



ASHRAE

Technology for a Better Environment
Northern Nevada Chapter 126
February 2011 Newsletter

PRESIDENT'S MESSAGE: BRANDON ETCHEMENDY

I want first start by thanking Mr. Eric Tinglof for the presentation on fan energy optimization. Last month was our first dinner at Claim Jumper was a success. I think we may have found a home for the remainder of the season and the schedule will remain the same, **5:30 for cocktails and 6:00 for dinner**. Mr. Little will have all of the details for this month's upcoming dinner.

Our annual sporting clay shoot fundraiser is closely approaching and will be here before we know it. The clay shoot will be held at Sage Hill Gun Club on April 16th. There are still remaining team slots available and if you are unable to attend the event, but still want to participate we have plenty of donation opportunities for our choosing. For all of the details see the attached flyer at the end of this newsletter.

Keep those donations coming for research and promotions; they are what keep our industry proactive for the betterment of our industry. If you would like to make a donation, contact Jason Bender jbender@calhydro.com or myself brandon@aspenreno.com.

I look forward to seeing you at this months meeting!

Brandon Etchemendy
Chapter President 2010-2011
Northern Nevada Chapter

PRESIDENT ELECT / PROGRAMS CHAIR:
CHRIS LITTLE

February Meeting ~ Thursday, February 17th, 2011
The meeting will be held at the Claim Jumper Restaurant
Cocktails at 5:30, Dinner at 6:00

Claim Jumper Restaurant
4905 S. Virginia St. Reno, NV 89502
(775) 829-0200

“Methods of Effective Room Air Distribution”

Overview:

In order to meet the increased expectations of building occupants, designers must be aware of the conflicts between first cost economics, occupant productivity and life cycle costs. Buildings that do not meet the needs of the occupants often result in expensive redesign or worse, result in lawsuits against all parties involved. First, we need to understand the rules:

- LEED: Many are not aware of some significant changes that have resulted in air distribution, IAQ and Comfort in the 2009 version. And I am on the committee writing the 2012 version.
- Thermal Comfort: Determining optimum occupant comfort strategies. ASHRAE Standard 55 has been revised.
- Acoustics: Accurately predicting end use environments. A new classroom acoustical requirement needs to be understood.
- IAQ: The changing face of ASHRAE Standard 62.1, and upcoming developments.

With the goal of saving energy over the 90.1 baseline (Overhead VAV), many architects are challenging the mechanical engineer to come up with alternate systems that will meet this goal. Displacement Ventilation (DV), Underfloor Air Distribution (UFAD) and Chilled Beams all have a potential to save energy, and meet these needs. I will briefly cover pros and cons of all 4 methods of air delivery:

- Overhead air distribution
- DV (Displacement Ventilation)
- Underfloor Air Distribution (UFAD)
- Chilled Beams and the DOAS Fan Box

Speaker: Dan Int-Hout III, FASHRAE
Chief Engineer
Krueger
Richardson, TX.

Dan Int-Hout, Chief Engineer, Krueger, is responsible for the presentation of technical data and advanced application engineering for the Grilles, Registers and Diffusers, as well as the VAV air terminals, produced by Krueger.

Dan has been in the Air Distribution research and design business since 1973, and has a Masters in Business Management from Central Michigan Univ., and a Bachelor in Biology & Physics from Denison University.

Dan originally joined Krueger in 1981, but has had several other jobs in the industry, including Owens Corning Fiberglas, Carrier, Titus and Environmental Technologies, in engineering, marketing and product research roles.

