



photo: Taft-Nicholson Center

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 DEADLINE EXTENDED

### SBSE 2019: TEACHING BUILDING SCIENCE IN THE 21ST CENTURY

The call for proposals to present your ideas at the SBSE retreat 2019 is still 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 Wednesday, Mar 20, 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 Wednesday, Mar 20, 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

Something must be amiss. I am a member of SBSE. I paid my dues on May 3, 2018 through PayPal, yet the web site does not recognize my address nor my Virginia Tech email alias that I believe I used to register. I am on the listserv and have been getting the emails regularly. Can you please advise? 🖐

—Elizabeth Grant, Virginia Tech

*Our three-pronged sign-up system is usually the culprit. You need to pay dues with Wild Apricot to be a member, you need to sign up to access our web site sbse.org, and you need to sign up for the list server. However, the solution to Elizabeth's problem is simpler. You don't need to sign-in to the list server to send messages, just to manage your account. Just e-mail sbse@uidaho.edu. If your e-mail is in the list, your message will be sent. And if nothing else works, I'm always happy to help!—ed.*

## EXPLORING THE SENSES IN MOSCOW

Barbara Erwine brought her workshop to Moscow, ID in February. It was an engaging multimedia exercise for the students.

—Bruce Haglund



photo: Bruce Haglund

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## SBSEERS' BOOKS REDUX

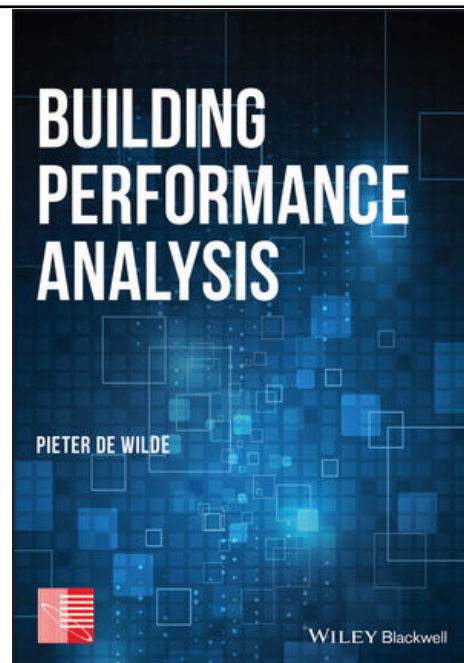
### BUILDING PERFORMANCE ANALYSIS

To promote my new book on *Building Performance Analysis* (Wiley, 2018) I am organizing a book contest.

In order to participate, visit my web site at <<https://www.bldg-perf.org>> and have a look at the page that lists various building performance aspects. For the contest, I am looking for you to identify a new building performance aspect that is not yet included in my overview, or to suggest an edit that helps me to improve the current listing. The winner will get a free copy of the book, posted to wherever he/she is based. Terms and conditions of the contest are posted on the web site. Email your entry to <[pieter@bldg-perf.org](mailto:pieter@bldg-perf.org)>. One entry per participant. Competition open 12 Mar 2019. Competition closes 24 Apr 2019, noon (GMT).

I look forward to hear from you, and learn about new performance aspects I have missed!

—Pieter de Wilde



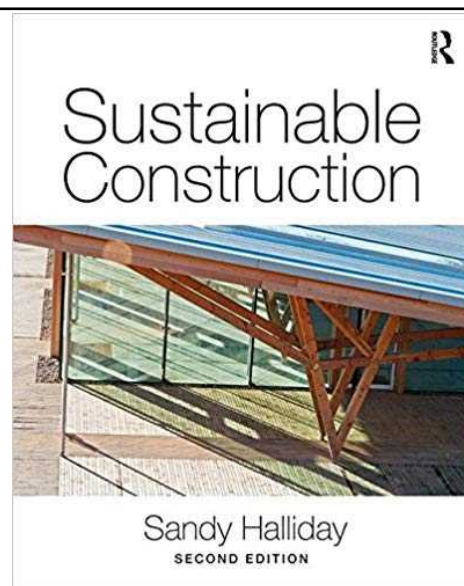
cover: Wiley

### SUSTAINABLE CONSTRUCTION

Before *Sustainable Construction* was published the publisher sent me an unillustrated manuscript to evaluate in hope that I'd provide an endorsement, which I did. An extract from that endorsement is quoted on the book jacket, "...a robust examination of a vast set of issues that are especially important to today's construction practices...takes on social and political climate as well as the practice of building sustainably. It's a tour de force..."

