

### ***December Member Meeting***

#### **Green Gone Bad: Examples of Unintended Indoor Environmental Quality (IEQ) Consequences**

Tuesday, December 08, 2015

Speaker: Derrick A. Denis (Dĕn-āy), CIEC, CIAQP, CAC, V.P. of IEQ for Clark Seif Clark, Inc. (CSC) in Tempe, AZ

“Green Buildings”, for all their merits and good intentions, can be flawed, when it comes to occupant comfort and occupant health. Green buildings are often carefully designed and constructed to use recycled, recyclable, locally produced, renewable and energy efficient materials, but indoor environmental quality or IEQ is habitually not high on the priority list of even the most vigilant of green designers and builders.

Aside from sometimes overlooking IEQ, green buildings are often plagued by the “Devil that we don’t know.” New, unproven building materials or installation techniques applied to save money or save the environment can wreak unexpected consequences on IEQ. Like our bodies, a building is a collection of individual materials (think tissues). These materials make up building components (think organs). Groups of components make up building systems (think body systems like respiratory, circulatory, nervous, etc.). These systems all work independently and collectively in a complicated puzzle make up the whole building or the body. Insult, remove or damage one piece of this complicated puzzle in a building or a body and the entire structure can become ill.

Come and learn about a variety of “green building” techniques that negatively impacted actual buildings. We will discuss the who, what, when, where and why of various failures. We will provide real world examples. We will discuss lessons learned in order to help in the mitigation or prevention of these green-gone-bad examples.

### **December Member Meeting (*cont’d*)**

Date: 12/08/2015

Location: Pappadeaux Seafood Kitchen  
5011 Pan American Fwy NE,  
Albuquerque, NM 87109

Social hour: 11:30 am – noon

Presentation: noon – 2 pm

Cost - Members: \$25

Cost - Guests: \$30

[Register online at newmexicoashrae.org](http://newmexicoashrae.org)

### ***Message from the President***

Thanksgiving is behind us and now it’s time to grind through the next few weeks to get to some more time off. December is about the halfway mark through our ASHRAE year and if you haven’t made it out to a chapter meeting yet, I really suggest you try. We have some great speakers lined up for the upcoming months.

Last month we had Charles Fledderman present on ethics, allowing many of us to get our 2 hours of ethics PDHs required to renew our PE licenses. We had a very solid turnout and will look at providing ethics training in future years.

Happy Holidays

**Joseph Higham, PE**

President, 2015-2016

[joeh@varitecsolutions.com](mailto:joeh@varitecsolutions.com)

505-288-2101

## Upcoming Events

- Dec 8, 2015**     **Joint Meeting with IAQA**  
Green Gone Bad: Examples of Unintended Indoor Environmental Quality (IEQ) Consequences  
11:30am – 1pm at Pappadeaux Seafood
- Jan 19, 2016**     **General Meeting**  
*Distinguished Lecturer:* Update on Refrigerants: Past, Present, and Future  
11:30am – 1pm at Pappadeaux Seafood
- Feb 2016**         **Joint Meeting with AEE**  
Lessons Learned in Solar Hot Water  
Location: TBA
- March 2016**     **General Meeting**  
*Distinguished Lecturer:* Best Practices in Geothermal Water Source Heat Pump Systems  
11:30am – 1pm at Pappadeaux Seafood
- April 2016**      **General Meeting**  
Computer Room Air Conditioning  
11:30am – 1pm at Pappadeaux Seafood
- May 2016**        **Awards Meeting**  
5:30pm – 7pm at Pappadeaux Seafood

[Register for events online at newmexicoashrae.org](http://newmexicoashrae.org)

## A Unique Opportunity Awaits You

Are you interested in furthering your career, building your network of professionals, strengthening your leadership skills and implementing new ideas within our professional community? If so, the New Mexico chapter of ASHRAE has an incredible opportunity for you. We are seeking several individuals within the HVACR industry to join the leadership team of the chapter.

