiant loop compared to conventional green roof construction. Data from the research indicate that the system has potential to provide cooling in specific climate areas.

Natalia Sokol, Ph.D. Candidate, Gdansk University of Technology, “Daylighting Education in Practice.” Sokol’s paper details a multi-year engagement that unites a survey-based teaching method, doctoral research, and teaching. The goal is to highlight the necessity of introducing comprehensive daylight education in architectural education. 🖐️



Scholarship students mingle amid SBSE Past-Presidents, at left Shreshth, and at Ulrike’s right Laura, Jonathan, Natalia.

As a sign of increasing ties between PLEA and SBSE, four past SBSE presidents—Margot McDonald, Ihab Elzeyadi (not pictured above), Alfredo Fernandez-Gonzalez, and Pablo La Roche—attended this conference with current SBSE president Ulrike Passe.

PLEA 2018 was a great conference, enhanced by a beautiful dinner during a harbor cruise, pre-conference workshops, and post-conference tours, all framed by Hong Kong’s skyline, a fantastic venue for any event. 🖐️

—Pablo La Roche

—Jonathan Natanian

SBSE PEOPLE

✉ **Pablo La Roche's** piece, "Rethinking the Future of Sustainable Design" for *Design Intelligence Quarterly 3Q 2018: Deep Green Edition* is now linked to the blog, which is easier to read. See <<https://www.di.net/articles/rethinking-future-sustainable-design/>>. [Methinks the entire 3Q2018 issue is of interest to SBSEers for its contributions by several SBSEers and interviews with Ed Mazria and Jason McClellan. See <<https://di-publications.com/quarterly-login/>>.—ed.]

✈ **David Ogoli** is wrapping up his first semester at California Baptist University in Riverside, CA, and is looking forward to reconnecting with SBSE activities.

✈ The new director of the Architectural Engineering program at the University of Texas at Arlington is **Michael Zaretsky**. 🙌



photo: Ulrike Parse

Margot McDonald and Pablo La Roche catch up over noodles in Hong Kong.

NAPHC 2018 SCHOLARS



photo: Jonathan Bean

Jonathan Bean with awardees Khiem, Fahad, and Siddharth.

SBSE also awarded three scholarships for the North American Passive House Conference. The awardees were **Khiem Nguyen**, pursuing a Ph.D. in Civil Engineering, The Catholic University of America, Washington, D.C., **Fahad Allheedan**, pursuing a Master of Building Science, University of Southern California, and **Siddharth Sanjay Bhat**, pursuing a Masters in Mechanical Engineering in Energy Conversion, University of Southern California. 🙌

—Jonathan Bean

UPCOMING EVENTS



ROSENFELD SYMPOSIUM, APR 23, BERKELEY, CA

We are excited to announce a poster competition as part of Lawrence Berkeley National Laboratory's upcoming Rosenfeld Symposium on 23 Apr 2019. The symposium will focus on energy-efficient and grid-interactive buildings. Please encourage your students working in this area to submit a poster abstract for consideration. The competition is open to undergraduates, graduate students, postdoctoral scholars, and early-career researchers within 5 years of their most recent degree. Poster abstracts with 1-minute audio are due by Jan 15, 2019. All accepted poster presenters will receive free registration to the Symposium. Direct potential applicants to the poster competition page on the Rosenfeld Symposium web site at <<https://rosenfeld-symposium-2019.lbl.gov>> and share this information among your colleagues and networks.

—Ashok Gadgil and Mary Ann Piette

4TH INTERNATIONAL SUSTAINABLE BUILDINGS SYMPOSIUM (ISBS 2019)

International Sustainable Buildings Symposium (ISBS) has been held in 2010, 2015, and 2017. Now the fourth event will be held 18–20 Jul 2019 in Dallas, TX. We aim to bring together researchers and experts from the U.S., Turkey, and the rest of the world. Researchers with a significant international reputation will be invited as keynote speakers. The symposium will facilitate discussions on current issues in construction and environmental technology among representatives from research, academic institutions, municipalities, government bodies, non-governmental organizations, and other official and private establishments active in construction and in environmental technologies. Both national and international companies will have the opportunity to introduce their products and services to experts and authorities from the government agencies. Full info at <<http://isbs2019.gazi.edu.tr/>>.