Last month I received the fully illustrated and formatted final publication. Should I retract my praise? No, the book is even better than I imagined. Sandy's perspective as a long-time researcher spans the disciplines in the sustainable construction arena and melds her words with images and graphics that speak to all those fields of expertise. It provides the historic context of what has worked and why as well as what should be done and how. I encourage you all to take the journey through its pages! 🖐

—Bruce Haglund



cover: Routledge



photo: Bruce Haglund



## RESEARCH REPORT



## EXTREME LODGE, COLLINS BAY, ANTARCTICA

Extreme design is different. We learnt that in Collins Bay on King George Island, erecting our Polar Lodge to stay for twelve freezing months in Antarctica, in winds of up to 200 mph. Based on a Mongolian yurt, it has three skins, two of ORV8 (like a space blanket) and the outer one of Dyneema (reused racing yacht sails). Manuel Guedes (Portugal), Joao Pinelo (Bahrain), and I had to upgrade our ideas for such a different climate. Bruce Haglund told me that the US Polar Vortex this winter brought extreme design home, but there you can compensate for such events, if rich enough, by paying higher energy bills. Resilience is about ensuring systems do not break<sup>1</sup> under extreme stresses and strains. It is about designing buildings and cities in which you can bounce forwards. How do you design a house in which you can comfortably survive, without the grid, in a snow storm in Boise? Doing a live project like this pushes one beyond her knowledge limits. We found our pre-conceptions changing over our two weeks on site. How can you understand the power of the wind and extreme cold without experiencing it? We also questioned the usefulness of models at the extremes. Powerful modelling tools helped to measure wind impacts on the envelope and the response of the structure to them (different packages), but the disconnect between tools hindered joined-up design thinking. Live projects also provide magic insights. For example, working out in air temperatures of 0°C (32°F), then finding that the radiant temperature is 3°C (34.4°F) because the surrounding rocks, warmed during the day, gave a clear indication of where a few free degrees of energy could be harvested. Every degree counts in extreme design, where the success of the relationship between a building and its site can mean the difference between success and failure. Similarly, heat or coolth can be harvested from within the tent. When heated with a camping stove, we measured 19°C (66°F) at the apex of the tent and 14°C (57°F) above its floor. The thermal landscapes<sup>2</sup> of the space can be exploited to enhance comfort—but how? We will present three papers on the Polar Lodge at the Comfort at the Extremes Conference (10–11 Apr 2019) where we hope to see some of you <<http://www.comfortattheextremes.com>> to exchange ideas on the design of truly thermally resilient buildings and cities. Before then, check out our blow-by-blow project blog at <<http://www.extremelodge.org/home/app/>>. Why not consider making one of your class projects about a building designed to enable occupants to cope, without grid energy, in some of the extreme climate events and trends being experienced today? Sensible preparation, perhaps, for the pretty wild weathers of tomorrow? 🖐

—Sue Roaf, March, 2019

<sup>1</sup> S. Roaf (2018). Building Resilience in the Built Environment, in *Architecture for Resilience: A series of interdisciplinary dialogues*, K. Trogal, R. Lawrence, I. Bauman and D. Petrescu (Eds.). Routledge, London.

<sup>2</sup> S. Roaf (2018). Thermal Landscaping of Buildings: Climate-Proofing Design, in *Activism in Architecture: the bright dreams of passive energy design*, Margot McDonald and Carolina Dayer (Eds.), Taylor and Francis Ltd., London, pp.145-174.



Putting the final touches to the guys-by-the-rock wind wall.