Dan has written over 40 technical papers and articles on VAV system performance, acoustics, air diffusion, controls and occupant comfort. He was recently Chairman of both ASHRAE Technical and Standards Committees on Thermal Comfort, is a past Chairman of several other related ASHRAE Technical and Standards Committees, as well as ASHRAE Standards, Technical Activities Committee (TAC). & Environmental Health Committees. He received the ASHRAE Distinguished Service Award in 1993 and the Exceptional Service award in 2007. Dan is currently the Chairman of the ARI committee on Applied Acoustics (885) and Chair of ISO 205 US Panel on Thermal Comfort. Dan was installed as an ASHRAE Fellow at the Long Beach meeting in 2007, and is an ASHRAE Distinguished Lecturer. Dan was nominated to

Chair the TRG7 Committee to rewrite the Underfloor Air Distribution Guide, at the Chicago ASHRAE meeting in 2009. Dan is a member of the USGBC TAG on Indoor Environmental Quality.

RESEARCH AND PROMOTION CHAIR:
JASON BENDER

ASHRAE Members-

We are continuing our campaign and need your help to do our Chapters part to help further research in our industry. We have a Chapter goal of \$5500 to be donated for the 2010-2011 Research Promotions Campaign. I'd like to thank those that have contributed in the past, but we will need everyone's help to reach our goal for this year. Please think about what you can do as an individual to help our chapter do its part to support the research projects that help keep our industry moving forward by improving the technology that shapes the systems that we are all involved with.

Please at a minimum take some time request that your company support our chapter with a donation to the ASHRAE RP Campaign! Please send any donations or checks to my office for collection and processing, or bring the checks to a meeting and give it to me there! You will receive receipt that can be used for tax-deduction purposes.

ASHRAE
C/O CHC-Reno
500 Ryland St #120
Reno NV 89502

Jason Bender
RP Chair, ASHRAE N. Nevada

TREASURER CHAIR:
BRYAN TILTON

"Checking account balance is \$2,728.42 and the savings account is 12,501.88. I am happy to report that our Audit Committee was able to complete an internal audit successfully without too many hiccups. My gratitude goes to those who helped."

SHOOT CHAIR:
MATT BRENNAN

*****Mark you Calendars*****

8th annual ASHRAE Sporting Clays Shoot to be held on Saturday April 16, 2011. See the attached Sign-up form.

MEMBERSHIPS PROMOTIONS CHAIR:
CHUN LEE / No update this month.

CHAPTER SECRETARY CHAIR:
BRIAN BASSI

**2010-2011 Northern Nevada ASHRAE BOG Meeting
Meeting Notes by Brian Bassi - Secretary
January 13th, 2011**

Members attending: Brandon Etchemendy, Chris Little, Bryan Tilton, Jason Bender, Michelle Miller, Chun Lee, Matt Brennan and Brian Bassi

Meeting occurred at 12:00 p.m. at Bangkok Cuisine, Reno

- January dinner meeting will be held at Claim Jumper.
- Northern Nevada Chapter audit still needs to be performed.
- Turn-out for the Wine Tasting event at Whispering Vine was very good with about 32 attendees.
- ASHRAE Shoot is planned for April 16th. We are looking for raffle prize donations and station sponsors. Chris Little to see if he can purchase gun for main raffle prize. Matt Brennan will produce the flyer. Note: money

collected for shoot registration should be kept completely separate from money collected from raffle ticket sales (there was some confusion last year). We will have a BOG meeting one week prior to the shoot.

- We are looking into a location for this year's dinner meeting site walk.

Meeting adjourned at 1:30 p.m.

CRC & STUDENT ACTIVITIES CHAIR:
CANDICE GEORGE / No update this month.



Mission Statement

To advance the arts and sciences of heating, ventilating, air conditioning and refrigeration, to serve humanity and promote a sustainable world.

For Release:
Jan. 31, 2011

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

Final Energy Savings Figures Announced for 2010 Energy Standard

ATLANTA – More than 30 percent energy savings can be achieved using the recently published 2010 version of Standard 90.1 vs. the 2004 standard, according to an announcement made today by ASHRAE at its 2011 Winter Conference, taking place this week.