— Arzuhan Burcu Gultekn, Hüseyin Yılmaz Arunta, Mukaddes Darwish

SOLAR WORLD CONGRESS



We are pleased to invite your participation in the International Solar Energy Society (ISES) Solar World Congress (SWC) 2019 in Santiago, Chile, from Nov 4–7, 2019. The SWC will be held together with the International Energy Agency (IEA) Solar Heating and Cooling Programme (SHC), International Conference of Solar Heating and Cooling for Buildings and Industry. IEA SHC is a key strategic partner and co-chair of SWC 2019.

The call for participation is open. Detailed information on how to submit your abstract and instructions for authors are on the conference home page <<http://www.swc2019.org/call-for-participation.html>>—deadline for the abstract submission is 28 Feb 2019. 🙌

EXPLORING THE SENSES IN THE ALPS



Barbara holding court at the École.

This past October, I was delighted to be invited to present a talk and workshop at the École Nationale Supérieure d'Architecture de Grenoble as part of their Arts in the Alps program (see: <https://www.arts-in-the-alps.com/fall-conferences/2018-2/>). The talk, "Sculpting the Sensescape: An Embodied Approach to Design," expanded on the sensory design concepts presented in my recent book, *Creating Sensory Spaces: The Architecture of the Invisible* (Routledge, 2017).

The one-day workshop that followed the talk was titled, "A Puddle of Quiet," and provided an opportunity for participants to explore and express the sensory qualities of place through such multimedia approaches as sketching, collage, poetry, digital animations, and movement. The morning session used the power of metaphor as a design generator to provide a deeper dive into the sensory qualities of place, focusing on our ability to experience, describe, and control the shape of sensory. Using Steven Holl's metaphor of "seven bottles of light in a stone box," we explored the contrasting characteristics of both halves of this image and then evaluated how well Holl's design for the Chapel of St. Ignatius met his metaphoric goal. This example set the stage for the afternoon's work.

In the afternoon design charrette, participants worked in small groups to develop their own metaphor of sensory place exploring a sensory mode of their choosing, such as "Puddle of Quiet." Each group then designed and communicated a place that embodied this sensory metaphor and presented it to the whole group via a variety of representational techniques. Groups were encouraged to consider the qualities of the sensory space they created, its illusory and temporal nature, and the means by which they would shape its location and qualities. For example, the metaphor of a "Puddle of Quiet" could represent a place that is sheltered from sound that one might unexpectedly come upon within a noisy environment. It would perhaps be a small space similar to a puddle and might be shallow or perhaps one would step down into it. It would not be bounded by walls, but just by a change in the sound level. The designers would have to work to shape the soundscape around it so that surrounding sounds were eliminated or significantly reduced when passersby stepped into this "Puddle of Quiet."

The workshop was especially fun for me as it took the next step in moving this creative aspect of sensory design into the design studio context. Students at the École have a strong research focus so they welcomed the opportunity to play with these poetic, but tangible, concepts and enthusiastically jumped into the design exercise.

I'd be happy to also offer this talk and workshop to SBSE member schools if you are interested in having it at your university. Depending on timing and circumstances I may be able to do it for just my travel expenses (but, of course, would not turn down an honorarium if offered!). 🙌

—Barbara Erwine



Charrette participants in action.

JOB OPS

GLASGOW SCHOOL OF ART

Mackintosh School of Architecture at the GSA is seeking to appoint a Senior Lecturer in Architectural Technology. As well as contributing to high quality teaching, the successful candidate will also undertake exemplary research, have REF level outputs, and contribute to the activity of the Mackintosh Environmental Architecture Research Unit (MEARU), bringing skills and insight to complement and enhance the work of the unit.