The first ORV8 skin attached to the yurt structure

## SCHOLARSHIPS GALORE!

SBSE is accepting applications for scholarships to fund attendance at the 2019 SBSE Retreat, Frontiers: Teaching Building Science in the 21st Century, to be held in Montana's Centennial Valley.

I am happy to report that scholarship funding has been increased this year. The Jeffrey Cook Memorial Faculty Retreat Scholarship, which will be awarded to a faculty member from a developing country, is \$1,600. Up to six Student Retreat Scholarships of \$750 each will be awarded.

The application deadline for both opportunities is Apr 1, 2019. Please help us get the word out and encourage your students and colleagues to apply.

SBSE is also accepting applications for scholarships until Jul 22 to support early-career faculty at the 2019 Reynolds Symposium: Education by Design.

Bookmark our scholarship page <<https://www.sbse.org/scholarships>> for more information on this year's Open Scholarship, ASES Solar 2019 Scholarships, and North American Passive House Conference (NAPHC) scholarships. 🖐

—Jonathan Bean

## RADIANT TEMPERATURE



South-facing basalt wall gets shorter as it goes east.



South-facing concrete wall in foreground vs. berm in background.

photos: Extreme Lodge blog

photos: Bruce Haglund

## SBSE PEOPLE

✂ Watch **Jonathan Bean's** TEDx talk on the potential of low and no carbon buildings: Demand Less. See <<https://www.youtube.com/watch?v=2XwBcqBXH5w>>.

⊗ Among this year's FAIA honorees are **Martin Gold** and **Alison Kwok**. Fellowship in this category is granted to architects who have made notable contributions through their work in education, research, literature, or the practice of architecture. Work in education may be teaching, research, administration, or writing and should have a lasting impact, be widely recognized, and provide inspiration to others in the field and the profession.

✉ **Bruce Haglund** was named University Distinguished Professor by the University of Idaho for sustained excellence in teaching, scholarly and creative achievement, breadth and depth in our discipline, professional outreach, and intensely sustained university service. 🙌

## JOB OPS

### UCLA

We are looking for new tenured or tenure-track faculty <<https://recruit.apo.ucla.edu/JPF04309>>.

We seek candidates with expertise in one or more of the following subject areas:

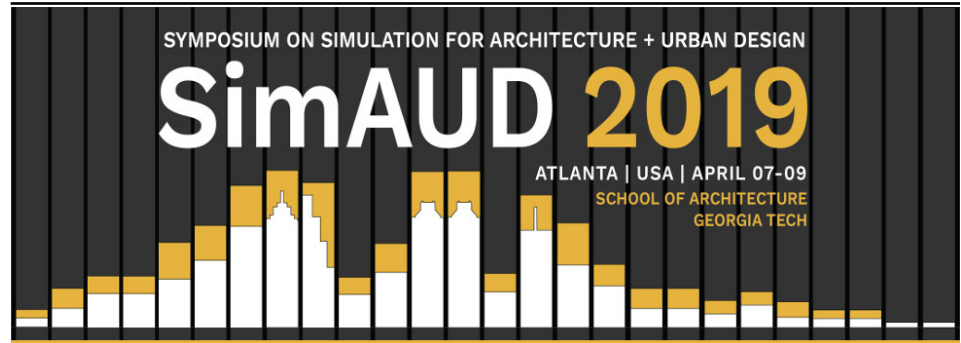
- Design technologies, broadly interpreted, involving implications for design and practice specific to a rapidly evolving technological landscape, pedagogical approaches unique to the teaching of design technology in the context of architectural education, theories of technology, and computation and/or digital fabrication.

- Design practice, especially in areas of the profession strongly driven by emerging technologies of design and their influence on building systems and professional practice. 🙌

—Murray Milne

## UPCOMING EVENTS

SIMAUD 2019, APR 7-9, ATLANTA, GA



Ten years have passed since the inaugural annual Symposium on Simulation for Architecture and Urban Design (SimAUD), and we want you to join us in the decennial celebrations! SimAUD 2019 <<http://simaud.com/2019/>> will be held this year in Georgia Tech, Atlanta, GA, Apr 7-9, and you are invited.