ANSI/ASHRAE/IES Standard 90.1-2010, *Energy Standard for Buildings Except Low-Rise Residential Buildings*, which provides minimum requirements for the energy-efficient design of buildings except low-rise residential buildings, was published in November 2010. ASHRAE was awaiting the final results of analysis work from Pacific Northwest National Laboratories in support of the U.S. Department of Energy (DOE) Building Energy Codes Program on addenda included in the standard. The final figures were made available this week and were announced today at ASHRAE's annual press breakfast.

Without plug loads, site energy savings are 32.6 percent and energy cost savings 30.1 percent. Including plug loads, the site energy savings are estimated at 25.5 percent and energy cost savings 24 percent.

"Three years ago, the 90.1 project committee set an aggressive goal of 30 percent savings for the 2010 version," ASHRAE President Lynn G. Bellenger said. "That the target was met and exceeded is a testament to the talent and dedication of the men and women from ASHRAE and the Illuminating Engineering Society (IES) who developed and evaluated over 119 change proposals to increase the stringency of our flagship energy conservation standard. At the 35th anniversary of Standard 90.1, it continues to lead the way in our industry as the minimum standard for energy efficiency."

On a nationally aggregated level, building type energy savings ranged from 8.8 percent to 38.3 percent and energy cost savings from 7.9 percent to 33.6 percent. These figures include energy use and cost from plug loads.

Extensive analysis work was performed by a team from Pacific Northwest National Laboratories in support of the DOE Building Energy Codes Program. Sixteen different building prototypes were modeled in 17 different climate zones for a total of 272 building types and climate zone combinations.

How was the energy reduction achieved? Here are a few examples:

- The Scope was expanded so that 90.1 covers receptacles and process loads, including data centers. This allows future addenda to the standard to address energy consuming equipment and systems previously outside its scope.
- Building Envelope: Continuous air barrier and cool/high albedo roof requirements were added.
- Lighting: Most interior Lighting Power Densities were lowered, and additional occupant sensing controls and mandatory daylighting requirements were added for specific spaces, along with a new five-zone exterior Lighting Power Density table.
- Mechanical: Most equipment efficiencies are higher, energy recovery is required in more applications, economizers are required in more climates and more energy-conserving controls are required.
- Modeling requirements have been clarified and expanded so that building modelers can more accurately compare energy cost of their building project with an appropriate baseline building as defined by the standard.

"The 90.1 standard is a fluid document," Mick Schwedler, immediate past chair of the 90.1 committee, said. "As technology evolves, the project committee is continually considering new changes and proposing addenda for public review. The rigorous, open, public review process following ASHRAE and American National Standards Institute (ANSI) procedures, results in a document that is both technically sound and reaches consensus."

"I agree wholeheartedly with Mick on the strength attributes of Standard 90.1 based on our ASHRAE/ANSI consensus process," echoed Steve Skalko, current chair of the committee. "As we look ahead to exploring new areas of energy savings from energy consuming equipment and systems, we will seek input from materially affected and interested parties. We welcome their input to help the project committee in this endeavor."

The standard is written in mandatory code language and offers code bodies the opportunity to make a significant improvement in the energy efficiency of new buildings, additions and major renovations.

ASHRAE is an international technical society that fulfills its mission of advancing heating, ventilation, air conditioning and refrigeration to serve humanity and promote a sustainable world through research, standards writing, publishing and continuing education.

For Release:
Jan. 29, 2011

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

ASHRAE Technology Awards Highlight Outstanding Building Projects

LAS VEGAS – Designers of systems for a university building, a synagogue, a hospital and a commercial building are recognized by ASHRAE for incorporating elements of innovative building design.

Recipients of the ASHRAE Technology Awards were recognized at the Society's 2011 Winter Conference being held this week in Las Vegas. The recipients have applied ASHRAE standards for effective energy management and indoor air quality. This year's Society-level competition had 34 entries.