Details are at <https://gsa.engageats.co.uk>.

—Tim Sharpe

UNIVERSITÉ LAVAL

We are searching for a new colleague at the School of Architecture, with a focus on Building Science (energy, materials, acoustics). Candidates with a robust expertise in building science applied to the entire life cycle of buildings (sustainability, carbon neutrality) are encouraged to apply. All fields of expertise in building sciences will be considered; the immediate needs are the development and integration of quantitative methods in energy efficiency and acoustics.

Application deadline: Feb 1. Full description: <https://www.rh.ulaval.ca/emploi/HCM/2398/emplois-professeurs>.

—Claude Demers

UNIVERSITY OF HARTFORD

UH College of Engineering, Technology, & Architecture is searching for a new dean. If interested, please review the dean profile document at: <https://assets.storbeckpimentel.com/files/resources/hartford-ceta-dean-pd.pdf>.

Please send all inquiries electronically to Sue May, Partner Matthew Marsallo, Associate Storbeck/Pimentel & Associates, LP, <HartfordDean2019@storbecksearch.com>.

—Seth Holmes

UNIVERSITY OF HAWAII

The School of Architecture at the University of Hawai'i at Manoa (UH Manoa) announces a job posting for a Tenure Track Assistant Professor in Architecture—Building Systems. This appointment will begin Fall 2019 and will be filled at the rank of Assistant Professor.

Full posting is at <http://workatuh.hawaii.edu/Jobs/NAdvert/29527/5124790/1/postdate/desc>. 🙌

—Ulrike Passe

THE COTE TOP TEN TOOLKIT

CLOSING THE INFORMATION GAP TO DESIGNING HIGH PERFORMING, EQUITABLE, BEAUTIFUL BUILDINGS

Very high performance is often seen as something only available to a few ambitious designs for buildings with the right client, program, or budget. These exemplars can demonstrate what is possible, but they will not solve our environmental challenges by themselves. Although the AIA COTE Top Ten Awards program recognizes only the top performing projects, the COTE Top Ten Measures and this Toolkit can be used as a framework to guide the design of all projects.

While the measures themselves take the form of questions, patterns for addressing them begin to emerge from winning projects. The Toolkit identifies some of these patterns, and a talented team of subject matter experts curated the most relevant current resources to support them.

The intent is to keep this resource current and add to it over time. Ultimately, this feedback loop informs refinements to the fundamental measures themselves. Your feedback is incredibly helpful for continuously improving the resource. Contact us at <cote@aia.org>.

The COTE Super Spreadsheet is a tool for calculating and understanding the metrics that make up the COTE Top Ten Framework. Whether it's used to analyse a project, learn about performance metrics, or assist in submitting a project for the COTE Top Ten Award, this tool serves the technical side of the framework, ensuring accuracy and consistency, and allowing projects to be evaluated across all COTE measures of sustainable design.

You can download the spreadsheet at <https://www.aia.org/resources/6077668-the-cote-top-ten-toolkit?utm_source=RealMagnet&utm_medium=email&utm_term=30194614-a4ec1298-f140-4705-9135-9bfe9cf2a1ed&utm_content=AIA%20Architect--AIA%20Architect%20Email%20-%2012%2F14%2F18&utm_campaign=A%20big%20year%20for%20architects%20>. 🖱

THEN AND BEENOW

With the rise of mandatory sustainability construction codes, the desire to meet voluntary green assessment programs, and the obligation to do what is possible to minimize the worst of climate change, how can graduates of architecture schools have the knowledge and skills necessary to help design low-energy buildings? The efforts of the National Architectural Accrediting Board (NAAB) to adopt the necessary requirements in the past has not resulted in the long-term implementation or encouragement of sustainable or low-energy curricula. At present, the change in architectural education to make environmental factors of design a priority is proceeding much slower than the profession's trajectory of this imperative.