The full program is now available, featuring 40 single-track peer-reviewed long and short papers, practice-focused panels, eight half day pre-conference workshops, and four keynote addresses by Dana Cupkova from Carnegie Mellon University, Billie Faircloth from KieranTimberlake, Stefano Schiavon from University of California Berkeley and Dennis Shelden from Georgia Tech. This year we are also planning to play a sponsor-supported conference-wide simulation game!

Discounted conference accommodation is available, and registration is now open. It grants entrance to all conference activities and pre-conference workshops. You can also register for the workshops only. Early registration ended on Mar 4. Students are significantly supported due to the generous contributions of our sponsors: Autodesk, the US Department of Energy, NREL and IBPSA-USA, KPF, University of Oregon, EDSL-TAS, Cove.tool and IES.

We hope to see you and your team in Atlanta soon!

—Siobhan Rockcastle and Tarek Rakha

2019 GETTING TO ZERO FORUM, OCT 9-11, OAKLAND, CA

On behalf of New Buildings Institute and Rocky Mountain Institute, we want to thank SBSE for its past support and to invite you to again join us as a Community Partner for this upcoming event. Community Partners will be provided an in-kind sponsorship of the National Forum in exchange for promotional support. This exchange allows us to reach more individuals who are interested in low and zero energy buildings through your networks, and gives you an opportunity to more affordably associate with the growing zero energy, zero carbon market. You would receive a complimentary registration for your efforts and the opportunity to offer a 10% discount to your network. For every 10 registrations using the discount code, SBSE would receive another comp. [No brainer! The SBSE Board accepted the invitation. Contact <[bhaglund@uidaho.edu](mailto:bhaglund@uidaho.edu)> to get the discount or the freebie.]

During the three-day, solutions-focused conference, delegates will share perspectives on the growth of zero energy and zero carbon buildings, learn about best practices for successful projects and collaborate on opportunities to transform the built environment. 🙌

—Stacey Hobart

GETTING TO  
**zero**  
FORUM 2019

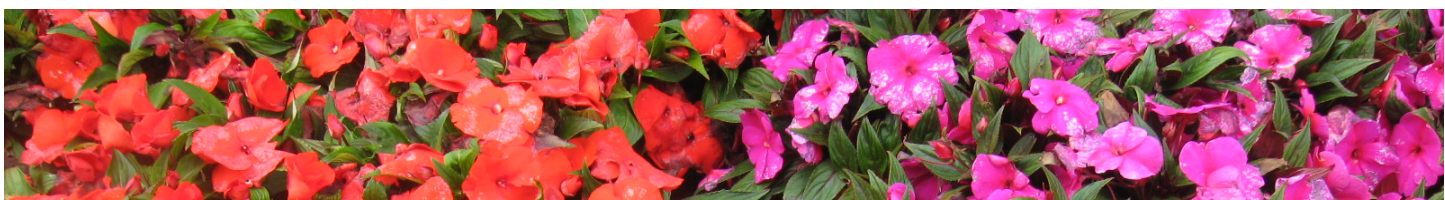


photo: Bruce Haglund



## HUMAN BEHAVIOR IN BUILDINGS

Predicting the action and behavior of human beings, in all of its forms, has always been an exciting phenomenon. However, it has rarely led to reliable conclusions. This inability to accurately map human behavior patterns was mostly associated with lack of knowledge and technology to track and analyze everything that goes into people's decision-making processes. Thanks to the recent developments in data science, artificial intelligence, and machine learning, we can parse huge amounts of data in order to decipher specific patterns to predict human behavior. These methods are used every day by advertisers to find their target customers, or by Amazon to offer similar products, or by Netflix to suggest films.



graphic: Amir Nezamdoost

Using Artificial Intelligence (AI) methods (e.g. machine learning, deep learning, and computer vision), our team is trying to predict and decode occupants' behavior in built environments in order to help architects design more favorable and comfortable spaces, provide building scientists a better look into building performance and energy efficiency, assist researchers in conducting more reliable human-factor studies by understanding the way people operate buildings, help building owners reduce operation costs, and finally collaborate with university instructors to introduce new technologies and data collection methods to the next generation. The field of architecture and building science, like other fields, requires massive amounts of accurate, high-quality, and human-labeled training data, in order to respond building users' expectations more easily, efficiently, and at scale. Our team is ready and eager to help companies, universities, and research teams meet that challenge. Together, we can create a better built environment for every occupant. For further information, please feel free to contact me at <amir.nezam00@gmail.com>.

