

MAY MEETING

Denver Meeting Information

DATE: Wednesday, May 2, 2012
TIME: 5:30 PM Registration
 6:30 PM Dinner
 7:00 PM Program Begins
LOCATION: Dave & Busters
 2000 South Colorado Blvd
 Denver, CO 80222
RSVP: Jessie Jones
jjones@rmhgroup.com
COST: \$25 Rocky Mtn Chapter Members
 *Reservation made by 12:00 PM on Monday
\$35 Non-members and late reservations

Save the Date!

Annual Golf Tournament

The 2012 Golf Tournament to support ASHRAE Research and the Rocky Mountain research promotion 2011-2012 goals will take place at the Hiwan Golf Club.

- Monday June 18, 2012,
- Registration & lunch - 11:30 AM – 1PM
- Shotgun start – 1:15 PM
- Awards, appetizers & cash bar – 6:00 PM

Table of Contents

PRESIDENT’S MESSAGE	2
ROCKY MOUNTAIN ROSTER	3
ASHRAE RESEARCH	4
SUSTAINABLE ENGINEERING COMMITTEE	6
ASHRAE SOCIETY NEWS AND PRESS RELEASES	11

“Chilled Water Plant Optimization: What is “Ultra-Efficient” and how do you achieve it?”

This presentation will provide an overview of the processes, procedures, and technologies of how high-efficiency chiller plant components, coupled with new control algorithms and sequencing can reduce central chilled water plant energy consumption on average from 30-50% over conventional design and control methods. Plant stability and reliability, consideration of ancillary systems, as well as understanding and selecting the best opportunities for implementation of these strategies will be discussed. A mission-critical/data center facility case-study, including project installation specifics, challenges, and measured results will also be presented.

Cory holds a Bachelor of Science degree from the United States Naval Academy in Annapolis, Maryland, and holds an MBA from Colorado State University. Currently, Cory serves as Vice President, Business Development at Setpoint Systems Corporation.

2013 Annual Conference Sustainability Project

Rocky Mountain ASHRAE is pleased to announce that Denver has been selected to host the 2013 ASHRAE Annual Summer Meeting. As is custom, the city selected to host the annual conference has a goal to support sustainability. This year Rocky Mountain ASHRAE has committed to overhauling the Denver Rescue Mission’s aged and deteriorating systems and replacing them systems to improve efficiency and increase occupant comfort. The project website is complete! It has project information, photos, updates and donor acknowledgements. www.ashraedenver2013.org/

PRESIDENT'S MESSAGE

Dear Rocky Mountain ASHRAE:

The chapter will be planting a tree via the Mile Hi Million initiative in the name of each of the speakers this year. The turnouts for the meetings continue to provide strong numbers for the chapter.

I would like to thank James Tauby from Mason Industries for speaking at our lunch meeting for the month of April. It was well attended and very informative speech on seismic restraints of mechanical systems

At our April meeting, Tony Anderson was voted to be our next Junior Board Member. Tony will be responsible for composing the monthly newsletter for the 2012-2013 year. Over the past year, Tony led the charge in our website redevelopment in which he did a fantastic job. His time and efforts are much appreciated. He will be a wonderful addition to our Board of Governors.

It's our intent to continue providing relevant topics for educational purposes to our members and guests. We are already starting to plan our meetings and topics for next year. Mike Harrington will be in charge of our monthly programs for next year. Please contact him if you have or know of any interesting HVAC topics.

On 20 April 2012, we hosted our 20th Annual Technical Conference. As with year's past, this was another successful event for the Rocky Mountain Chapter. I would like to thank all who attended, the vendor booth participants, sponsors, and all of the speakers. A very special thank you must go to Michelle Swanson and her committee for hosting such a fantastic event. Thanks again for your efforts, contributions, attendance and support of our Chapter Technical Conference.

On 18 June 2012, we will host our annual golf tournament at Hiwan Golf Club. Please check our website for more details on times, costs, and registration. The proceeds from this event will go to ASHRAE research.

Be on the lookout for YEA (Young Engineers in ASHRAE) Social Hours. Whether you're recognized as a YEA individual we encourage you to participate in this event. I would like to thank Tim Hughes for putting these events together for the chapter.

If you have any questions or concerns, please do not hesitate to contact me. Thanks a lot and have a great day!