This past summer at the Retreat, a non-profit organization started by a few SBSE members in 2014 has started to lead environmental education into the next decade by responding to this question proactively—through Built Environmental Education now (BEEnow), which will acknowledge schools that do a creditable job in education for climate change mitigation. BEEnow is a voluntary certification program that inspires architecture schools to emphasize the teaching of sustainability so that graduates are competent to contribute substantially to the design of low-carbon buildings. A team of practitioners and faculty which comprise the organization have finalized their set of certification documents through external academic and professional peer reviews this year, and will be beta-testing this program by a few pilot schools at the beginning of 2019. Robert Miller, Director of the School of Architecture at University of Arizona notified BEEnow's Administrative Team in October that his school is on board to be the first to test this “important curricular system for developing sustainability education.”

BEEnow certification is intended to act in parallel with the NAAB accreditation requirements, to help architectural education meet challenge posed by the rapid change needed combat climate change. Buildings play a large role as climate change-impactors, yet the potential that design holds in greatly reducing the detrimental impacts of buildings in the future, communicates the urgency in such certification. If you or your architecture school or program is interested in joining the ranks of our BEEnow Pilot schools, please contact Norbert Lechner at <lechnnm@auburn.edu> or Patricia Andrasik at <andrasik@cua.edu>.

—Patricia Andrasik

BEEnow

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photo: Alex Rempel

AMERICAN CITIES CLIMATE CHALLENGE



Michael Bloomberg has announced Charlotte as the nineteenth winning city of Bloomberg's American Cities Climate Challenge. “With Washington asleep at the wheel, cities like Charlotte are leading the way in the fight against climate change,” said Bloomberg, the UN Secretary-General's Special Envoy for Climate Action. His foundation's \$70 million program, launched in June, will help 20 winning cities accelerate their ambitious climate efforts. Over the next two years, the Climate Challenge will provide these cities with significant resources, including technical assistance and staff capacity, to help them reduce carbon emissions by saving energy and using clean energy sources. The selected cities will target energy savings in the buildings and transportation sectors, the sectors most responsible for energy use and carbon emissions.

To read more visit <http://www2.aceee.org/e/310911/-partners-bloomberg-s-american/5bqcgq/267724749?h=3Wg_QoIODtdh-UXIxu8iyP312lkbodNDB-iouI9hhUw>.



—Kate Tanabe

2018 SBSE MEMBERSHIP SURVEY

In early summer 2018, a membership survey was sent to all current SBSE members, and we received about 20% completed surveys in return. The board would like to thank everyone who took the time to respond. Of the respondents 63% were faculty, 10% retired faculty, and the remaining 27% were fairly equally split among researchers, students, and professionals. The main reasons to become members are networking opportunities, being able to tap into building science knowledge, and learning about alternative pedagogy methods. SBSE is also known for student and faculty mentorship. Respondents were fairly evenly split into old-timers and new members. Our novices are as active as our long-term members. Of the services SBSE offers, the P&T review service seems the least known, thus we will make it a custom to periodically remind the membership—SBSE has a list of established faculty who are willing to serve as external P&T reviewers for building science faculty. [*Contact Ulrike if you need reviewers.—ed.*] The board will take into consideration suggestions for new tasks such as sponsoring a passive design conference, providing connections to industry, and creating platforms for research.

For the first time this past summer we hosted the annual members' meeting at the retreat which went very well; A fact also supported by the survey. Thus, the next annual members' meeting will be held during the 2019 retreat in Montana.

We realized we need to more fully advertise the new education portal <<https://www.sbse.org/resources>>, only 66% of the respondents were aware of it. Please use it to share your material and explore what is already exists.

Everyone loves and reads the newsletter, thank you Bruce!! [*Shucks!—ed.*]

Best times for retreats are still the summer (June or July) and two-thirds of the respondents could live with the retreat being every other year. We have not yet decided how to react. For 2019, we have a great retreat planning team and location in Montana (thanks, Ryan Smith!). If anyone has ideas for 2020 and/or 2012, please let the board know! The majority of the respondents attend the retreat self-funded; another reason to keep costs low.