We'll officially launch our research and development (R&D) company in a few months. In the meantime, our team keeps working hard on a few projects. Last month, we announced that two of our projects have been supported by Silicon Valley investors and may spin out as stand-alone start-ups. 🙌

—Amir Nezamdoost

## BOTTLE HOUSE

### What is a bottle house?

Bottle house is a building construction technology that is a cost-effective, environmentally-friendly alternative to conventional building bricks. The house is built up by waste Polyethylene Terephthalate (PET) plastic bottles filled with sand or soil as a building unit for eco-sustainability.



photo: Rupesh Shrestha

A student workshop was conducted for disseminating knowledge about this technology. Students from architecture/engineering colleges in Kathmandu volunteered in construction of this house that is made for a earthquake-affected family. The idea was to involve students during actual construction so that they can benefit in following ways:

- Working with community as a volunteer
- Exposure to the sustainable building construction technology sector
- Leadership development
- Out-of-class learning experience in a post-disaster reconstruction setup

Here's the link to pictures of the workshop and practical session <[https://drive.google.com/file/d/1loCwowIOeFVhmf6MHSHN1t-g-k\\_A5ZLZ/view?usp=sharing](https://drive.google.com/file/d/1loCwowIOeFVhmf6MHSHN1t-g-k_A5ZLZ/view?usp=sharing)>

Your comments and suggestions in this regard will be highly appreciated and always will be well received !

—Rupesh Shrestha

## ALTERNATIVE TO A BORDER WALL?

Instead of a wall, build a first-of-its-kind energy park that spans the 1,954 miles of the border between the United States and Mexico to bring energy, water, jobs and border security to the region. It's the audacious plan put forward by a consortium of 28 prestigious engineers and scientists from across the nation who propose that the two nations work together on an enormous infrastructure project: a complex train of solar energy panels, wind turbines, natural gas pipelines, desalination facilities that together would create an industrial park along the border unlike anything found anywhere else in the world. Building an energy corridor along the border instead of just a wall would be a "giant leap for mankind," bringing security and jobs to the region, says a Purdue University-led national consortium of engineers and scientists.



graphic: REW

See <[https://www.renewableenergyworld.com/articles/2019/03/what-if-the-usmexico-border-wall-was-an-energy-corridor-that-could-pay-for-itself.html?cmpid=&utm\\_source=enl&utm\\_medium=email&utm\\_campaign=renewable\\_energy\\_news&utm\\_content=2019-03-13&cid=291060930&bid=2392016](https://www.renewableenergyworld.com/articles/2019/03/what-if-the-usmexico-border-wall-was-an-energy-corridor-that-could-pay-for-itself.html?cmpid=&utm_source=enl&utm_medium=email&utm_campaign=renewable_energy_news&utm_content=2019-03-13&cid=291060930&bid=2392016)>.

[Sure, but I'd like to see a more verdant and ecologically based proposal!—ed.] 🙌

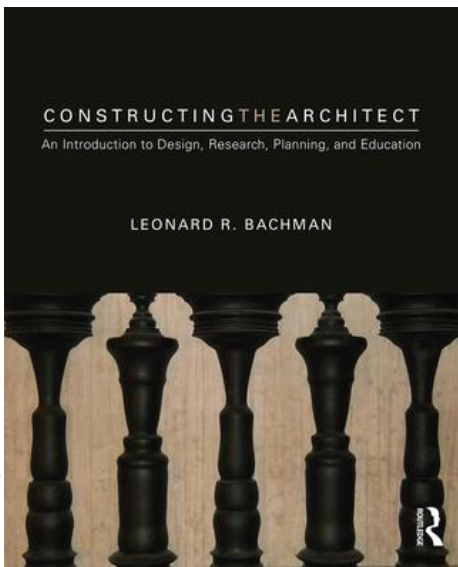
About 50 years ago, there was a project using disposable glass beer bottles re-designed to be interlocked to build houses as an alternative to bricks. Architectural writer/critic Martin Pawley reignited interest in the project with his book *Garbage Housing*. See <<https://www.smithsonianmag.com/arts-culture/when-heineken-bottles-were-square-62138490/>> and <<https://inhabitat.com/heineken-wobo-the-brick-that-holds-beer/>>.