"ASHRAE Technology Awards are awarded for innovative HVAC&R designs that provide superior energy saving, cost effectiveness, enhanced indoor air/environmental quality and excellent performance through application of new design concepts, new technologies or by applying existing technologies with innovative approaches," Wei Sun, chair of the judging panel, said. "Panel judges looked far beyond a good design or a high profile project, they confirmed that all judging criteria were well addressed and looked for the application of new technologies and innovative concepts. Winners challenged themselves to work outside their comfort zones."

Following are summaries of the winning projects.

Jerry Yang and Akiko Yamazaki Environment and Energy Building (Y2E2), Stanford University

Amit Khanna, Arup, San Francisco, Calif., receives first place in the new institutional buildings category for the design of the Jerry Yang and Akiko Yamazaki Environment and Energy Building, Stanford University, Palo Alto, Calif.

When Stanford Trustee Jerry Yang took Senator Barbara Boxer (D-Calif.) on a tour of the new building, known as Y2E2, Boxer told the Yahoo! Inc. co-founder, "This is spectacular. It gives me a lot of hope!"

Y2E2 exemplifies a new kind of thinking aimed at providing watershed solutions in the areas of environment, technology and energy. It is the first element in Stanford's new Science and Engineering Quad 2.

The energy performance emphasizes load reduction, passive operation and efficiency, energy recovery opportunities, including self-generation, and allows for successful carbon-neutral operation through offsets. Y2E2 has post-occupancy verified energy consumption 44 percent below Standard 90.1-2004. In addition, the building spaces are either naturally ventilated or served via 100 percent outside air-handling units, maintaining high indoor air quality at all times.

Other highlights include north and east facing offices with adequate façade opening and solar protection to maintain comfortable conditions with no mechanical cooling or forced ventilation, achieved through the Adaptive Comfort Criteria in Standard 55, *Thermal Environmental Conditions for Human Occupancy*, and computational analysis; use of active chilled beams, making Y2E2 the first of its kind in California and among the largest buildings in the country to use them; and a natural smoke ventilation system. Y2E2 achieved a level of energy performance for a +0.9-4.6 percent premium that will pay itself back in four to six years.

Pierre-Boucher Hospital

Gilles Desmarais, DESSAU, Montreal, Quebec, Canada, receives first place in the existing healthcare facilities for the rehabilitation of Pierre-Boucher Hospital, Longueuil, Quebec, Canada. The building is government owned and managed by CSSS Pierre-Boucher.

Because of growth in ambulatory service needs, over 100,000 square feet, including a new hospital wing, operation block and laboratories were added, as well as over 90,000 square feet of the existing hospital reorganized. By combining low-temperature water loops with a dual-compressor recovery chiller and a direct-contact condensing stack economizer, the design team was able to recover a significant amount of energy that would have normally been evacuated outside. Enthalpy wheels also were added in the fresh air units to reduce air heating, cooling and humidification loads.

The design isn't set apart only by its high performance but also the original way in which it was designed. Quebec's extreme winter temperatures require energy management more complicated than most areas. Through the use of building energy simulation software, designers evaluated different solutions before choosing the most efficient and cost-effective one. This led to a million dollar self-financed innovative project.

The hospital's innovative and efficient design significantly reduced energy use: reducing yearly natural gas consumption by 64 percent for the expansion area and 15 percent in the existing area in spite of the increase of ventilation rate in the rehabilitated part, which also reduces greenhouse gas emissions by 1,152 tons a year.

Jewish Reconstructionist Congregation

Yury Lui and Charles Eggert, HP Mission Critical Services, Chicago, Ill., receive first place in the new public assembly category for the Jewish Reconstructionist Congregation, Evanston, Ill. The building is owned by the Congregation.

The new synagogue replaces its original building, balancing the limitations of a small site with an ambitious program that promotes worship, education and community objectives. Its innovative measures include use of displacement air diffusers that were carefully designed to integrate with architectural elements. Wood slats screen supply and return ventilation making them essentially invisible to the users while still permitting supply air to stratify in the room. The building's showcase three-story staircase was positioned for south exposure, which allows the air to act as a thermal buffer zone to capture solar and exterior heat gain. The staircase is equipped with outside air intake openings at the first floor and an exhaust air hood on the roof for natural ventilation. This design cools the stairs at no cost when weather conditions permit and captures the heat inside during the winter.