The word clouds above indicate where our members present (l) and publish (r) their work.

We will consider the clear indication that an award for faculty is desired by the respondents (only 8% straight outright rejected that idea). A vast majority of 90% indicated we should have our own conference. We will respond by forming a scouting committee in 2019.

We will also look into an SBSE LinkedIn account, but it should not cost us much.

Finally, thanks again to all SBSEers who responded to the survey. We greatly appreciate your time, interest, and care. You will hear from us shortly for the next rounds of student scholarships. 🙌

—Ulrike Passe

MORE JOB OPS

ILLINOIS INST. OF TECHNOLOGY

The Department of Civil, Architectural, and Environmental Engineering at IIT is seeking a tenure-track faculty in the area of Structural Engineering. Please inform your postdocs, recent graduates, and other colleagues of this opportunity. The full job description is at <<https://engineering.academickeys.com/job/iwqxnk92>>. The review of applications began Dec 1 and will continue until the position is filled.

—Brent Stephens

UNC CHARLOTTE

The SoA at the University of North Carolina at Charlotte is hiring two faculty positions in Building Technology. Full info is at <<https://coaa.uncc.edu/academics/school-of-architecture/job-opportunities>>.

—Kyoung Hee Kim

UNIVERSITY OF NEW MEXICO

The UNM Architecture Department seeks applicants for a tenure-track Assistant Professor of Architecture. Candidates should submit their application by Jan 31, 2019, for best consideration. The position will remain open until filled. The appointment commences Aug 15, 2019. The successful candidate will teach graduate and undergraduate design studios, a building technology course, and a seminar related to their scholarly interests. Full details at <<https://unm.csod.com/ats/careersite/JobDetails.aspx?id=7376&site=14>>.

—John Quale

UTEXAS ARLINGTON

We seek applicants with a focus in building performance, sustainable design, building technology, environmental systems, computation and emergent technologies, robotics and fabrication technologies, or a related field. Full info at <<https://uta.peopleadmin.com/postings/7617>>.

—Michael Zaretsky

WASHINGTON UNIVERSITY

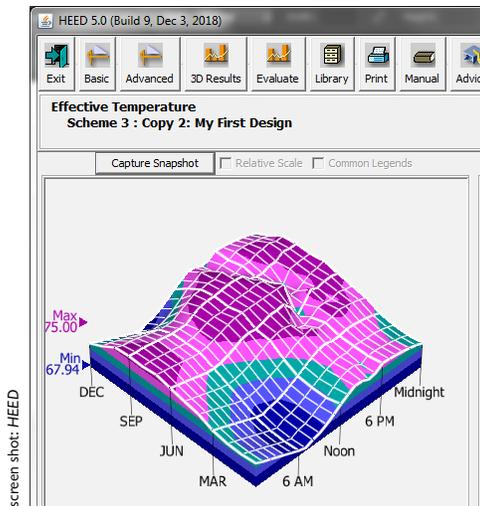
The Sam Fox School of Visual Art and Design at Washington University in St. Louis seeks a tenure-track assistant or associate professor in the College of Architecture and Graduate School of Architecture with a focus on design and building technologies. Review of applications begins Jan 31, 2019, and will continue until the position is filled. For more detail see <<http://samfoxschool.wustl.edu/jobs>>. 🙌

—Chandler Ahrens



Season's Greetings from Hong Kong by night.

HI-RES HEED RELEASED



screen shot: HEED

We've just posted our beta version of HEED-5, now updated for high-resolution graphics. This user-friendly, schematic-phase design tool shows your students graphically how each design decision helps a home approach zero net energy or zero net carbon. Using hourly climate data it calculates passive performance as the number of hours per year when neither heating nor cooling energy is needed to maintain human thermal comfort. HEED links to Climate Consultant to give a set of site-specific design guidelines. Students can easily sketch in a floor plan, then click and drag windows to the best location on each wall. PV and Solar Hot Water collectors may be placed anywhere on the building. Students can add trees and neighboring buildings then watch an animation of sun shadows moving across their building for each hour of the year.