It's certainly time to revisit (and update) these ideas. 🙌

—Richard Lorch

## SBSEERS' BOOKS

CONSTRUCTING THE ARCHITECT  
BY LEONARD BACHMAN



cover: Routledge

*Do you see architects or woodwork?*

Unlike books that concentrate on the monuments and other artefacts that architects produce, *Constructing the Architect* focuses on architecture as a disciplinary and professional process, an institution of society, and a career of learning and mastery. In doing so, it offers a lens into the architecture of architecture.

Mapping architecture as a coherent whole, Leonard Bachman shows that the field must be understood as four mutually reinforcing modes of inquiry: design, research, strategy, and education. Within this framework, he explains how institutions and actors hold differing perspectives on the critical discourse that advances architecture and identifies the various tensions and leverage points for change within the discipline.

Featuring over 100 illustrations to support understanding of this highly visual subject, this is an essential introduction for any student seeking to understand what it means to be an architect and to enter the professional discourse. 🖐

—Routledge blurb



photo: Bruce Hoglund

## THEN AND NOW

The latest social media sensation is the #10YearChallenge, for which celebrities post 'compare and contrast' images from a decade ago and now. To mark the 10th anniversary of its relaunch issue, *CIBSE Journal* has gone back to two prominent industry figures who featured in that 2009 edition. On the cover was Transport for London's (TfL's) environmental manager Quinten Babcock, who had just been named CIBSE Champion of Carbon Saving Champions. Inside, Bill Bordass, research and policy adviser for the Usable Buildings Trust, wrote about why buildings in 2009 were failing to meet designers' goals or users' expectations. Ten years on, we wanted to know whether Bordass was more optimistic and whether Babcock still had a champion's thirst for delivering sustainable buildings. *[To catch up on Babcock, you'll have to do the #10YearChallenge thing.—ed.]*

If he had been told 10 years ago how little progress would be made on tackling climate change, the building scientist Bill Bordass would have been 'completely shocked.' The 2009 Copenhagen UN climate change summit—expected to be a breakthrough—was, in Bordass's words, 'a fiasco.' It took until Paris 2015 for substantial progress to be made. At the recent follow-up event in Poland, there was more appreciation that urgent action is required: 'People are realizing it is the last-chance saloon: if we don't get a grip on things well before 2030, it will be far too late.' In his 2009 article, Bordass said the UK government was 'committed' to improving the sustainability of new and existing buildings, but wasn't going about it effectively: 'too much rhetoric and not enough action.' After 10 years, his 'big disappointment' is faltering progress on DEC's, with government support 'completely hopeless.' Bordass had been part of a team that had worked hard between 2000 and 2008 to 'make in-use performance visible and actionable' by helping to get Display Energy Certificates established in the UK and the EU. He also worked with CIBSE to develop the TM47 process and benchmarking system—designed to evolve rapidly with feedback, but completely neglected since publication, because DCLG did not make its database an open, public asset, but outsourced it.

Bill is still firmly in the swing, contributing to the debate from his platform at the Usable Buildings Trust charity. He fears humanity has left it too late to stop irreversible climate change, but is determined to do his bit to limit the damage, while also making buildings nicer for people. 'Things are improving, but at nothing like the rate they should,' he warns. 'In many existing buildings (including new ones,) a tune-up can reduce energy use by typically 20%, with a further 20% from low-cost alterations. How about a "Saving Energy in a Hurry" project to crystallize these quick wins? It would cost less than one Hinckley, save more energy than the whole nuclear programme, and could be on-stream well before Hinckley even started up. Are CIBSE and its members up for it?' 🖐