The building is heated by an ultra-high 94 percent efficient gas-fired condensing boiler and cooled with a high efficiency air-cooled modular chiller with peak power consumption at 1.212 KW/Ton.

The David Brower Center

Peter Rumsey, P.E., Fellow ASHRAE, Integral Group, Oakland, Calif., receives first place in the new commercial buildings category for The David Brower Center, Berkeley, Calif. The project was developed by Equity Community Builders.

The Center serves as a home for many environmental and social action organizations and combines offices and program facilities. Using the latest in energy-efficient technologies and design as well as 53 percent recycled building materials, the project makes the lowest possible impact on the environment, taking into account the true life-cycle cost of building construction, operation and maintenance.

The building uses some 60 percent less energy than the average U.S. building of similar use, before taking credit for the energy production of the onsite 25 KW PV system. Energy efficiency gains are provided by an innovative combination of HVAC and whole building design strategies and technologies, including an in-slab radiant heating and cooling system; a mechanical nighttime purge system that captures cooler summer night air, flushing the building and charging the high thermal mass; a high efficiency condensing boiler selected to operate at a lower supply water temperature; pumps with variable speed drives; ground floor spaces served by high efficiency water source heat pump systems; evaporative cooling; natural ventilation; and displacement ventilation.

The building's water saving features include waterless urinals (a landmark milestone: the first installation of these for the City of Berkeley); a rainwater catchment system that provides water for flushing toilets and irrigation; and low-flow fixtures.

The building features low energy and low carbon output mechanical systems and low water-use plumbing systems. It could achieve 70 to 80 percent lower carbon emissions per person than the current baseline due to well-designed MEP systems, efficient use of building space and a conscientious concrete specification.

ASHRAE, founded in 1894, is an international organization of 55,000 persons. ASHRAE fulfills its mission of advancing heating, ventilation, air conditioning and refrigeration to serve humanity and promote a sustainable world through research, standards writing, publishing and continuing education.

For Release:
Jan. 29, 2011

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

ASHRAE Recognizes Outstanding HVAC&R Industry Achievements

LAS VEGAS – Thirty-six people are being recognized by ASHRAE for their contributions to the Society and the building industry at the Society's 2011 Winter Conference held here Jan. 29-Feb. 2.

The **F. Paul Anderson Award**, ASHRAE's highest given for technical achievement, is awarded for notable achievement of outstanding services performed in the HVAC&R field. The recipient is **Presidential Member Richard P. Perry**, P. Eng, Fellow ASHRAE, Life Member, senior engineer, emeritus, DEC Design Mechanical Consultants, Ltd., New Westminster, British Columbia, Canada.

The **50-Year Member Award** is given to persons who have been a member of the Society for 50 years and have performed outstanding service to ASHRAE or its predecessor societies. The recipient is Richard Wright, P.E., Fellow ASHRAE, Life Member, who resides in Algood, Tenn.

Fellow ASHRAE is a membership grade recognizes distinction in the arts and sciences of environmental technology and is earned through achievement as a researcher, designer, educator or engineering executive. The Society elevated 13 members to the grade of Fellow ASHRAE:

- Walid Chakroun, Ph.D., is professor, mechanical engineering department, Kuwait University, Safat, Kuwait
- James Cummings is program director, Florida Solar Energy Center, Cocoa, Fla.
- J. Eduardo Donoso is president, Ing. Eduardo Donoso E Hijos C. Ltd., Quayaquil, Guayas, Ecuador
- Chad Dorgan, Ph.D., P.E., is vice president-quality and sustainability, McCarthy Building Companies, Inc., St. Louis, Mo.
- Presidential Member Damon Gowan, Life Member, is retired president and chief executive officer, EMCOR-Gowan, Inc., Houston, Texas
- Gershon Grossman, Sc. D., is professor of mechanical engineering, Technion-Israel Institute of Technology, Haifa, Israel
- Jaap Hogeling is manager of international projects and standard of ISSO: Dutch Building Services Research Institute, Rotterdam, the Netherlands and managing director of KBI: Dutch Quality Assurance Institute for Building Services Rotterdam, the Netherlands
- Russ Keeler, P.E., is principal, Chason Energy, Golden, Colo.
- Ravindra Kulkarni Sr. is owner/proprietor, R. S. Kulkarni, HVACR Consultants, Pune, India
- Cesar Luis Lim, P.M.E., is partner, business development officer, Kilojoule Consultants International Co., Paranaque, Philippines
- Aphichit Lumlertpongpana, Ph.D., is managing director, I.T.C. Co., Ltd., Bangkok, Thailand
- Hugh McMillan III is mechanical plumbing engineering coordinator, Becht Engineering Co., Inc., Cypress, Texas
- Farooq Mehboob, Life Member is principal consultant of S. Mehboob & Company, Karachi, Pakistan

The **ASHRAE Technology Awards** recognize outstanding achievements by members who have successfully applied innovative building designs, which incorporate ASHRAE standards for effective energy management and indoor air quality. Four projects received first-place ASHRAE Technology Awards:

- Amit Khanna, ARUP, San Francisco, Calif. in the new institutional buildings category for the Jerry Yang and Akiko Yamazaki Environment and Energy Building, Stanford University, Palo Alto, Calif. The building owner is Stanford University
- Gilles Desmaris, Dessau, Montreal, Quebec, Canada in the existing healthcare facilities category for the Pierre-Boucher Hospital, Longueuil, Quebec, Canada. The building is government owned and managed by CSSS Pierre-Boucher.
- Yury Lui and Charles Eggert, HP Mission Critical Services, Chicago, Ill. in the new public assembly category for the Jewish Reconstructionist Congregation, Evanston, Ill. The building is owned by the Congregation.
- Peter H. Rumsey, P.E., Fellow ASHRAE, Integral Group, Oakland, Calif. in the new commercial buildings category for the David Brower Center, Berkeley, Calif. The project was developed by Equity Community Builders.

The **ASHRAE Student Design Project Competition** challenged teams of students to create an integrated sustainable building design as well as select and design HVAC&R systems for the Ginsburg Tower, a 15-story patient tower, at Florida Hospital in Orlando, Fla. First place in HVAC System Design is awarded to Michael Angell, Nathaniel Boyd, Edward Gillett, Trong Nguyen and Justin Wiese of University of Central Florida, Orlando, Fla. First place in HVAC System Selection is awarded to ZacBuckmiller, Matt Kolins, Todd Kuno, Jared Palan, Nicole Vogt and Joel Wheeler of Kansas State University, Manhattan, Kan. First place in the Integrated Sustainable Building Design is awarded to Carolyn Lamb, Ryland Phelps and Amy Rose Keyzer of Lawrence Technological University, Southfield, Mich.

The **John F. James International Award** is given to an ASHRAE member who has done the most to enhance the Society's international presence. The recipient is Yuan-Wei Wu, chief engineer, Chinese Association of Refrigeration, Beijing, China.

The **E.K. Campbell Award** honors outstanding achievements by engineering educators is presented by the ASHRAE Life Members Club. The recipient is William Ryan, Ph.D., P.E., director of the Masters of Energy Engineering Program in the Mechanical and Industrial Engineering Department at the University of Illinois at Chicago (UIC).

ASHRAE, founded in 1894, is an international organization of 50,000 persons. Its sole objective is to advance through research, standards writing, publishing and continuing education the arts and sciences of heating, ventilation, air conditioning and refrigeration to serve the evolving needs of the public.

###

Editors Note: Individual releases and photographs for each award recipient are available upon request.