The Help option explains all technical terms. Three YouTube tutorials on the web site show how to use many other basic and advanced features in HEED. *[To gain some insight on HEED in action check out Pablo La Roche's 49 student projects for his 2016 and 2017 ECS courses published in two books, Going to Zero and Going to Zero 2017 available through online bookstores.-ed.]*

Your students can get a free copy of HEED from our Energy Design Tools web site <<http://www.energy-design-tools.aud.ucla.edu>> where they can also download Climate Consultant. Soon we will be posting updated versions of OPAQUE and SBEED (our non-residential version of HEED). *[I have a bunch of morphed future climate files that work with HEED, SBEED, and Climate Consultant; ask me <bhaglund@uidaho.edu>.-ed.]* 🖱

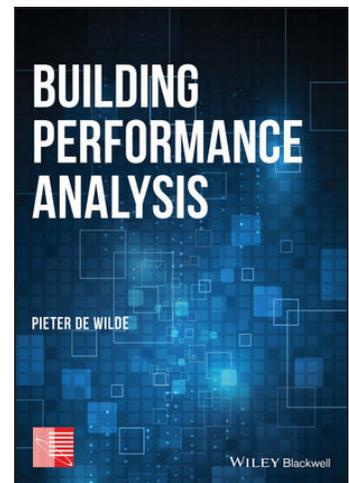
—Murray Milne

SBSE BOOK CORNER

BUILDING PERFORMANCE ANALYSIS

This book presents a comprehensive and systematic overview of this surprisingly complex subject, and should be useful to anyone who teaches building science. It consists of three parts—Foundations reviews the context, background and theory of the subject; Assessment (explores operationalization and how to quantify building performance, including both simulation as well as physical measurement); Impact (discusses how building performance analysis features in design, construction and operation of buildings). An epilogue presents an emerging theory of building performance analysis. Each main chapter contains the discussion of a case-study building that represents the state-of-the-art in the field, and also demonstrates remaining challenges. The book is formally endorsed by the International Building Performance Simulation Association (IBPSA). It can be purchased directly from the publisher (Wiley; direct link: <<http://www.wiley.com/buy/9781119341925>>), via the major online retailers, and of course via your local bookseller.

—Pieter de Wilde



DAYLIGHTING HANDBOOK II

The second volume was just released on <<http://www.BuildingTechnologyPress.com>>. The book describes the science behind simulation programs, such as DIVA, and is divided into two parts, Daylight Simulations and Dynamic Façades. Chapters 9 to 12 discuss how to predict the overall amount of daylight in and around buildings at any given site using manual methods and computer simulations. Chapters 13 to 16 present an integrated design analysis framework to evaluate façades with dynamic shading and lighting systems that negotiate between occupant comfort and energy efficiency.

—Christoph Reinhart



SUSTAINABLE CONSTRUCTION

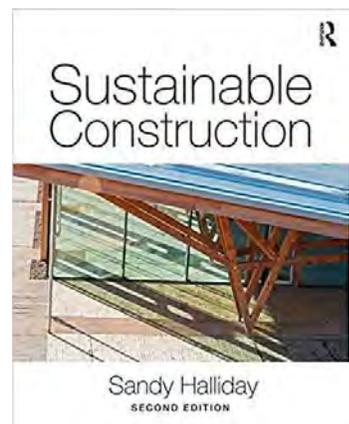
This second edition was published in Dec 2018.

The first chapter provides an updated perspective on the history of ideas behind sustainable development and a sample of precedents from FLW's Solar Hemicycle to The Ark on Prince Edward Island, to Arcosanti, that led the way to sustainable buildings and cities.

Subsequent chapters look at legislation, policy, cost, appraisal tools, materials, environmental design, energy generation, water and sewage management, process issues, and urban ecology. Each chapter has succinct nuggets of information supported by ten relevant and highly varied best practice case studies. Each chapter also contains an extensive bibliography.