—CIBSE, Jan 2019



cover: CIBSE Journal

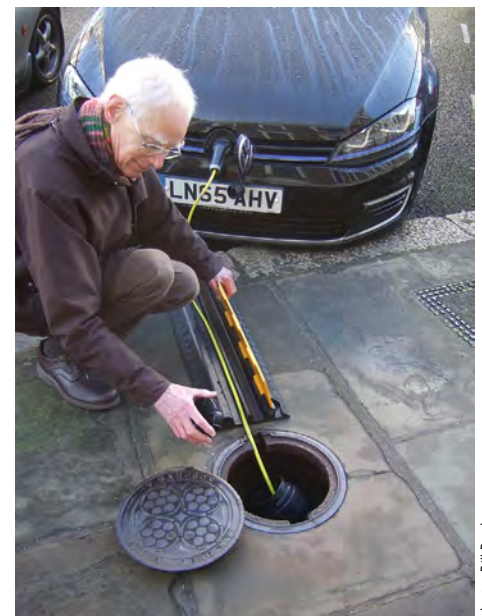


photo: Bill Bordass

Bill Bordass in 2019 charging his new hybrid car via his terrace home's repurposed coal hole.



## OUR WORK IS DONE HERE

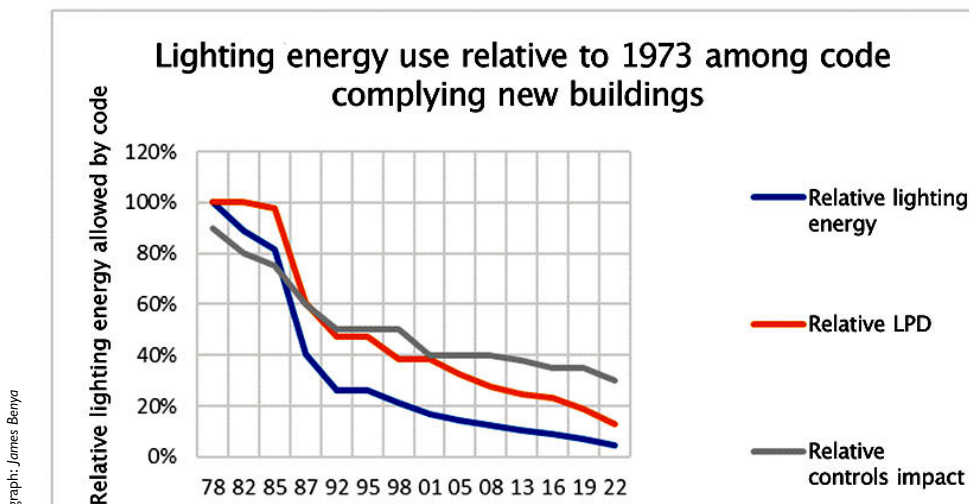
[This bit is excerpted from an Illuminating Engineering Society article posted 14 May 2018 at <<https://www.ies.org/lda/our-work-is-done-here/>>-ed.]

### The law of diminishing returns catches up to our energy codes. So what's next?

In 1973, a typical classroom or office drew 5 to 6 watts per sq ft for lighting, providing over 1,000 lux. Also, for most commercial applications, lighting was never switched off for appearance and was used for heating the building. And then, virtually overnight, the oil embargo of 1973 started a "movement" to conserve energy in buildings.

Early energy standards, ASHRAE 90.1-1975 and California's Title 24, forced the staid lighting industry to respond and the seeds of a business in energy efficiency in lighting were planted. At first using readily available technology, the lighting industry seized the business opportunity, and over the next 20 years a regular cycle of inventions and efficient products such as motion sensors, more efficient lamps and electronic ballasts caused ever-decreasing energy code power allowances.

Steering all of this are the ANSI/ASHRAE/IES 90.1, IECC and Title 24 lighting standards. These standards have been adopted by most states as energy codes. Since 2001, these energy codes have been revised every three years, which, in turn, has created code-compliance businesses in simulations, implementation, installation and training, as well the business of updating the codes.