Best Regards,

Adam Bishop

Chapter President
Rocky Mountain Chapter of ASHRAE

RM ASHRAE is a USGBC/GBCI education provider!

The Rocky Mountain Chapter of ASHRAE is now a USGBC/GBCI education provider. If you would like to have a presentation submitted to the USGBC for LEED AP credentialing credits, please contact Jessie Jones jjones@rmhgroup.com or Michelle Swanson mswanson@rmhgroup.com for more information.

ROCKY MOUNTAIN ROSTER

Rocky Mountain ASHRAE 2011 - 2012 Board of Governors

Title/Committee Chair	Name	Email	Phone
President	Adam Bishop	adamb@cfmcompany.com	303.607.4438
President-elect/Tech Conf.	Michelle Swanson	mwanon@rmhgroup.com	303.239.0909
Vice President/CTTC Chair	Jon Rundquist	jonathan.e.rundquist@jci.com	303.904.7923
Secretary	Jessie Jones	jjones@rmhgroup.com	303.239.0909
Treasurer	Mike Harrington	mharrington@setpointsystems.com	303.733.2300
Newsletter Editor	Megan Van Wieren	MeganLVanWieren@eaton.com	303.974.1230
Past President	Ken Urbanek	kurbanek@mkkeng.com	303.796.6000
Director	Aaron Zimmerman	azimmerman@mkkeng.com	303.796.6088
Director	John Stumpf	jjstumpf@long.com	720.472.0422
Northern Section Chair	Mike Fulton	mfulton@westernmechanicalsolutions.com	720.934.8273
Membership	Chris Garofoli	CGarofoli@victaulic.com	303.396.9006
Historian	Dale Eismueller	dale@werc.com	303.406.4080
Website	Tony Anderson	tanderson@airpurificationcompany.com	
Student Activities	Craig Wanklyn	craig.wanklyn@me-engineers.com	303.421.6655
Sustainable Engineering	Celeste Cizik	CelesteLCizik@eaton.com	303.974.1212
Government Activities	Celeste Cizik	CelesteLCizik@eaton.com	303.974.1212

ASHRAE RESEARCH



Thank you 2011-2012 ASHRAE Research Donors

THANK YOU to the Honor Roll Donors: Mark Labac, Ronald Thomas, Michael Haughey, Cator Ruma & Associates, Mary S Reilly, SBSA Inc., Kevin Ainsworth, Adam Bishop, Ken Urbanek, John Stumpf, Jon Rundquist, Kyle Manske, Megan Van Wieren, Celeste, Cizik, Jessie Jones, Mike Harrington, Aaron Zimmerman, Michelle Swanson, Michael Brandemuehl, Western Mechanical Solutions, Cay N Strother, Brian Lynch, Leonard Micek, Donald Davenport, Carrier West Incorporated, Gershon Gendler, Edge Mechanical Systems, Carrier West, Don Davenport, Dave Rodenberg, Scott Martin, Leonard Rozek, Eric Young, E3MS, Bob Barrett, Bob Schlachter, James Waechter, Jr., HVAC Services, Griffith Engineering Services. David Baucom, Bob Stroschein, Ambient Energy, John Helin, Blender Products, THE RMH Group, Air Purification Company, Eugene Mitchell.

So far we have raised **\$ 14,074** for ASHRAE Research!!! Let's Keep Going!!!

Don't Wait, Please Donate for the 2011-2012 ASHRAE Year

Mail Check To:
ASHRAE RESEARCH
c/o The RMH Group
12600 W Colfax Ave, A-400
Lakewood, CO 80215

Your contribution puts us closer to achieving our goal. Please send what you can today!
* Individual contributions of \$100 or more and Corporate contributions of \$150 or more receive this year's Commemorative Coin And Honor Roll Contribution status.