The book is heavily illustrated in full color and is an ideal, contemporary, accessible primer to courses in Building, Architecture, Construction, Environmental Engineering, Project Management, Landscape, Urbanism, and Development. More info at <<https://www.routledge.com/Sustainable-Construction/Halliday/p/book/9781138200289>> *[Or you can listen to Sandy pitch the book on <<https://www.youtube.com/watch?v=pMJtLb4nDUU>> It's sorta cool.-ed.]* 🖱

—Sandy Liddell Halliday



RESEARCH REPORT—OXFORD BROOKES

New UK research shows high CO₂ concentrations in offices are decreasing people's cognitive capability. Productivity levels in the UK are known to lag behind those of other leading economies. The Office for National Statistics has found that the average UK worker is 26% less productive than a German worker and 23% less so than an American worker. New research findings have demonstrated how improvements to our indoor environment at work could help.

Rajat Gupta, Director of the of the Low Carbon Building Research Group at Oxford Brookes University, has presented findings on a major study on workplace productivity at the British Council for Offices conference in London held 29 Nov 2018.

The Whole Life Performance Plus (WLP+) project report provides evidence and detailed insights into the relationship between poor indoor environmental conditions and dissatisfied, unproductive, or unwell workers. Until now the relationship between indoor environmental conditions and productivity has been largely studied solely in the laboratory. Between Feb 2017 and Oct 2018, the WLP+ project continuously monitored the indoor environment of two office buildings that represent UK working conditions—one modern and one older building. Staff from the two buildings undertook over 7,850 surveys and tasks such as proof reading, numerical, and Stroop tests in a variety of indoor temperatures, CO₂ levels, and relative humidity conditions. The lessons learnt were applied in another ultra-modern building.

The research found that when CO₂ levels were lowered, people completed the tests dramatically faster and scored better—scores improved by up to 12%. Where test speed was measured in one building, people worked 60% faster in lower CO₂ concentrations, taking a mean of 8.2 minutes to complete a test in low CO₂ concentrations, compared with 13.3 minutes in modest CO₂ concentrations. You can access the report at <<https://wlpplus.com/wp-content/uploads/Improving-Productivity-in-the-Workplace-Results-of-the-WLP-Project.pdf>>.

Gupta was the academic lead on the WLP+ project, which was carried out in collaboration with LCMB Building Performance Ltd. and a range of industry partners. The three-year £530k project was supported by Engineering and Physical Sciences Research Council (EPSRC) and Innovate UK. The main objective of any WLP+ project is to gain an empirical, evidence-based understanding of how to optimize working conditions and improve staff performance and productivity.

—Rajat Gupta

TWO NEW FULL-TIME RESEARCH POSTS AT OXFORD BROOKES

Based in the OISD Low Carbon Building Research Group at the School of Architecture in Oxford Brookes University (Oxford, UK), the posts are funded through the EPSRC/DST funded UK–India research project—RESIDE—and OBU's Global Challenges Research Funding. The four-year RESIDE project aims to assess all aspects of the residential energy use problem, including performance of the building fabric; in-home appliances; indoor environment and occupant behavior, which underpin a residential building energy code for high-quality, low-energy housing across all five climatic zones in India. More info <<https://www.brookes.ac.uk/about-brookes/news/researchers-receive-major-grant-to-help-improve-the-energy-efficiency-of-millions-of-homes-in-india/>>. For further information about the job description and application pack for the two posts, please visit: 1. Research Associate (Housing performance evaluation) <https://my.corehr.com/pls/oburecruit/erq_jobspec_details_form.jobspec?p_id=060944>; 2. Research Fellow (Sustainable Building Performance) <https://my.corehr.com/pls/oburecruit/erq_jobspec_details_form.jobspec?p_id=060943>. Closing date for both is 6 Jan 2019. 📅

photo: Bruce Hagglund



cover: WLP Plus web site

OTHER OPPORTUNITIES

2019 MICHAEL VENTRIS MEMORIAL FUND AWARD

The trustees of the Michael Ventris Memorial Fund would like to invite applications for the 2019 Michael Ventris Award for Architecture. One award in the field of architecture (in the amount of £2,500) will be given to a small, independent project with a clear outcome whose contribution to the field should be characterized by uniqueness and innovation for the field of architecture. For more details see <<https://www.aaschool.ac.uk/PUBLIC/NEWSNOTICES/schoolNotices.php?item=1159>>. The closing date is Friday, 1 Mar 2019. .