Contact Joe Higham, [joeh@varitecsolutions.com](mailto:joeh@varitecsolutions.com), 505-288-2101 to learn more.

## IAQA & ASHRAE Dual Membership



A new dual membership program is available to members of the Indoor Air Quality Association (IAQA) and ASHRAE as part of consolidation between the two groups finalized earlier this year.

Active IAQA Individual Members are eligible to receive a 25% discount on ASHRAE Membership when joining (and renewing) ASHRAE as a MEMBER or ASSOCIATE (please view the member grades page for eligibility requirements).

Individual IAQA members can join (and renew) ASHRAE as a Member or Associate for only \$151 (a \$51 savings!). Why take advantage of this offer?

- Savings on certifications, continuing education courses, society meetings, and the ASHRAE Bookstore
- Connect with members locally by participating in one of 179 active chapters globally
- Receive first year complimentary subscription to the Handbook Online + a free print edition of the ASHRAE Handbook (printed & mailed each June)
- Subscription to the monthly ASHRAE Journal, quarterly High Performance Buildings Magazine, and weekly E-Industry newsletter

Join ASHRAE today! Call us at 404.636.8400 or email [membership@ashrae.org](mailto:membership@ashrae.org) to take advantage of this offer (not available to online applicants).

## Save the Date!

### 2016 Annual Golf Tournament



**September 9, 2015**

**At UNM Championship Golf Course**

Send any comments and suggestions to Allen Anaya at [allena@varitecsolutions.com](mailto:allena@varitecsolutions.com)

## From the History Books

1954

### Founding of the New Mexico Chapter

Transcript of the original  
minutes taken: ASHVE



First meeting of the proposed chapter was held on January 29, 1954 in the Teepee Room of the Franciscan Hotel in Albuquerque.

9 members and 3 non-members attended:  
Bill Beale, Henry Frankenfeld, Marcello Giomi, Roger Haines, Jack James, Warren Jones, Ed Kryeko, Hugh Munn, Don Paxton, Bob Smith, J. H. Van Alsborg, Neal Vinson

Officers appointed:

Chairman:	Jerry Van Alsborg
Vice Chairman:	Hugh Munn
Secretary:	Jack James

## YEA Update

The YEA social was a good time for all that attended. It was good to see the support for the YEA members and for all of those that showed up to enjoy the lanes. It turns out we have several ringers in our membership. Thank you to all that attended, we will be hosting another bowling event in the spring so stay tuned for news and plan on joining the fun next time.

## Job Postings

Place a job listing on our website and newsletter!

To place an ad, the employer must have at least one NM ASHRAE member working in the firm or pay a fee of \$50 per month per ad.

For more info: [newmexicoashrae.org/jobs](http://newmexicoashrae.org/jobs)

For more job opportunities, check out the Job Board on [www.ashrae.org/jobs](http://www.ashrae.org/jobs)

## Research Promotion Update

This year ASHRAE-NM has set a research promotions fundraising goal of **\$8,300** by May 2016. We have currently raised **\$1,628** towards our goal! 100% of funds go directly into the research program to develop and advance our industry.

### / 2015-2016 NM Chapter RP Progress /

Goal: \$8,300.00

Collected: \$1,628.00



20%

Members can submit individual or company contributions with their dues payment, or by allocating all or a portion of their reimbursements on the Travel Vouchers, or by sending their contributions to their chapter's Research Promotion chair. Companies can also send their research investments to their local ASHRAE chapter chair or directly to ASHRAE headquarters made payable to ASHRAE Research and addressed to: Research Promotion, 1791 Tullie Circle, Atlanta, GA 30329.

[Online Contribution Form](#)

Together, we can make a difference in the future of our industry.