The codes worked well; by 2013, lighting power density (LPD) in new buildings had decreased by 80 percent and operating time had dropped over two-thirds compared to 1973.

In our current decade, the tech sector has finally gotten interested in lighting thanks to LEDs, cost effective controls, wireless communications; more new businesses in lighting were created in the last eight years than all of those that existed in 1973. With these exciting developments, the energy use by lighting will average about 93 percent less by the end of this decade compared to 1973. No other energy savings in the design for buildings comes close.

We have reached a point where our reason and approach to lighting energy codes must change. A good code should prevent bad design, embracing evolving emerging technology, but it must also respect good design and reduce the heavy cost of compliance. We need to realize how well we've done and stop trying every three years to make the lighting code tighter. We've done our job as an industry. We cannot save 100 percent of energy, can we? Instead, rather than continuing to pour enormous resources into new lighting energy codes, we should redirect our brainpower and businesses toward reducing energy use in existing buildings. It's time to say for new construction the job is done, and work together to make just as big a difference in the existing building stock as quickly as possible. 🙌

—James Benya

## MORE ON LIGHTING

### THE RIGHT ENVIRONMENT



cover: Metropolis

Metropolis magazine, in partnership with Lutron, presents The Right Environment: a series of profiles featuring experts [So far two of the three are SBSEers.—ed.] who are helping to make buildings better for occupants. For the second installment of the series Nov 19, 2018, Metropolis caught up with design researcher and consultant, Lisa Heschong. Heschong shared her insights on the importance of daylight in building design, and how considerations around daylighting and view quality, along with use of technological innovations, help create The Right Environment. See <<https://www.metropolismag.com/design/lighting/lutron/>>.

For the third installment of the series Feb 25, 2019, Metropolis caught up with Kevin Van Den Wymelenberg, who shared his insights on the increasing demands for flexibility and control in lighting to help create The Right Environment. See <<https://www.metropolismag.com/design/lighting/the-right-environment-kevin-van-den-wymelenberg-on-increasing-demands-for-lighting-controls-in-2019-and-beyond/>>. 🙌

—Bruce Haglund



photo: Bruce Haglund

photo: AFP



Greta Thunberg staging a school strike in Sweden..

## NOBEL PEACE LAUREATE?

Thanks to Norbert Lechner, who knows which way the wind blows and sun shines, for turning the SBSE audience on to Greta Thunberg, the Swedish schoolgirl who has inspired an international movement to fight climate change and has been nominated as a candidate to receive this year's Nobel Peace Prize.

She was nominated by three Norwegian MPs. "We have proposed Greta Thunberg because if we do nothing to halt climate change, it will be the cause of wars, conflict, and refugees," Norwegian Socialist MP Freddy Andre Ovstegard told AFP news agency. "Greta Thunberg has launched a mass movement, which I see as a major contribution to peace," he added.

The Swedish teenager—who on her Twitter page describes herself as "a 16-year-old climate activist with Asperger's [syndrome]"—first staged a school strike for the climate in front of the Swedish parliament in August last year. Since then, she has been missing lessons most Fridays to stage her regular protests. She has continued to gain international attention after speaking at the UN Climate Talks in Poland in December and at the World Economic Forum in Davos in January. "On climate change, we have to acknowledge that we have failed," she told global economic leaders in Davos.

Like the field for democratic presidential nomination, it's a crowded race. There are 301 candidates for the Nobel Peace Prize for 2019, out of which 223 are individuals and 78 are organizations according to the Nobel committee's web site.

One place you can read all about it is from non-fake BBC News <<https://www.bbc.com/news/world-europe-47568227>>. 🖐

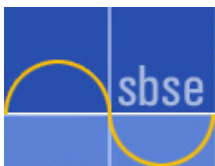
—Bruce Haglund

## SBSE CALENDAR

### 2019

Apr 7-9	SimAud 2019/Atlanta, GA, USA
Apr 10-11	Comfort at the Extremes 2019/Dubai
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 9-11	Getting to Zero Forum/Oakland, CA, 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: Tisha Egashira

\* Thanks to all SBSEers, we're simply "standing on the shoulders of giants."