—Sue Roaf

BRI SPECIAL ISSUE

Special issue *Energy and climate change solutions: India's building stock*, guest edited by Radhika Khosla and Kathryn (Katy) B. Janda is now published online at <<https://www.tandfonline.com/toc/rbri20/47/1>>

Given the imperative to limit global warming to 1.5°C, this special issue examines the potential that India and similar countries hold for radical reductions in energy demand and GHGs in the building sector. An enormous opportunity exists in India over the next 15–20 years as its building stock will grow at an unprecedented rate. Ensuring it is done to minimise the energy demand is crucial.

Free articles in the special issue include:

- India's building stock: towards energy and climate change solutions, Radhika Khosla & Kathryn B. Janda
- Bridging India's housing gap: lowering costs and CO₂ emissions, Alessio Mastrucci & Narasimha D. Rao
- Customized performance evaluation approach for Indian green buildings, Rajat Gupta, Matt Gregg, Sanyogita Manu, Prasad Vaidya & Maaz Dixit
- Public costs and private benefits: the governance of energy efficiency in India, Ajay Mathur. 📖

—Richard Lorch



Sue Roaf and Harvey Bryan take a break at PLEA2018

photo: Unifite Pasce



poster: ASES

ASES SOLAR 2019: RACE TO RENEWABLES

The American Solar Energy Society believes that supplying 100% of America’s electricity with renewable energy is not only possible, but urgently necessary. ASES represents the scientists, educators, and activists who can provide renewable energy technologies and solutions for climate action in the United States that will have positive effects within the next five years.

Many strategies will be necessary to take immediate climate action:

- Electricity supply (residential, commercial, industrial, utility-scale solar; on-land wind power; offshore wind power)
- Transmission (including a national HVDC grid)
- Electrifying the economy (transportation, homes, businesses, buildings)
- Policies (international, national, state, intrastate, city)
- Public support (social media, popular press, education)
- Personal actions (renewable energy opportunities)
- Energy efficiency, electric vehicles

Answer the call at <<https://www.ases.org/solar-2019-call-for-participation/>>. Submissions close Jan 31, 2019.

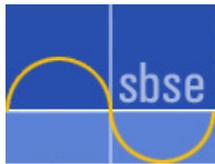
Also, the proceedings from SOLAR 2018 are now available at <<http://proceedings.ases.org/?conference=solar2018>> courtesy of the International Solar Energy Society. 🙌

SBSE CALENDAR

2019

Apr 7-9	SimAud 2019/Atlanta, GA, USA
Apr 23	Rosenfeld Symposium/Berkeley, CA, USA
May 29-Jun 1	ARCC 2019/Toronto, CANADA
Jun 6-8	AIA 2019/Las Vegas, NV, USA
Jul 18-20	ISBS 2019/Dallas, TX, USA
Jul 22-25	SBSE Retreat/Centennial Valley, MT, USA
Jul 24-26	Int'l Conf Structures & Architecture/Lisbon, PORTUGAL
Aug 5-9	ASES Solar 2019/Minneapolis, MN, USA
Oct 18-19	Reynolds Symposium/Portland, OR, USA
Oct 23-26	PLDC 2019/Rotterdam, THE NETHERLANDS
Nov 4-7	Solar World Congress/Santiago, CHILE 🙌

SPRING ISSUE SUBMITTAL DEADLINE—MARCH 1



SBSE NEWS
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TO: SBSE MEMBERS & FRIENDS
 PLANET-WIDE



photo: Bruce Haglund

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