## 2015 – 2016 Board of Governors

<b>Past President</b>	David Graham ( <i>T&amp;D Services</i> ) <i>T&amp;D Services</i>	<a href="mailto:DGraham@t-d-services.com">DGraham@t-d-services.com</a>
<b>President</b>	Joseph Higham <i>Varitec Solutions</i>	<a href="mailto:joeh@varitecsolutions.com">joeh@varitecsolutions.com</a>
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<b>Historian – Regional Vice Chair</b>	Gary Grange <i>Varitec Solutions</i>	<a href="mailto:garyg@varitecsolutions.com">garyg@varitecsolutions.com</a>
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<b>Research Promotion</b>	Morgan Royce <i>Beaudin Ganze Consulting Engineers</i>	<a href="mailto:mbroyce@bgce.com">mbroyce@bgce.com</a>
<b>Student Activities Chair</b> <b>YEA Chair</b>	Ryan Shaffer <i>Johnson Controls</i>	<a href="mailto:ryan.shaffer@jci.com">ryan.shaffer@jci.com</a>
<b>Golf Tournament</b>	Allen Anaya <i>Varitec Solutions</i>	<a href="mailto:allena@varitecsolutions.com">allena@varitecsolutions.com</a>
<b>Membership Chair</b>	<i>Interested in this position? Contact Joe Higham!</i>	

Check out our website to find out more about the Board, committees, and our initiatives. Contact any of the board members if you are interested in becoming more involved in our chapter. There are plenty of opportunities!

# 2016 ASHRAE Winter Conference

Jan. 23–27 | Orlando Hilton | Orlando, Fla.

*New Technical Program Tracks, Networking,  
World's Largest HVAC&R Marketplace*

Special first time attendee registration fee available! Low, early-bird registration rates end Nov. 2. Register early! Registration to the ASHRAE Winter Conference includes free access to the AHR Expo!





**2016 AHR Expo**  
Jan. 25–27 | Orange Co.  
Conv. Center | Orlando, Fla.

Venues are strategically located next to each other for easy access.



# Society News

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1791 Tullie Cir. NE | Atlanta, Ga. 30329-2305 | 404-636-8400 | [www.ashrae.org](http://www.ashrae.org)

## **ASHRAE and IBPSA-USA SimBuild 2016 Conference Announces Call For Presenters**

Nov 23, 2015

Contact: Jodi Scott / Public Relations / 678-539-1140 / [jscott@ashrae.org](mailto:jscott@ashrae.org)

ATLANTA – The ASHRAE and IBPSA-USA SimBuild 2016: Building Performance Modeling Conference has announced a call for presenters.

The co-organized conference takes place Aug. 10-12, 2016, Salt Lake City, Utah. To submit an abstract or for more information, visit [www.ashrae.org/simbuild2016](http://www.ashrae.org/simbuild2016).

“The practical application of modeling buildings includes a broad range of professional services requiring an equally broad range of expertise, knowledge, skills and tools. This call for presentations addresses these practitioner needs,” Dennis Knight, conference chair, said.

Modeling is useful throughout a building’s life cycle from analyzing individual elements and assemblies at the beginning stages of design through measuring the performance of a building after it is constructed and using calibrated models to improve performance.

While energy may be the single-most highly visible form of modeling, it is clear that practitioners face many other requirements, such as occupant comfort (acoustics, thermal and visual), indoor environmental quality, sustainability, resilience, life safety, system design, component selection, documentation, code compliance, utility incentives analysis, and building performance rating and labeling programs, to name a few.

“This expanded scope of work facing modelers combined with integrating tools like BEM and SIM with BIM describe the challenges facing practitioners today. Through the call for presenters and invited speakers, the conference aims to provide ways to address these common concerns.”

With a goal to address the lifecycle of buildings, the overall theme for the conference is “Using Simulation to Improve Building Performance from Planning and Design to Construction, Operations and Retrofit.”

The conference seeks practical application presentations on the following building modeling topics:

- Energy efficiency
- HVAC component modeling and load analysis
- Urban scale modeling
- Lighting and daylighting
- Optimization
- Computational fluid dynamics
- Data exchange and interoperability
- Energy auditing
- Life cycle cost and economic analysis
- Model calibration and validation

- Automation and scripting
- Weather data for modeling
- Occupant comfort
- Heat, air, moisture modeling
- Uncertainty analysis
- Big data applications for large scale simulations
- Standards, organization, best practices and workflow for BEM and SIM
- Documenting existing conditions in BIM using photographs, laser scans and point clouds for use in BEM and SIM applications

Modelers, software developers, architects, engineers, building owners and other practitioners are invited to submit presentation proposals on these topics. Presentations addressing case studies, workflow and process, cloud-based solutions, and challenges and work arounds are encouraged.

“These presentations should address the practices of building modeling using existing tools,” Knight said.

Abstracts (400 or less words in length) and a 100-word promotional abstract are due Feb. 3, 2016. Papers are not required for accepted presentation proposals.

To submit an abstract or for more information, visit [www.ashrae.org/simbuild2016](http://www.ashrae.org/simbuild2016).

A call for papers recently closed with more than 200 abstracts received. Abstracts are currently being reviewed, and authors of accepted papers will present at the conference as well.

The conference will cover two-and-a-half days and will be preceded by two days of optional training seminars and short courses.

*ASHRAE, founded in 1894, is a global society advancing human well-being through sustainable technology for the built environment. The Society and its more than 54,000 members worldwide focus on building systems, energy efficiency, indoor air quality, refrigeration and sustainability. Through research, standards writing, publishing, certification and continuing education, ASHRAE shapes tomorrow’s built environment today. More information can be found at [www.ashrae.org/news](http://www.ashrae.org/news).*

*IBPSA-USA is the United States regional affiliate of the International Building Performance Simulation Association (IBPSA). The mission of IBPSA-USA is to advance and promote the science of building simulation in order to improve the design, construction, operation and maintenance of new and existing buildings in the United States.*

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Shaping Tomorrow's  
Built Environment Today

## **ASHRAE Announces Recipients Of Student Design Competition; Applied Engineering Challenge**

Nov 17, 2015

Contact: Jodi Scott / Public Relations / 678-539-1140 / jscott@ashrae.org

ATLANTA – Heat – whether in designing a building in Qatar or a temporary structure for heat illness victims – was the focus of two ASHRAE competitions challenging students in their engineering skills.

The 2015 Design Competition focused on a three-story classroom and office building in Doha, Qatar, while for the Applied Engineering Challenge, students were required to design a collapsible portable conditioned shelter for treatment of heat illness victims. Thirty-nine teams representing 10 countries entered the events.

First place recipients in the HVAC System Selection are from the University of Nebraska-Lincoln. Team members are Brianna Brass, currently seeking a Master's of Architectural Engineering degree, University of Nebraska-Lincoln; Matthew Easlon, Feinschule Hagwon, Gwangju, Korea; Mary Kleinsasser, currently seeking a Master's of Architectural Engineering degree, University of Nebraska-Lincoln; Ben MacKenzie, mechanical engineering intern, Affiliated Engineers, Madison, Wis.; and Rachel Obenland, currently seeking a Master's of Architectural Engineering degree, University of Nebraska-Lincoln. The faculty advisor is David P. Yuill, Ph.D., P.E., while industry advisors are Joe Hazel, P.E., HFDP, Specialized Engineering Solutions, Omaha, Neb., and Dan Karnes, Leo A. Daly, Omaha, Neb.

After comparing HVAC system options, the team chose a water source heat pump system utilizing a closed seawater loop field. The system had the lowest life cycle cost of the three systems considered. The seawater loop field provides a sustainable energy source with a low environment impact. Comfort and indoor environmental quality are easily maintained due to the adjustability of the system within the building.

The system showed a 44 percent energy improvement over the baseline. It is projected to cost \$3.8 million over a 50 year period, which is \$695,000 less than a variable air volume air handling system with thermal ice storage option and \$220,600 less than fan coil units with a dedicated outside air system and thermal ice storage option.

First place recipients in the HVAC Design Calculations also are from the University of Nebraska-Lincoln. Team members are Kristin Hanna, currently seeking a Master's of Architectural Engineering degree, University of Nebraska-Lincoln; Garrett Johnson; Mark Wilder, mechanical intern, M.E. Group, Omaha, Neb. The faculty advisor is David Yuill, Ph.D., P.E.

To address the peak cooling load of 157 tons, students designed a thermal ice storage system, which allows the chiller size to be reduced to 100 tons while still meeting load. Although the ice storage system adds initial cost, it is shown to reduce life cycle cost because of the reduction in initial cost for the chiller and reduction of energy used during peak demand hours throughout the cooling season.

The team also designed a creative condenser water heat rejection approach, using several decorative fountains on the school grounds. The approach is unusual but has been implemented in the Museum of Islamic Art in Doha. Heat and mass transfer calculations show that a total of 240 square meters of fountains will be required.

First place in the category of Integrated Sustainable Building Design goes to a team from Portland State University. Team members are Krestina Aziz, architectural designer, Otak, Portland, Ore.; Adam Buchholz, estimator, Johnson Air Products, Portland, Ore.; Nicole Dunbar, mechanical designer, Mazzetti Inc., Portland, Ore.; Lee H. Han, mechanical engineer, PAE Consulting Engineers, Seattle, Wash.; Joel Joiner, project manager, Hydro-Temp Mechanical, Wilsonville, Ore.; Osman Sarper Kucuk; Blake Reynolds, mechanical designer, Interface Engineering, Portland, Ore.; Natalie

Sherwood, mechanical designer, Interface Engineering, Portland, Ore.; Huy Tran, CLEARResult, Portland, Ore.; and Alex Wilson, graduate student, Portland State University. The faculty advisor is Huafen Hu, Ph.D.

The team worked to integrate site location, building orientation, envelope components and mechanical systems to achieve a building approaching net zero energy. The building site was chosen on the basis of wind direction, public transportation and proximity to the Persian Gulf to take advantage of any naturally cooled air. For mechanical system design, they chose a combination of radiant beams with a dedicated outdoor air system, energy recovery ventilators and thermal storage.

Low flow plumbing was selected to reduce the building's reliance on the energy intensive desalinated water available in Doha. Shading and orientation also played an important role due to the high solar gain the region. Solar generation was chosen for a source of renewable energy.

For the Applied Engineering Challenge, students were required to design a collapsible portable conditioned shelter that can be assembled in the field to assist in the treatment of a victim of heat illness, including heat exhaustion and heat stroke.

The first place Applied Engineering Challenge recipients are from California Polytechnic State University, San Luis Obispo: Miren Aizpitarte, project engineer, Critchfield Mechanical Inc., San Jose, Calif.; Cinthya Mendez, mechanical engineer, Western Allied Mechanical, Menlo Park, Calif.; Julia Stone, mechanical facilities engineer, Intel, Chandler, Ariz.; and Willis Tang, design engineer, ACCO Engineered Systems, Glendale, Calif. Their faculty advisor is Jesse Maddren, Ph.D., P.E.

The team chose a pentagonal structure with an airbed and chilled pad inside. The structure was cooled by a portable air-conditioning unit with an evaporative cooling option for dry climates. The tent walls, doors and roof are thinly insulated, and also feature air gaps and layers of nylon shading material. There also is a clear plastic observation window.

The portable, conditioned structure will effectively treat victims of heat exhaustion, heat cramps and heat rash on job sites. Design criteria were developed to ensure that construction workers, who are the target audience, would be comfortable in the structure for an extended period of time.

The projects will be shared at the 2016 ASHRAE Winter Conference, Jan. 23-27, Orlando Hilton, Orlando, Fla. Also taking place at that time is the ASHRAE co-sponsored AHR Expo, Jan. 25-27, Orange County Convention Center, Orlando.

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