Name: _____

Company: _____

Address: _____

Telephone: _____

INDIVIDUAL	\$25.00	\$50.00	\$75.00	\$100.00
CORPORATE	\$75.00	\$100.00	\$175.00	\$250.00

Other: _____

Other: _____


































Or Contact Michelle Swanson at: 303-239-2724



ROCKY MOUNTAIN CHAPTER

ASHRAE RESEARCH

ASHRAE RESEARCH DONOR LEVELS AND RECOGNITION

Receives 1 day Meeting Registration*							-----		
Receives 2 tickets to <i>Members Night Out</i> and <i>Welcome Party</i> *									
Presented Commemorative Sculpture									
Individually recognized at President's Luncheon*									
Invited to President's Luncheon*									
Invited to Board of Directors Luncheon*									
Listed on special Display at President's Luncheon*									
Group photo published in spring issue of ASHRAE Insights									
Receives personalized shadowbox plaque							-----	-----	
Listed on RP Display in Registration							-----		
Receives Gold ASHRAE Commemorative Coin & Plaque							-----		
Receives Silver ASHRAE Commemorative Coin & Plaque					-----	-----	-----	-----	
Receives Bronze ASHRAE Commemorative Coin & Plaque				-----	-----	-----	-----	-----	
Receives Antique ASHRAE Commemorative Coin & Plaque			-----	-----	-----	-----	-----	-----	
Receives blue desktop coin holder		-----	-----	-----	-----	-----	-----	-----	
Listed in annual <i>Investor Honor Roll</i>									
	Honor Roll Donor** \$150-\$249	Major Donor – Antique \$250-\$499	Major Donor – Bronze \$500-\$999	Major Donor – Silver \$1000-\$2499	ASHRAE Associate \$2500-\$4999	ASHRAE Partner \$5000-\$9999	Golden Circle Donor \$10,000 - \$19,999	Platinum Circle Donor \$20,000+	

SUSTAINABLE ENGINEERING COMMITTEE

May Meeting

DATE: Wednesday, May 16, 2012

TIME: 12PM – 1PM

LOCATION: TBD

RSVP: Megan Van Wieren
MeganLVanWieren@eaton.com

The Sustainable Engineering Committee is committed to advocate sustainable design, construction and operation to our members, the industry and our community through advocacy group meetings and educational seminars. We strive to promote sustainable practices at all ASHRAE events and sponsored activities.

This committee meets once a month for planning and coordination. If you have questions about the committee, please contact Celeste Cizik or Megan Van Wieren at sustainable@rockymtnashrae.com.

PROJECT UPDATE - 2013 SUSTAINABILITY PROJECT

Denver Rescue Mission | Lawrence Street

Project Description: In preparation for the 2013 Annual ASHRAE Society Meeting, the Rocky Mountain chapter has selected the Denver Rescue Mission Lawrence Street facility as the Annual Meeting Sustainability Project in an effort to reduce the environmental impact of the meeting. Each year, ASHRAE selects a Sustainability Project for members to volunteer their time and services. This project traditionally is done for a non-profit organization that would significantly benefit from energy efficiency upgrades and improved systems.

Project Update: The Sustainability Project is underway and the committee is making exciting progress each month. The following activities highlight the work that has been completed to date. If you or your organization would like to assist in the 2013 Annual Meeting Sustainability Project, please contact Brian Lynch at 720.472.1037 or BL@westernmechanicalsolutions.com.

- **Project Website** – The project website is complete! It has project information, photos, updates and donor acknowledgements. <http://www.ashraedenver2013.org/>
- **Fundraising** – Fundraising is currently underway to secure donated services, equipment and funds.
- **Preliminary Energy Conservation & Capital Improvement Measures** – Preliminary measures have been identified that will achieve energy savings and improve occupant comfort at the Denver Rescue Mission. These measures are currently being evaluated to determine the required materials and estimate the installation cost. A summary of the ECMs is below, more detailed information will be available on the website soon!
 - ECM 1: Zone Temperature Set Back /Set Up
 - ECM 2: Direct Digital Control (DDC) System
 - ECM 3: Install Boiler Outside Air Reset Control
 - ECM 4: Reduce Steam Leakage
 - ECM 5: Lighting Retrofit
 - ECM 6: Install Lighting Occupancy Sensors
 - ECM 7: Install Low Flow Shower Heads
 - ECM 8: Replace Domestic Hot Water Heaters
 - ECM 9: Solar Domestic Hot Water Heating
 - ECM 10: Replace Dorm Area MAU with Heat Recovery Ventilator
 - ECM 11: Install Boiler Air Combustion Damper
 - ECM 12: Replace Condensing Units with ENERGY STAR Units
 - ECM 13: Replace Single Pane Windows

GREENING OUR MEETINGS

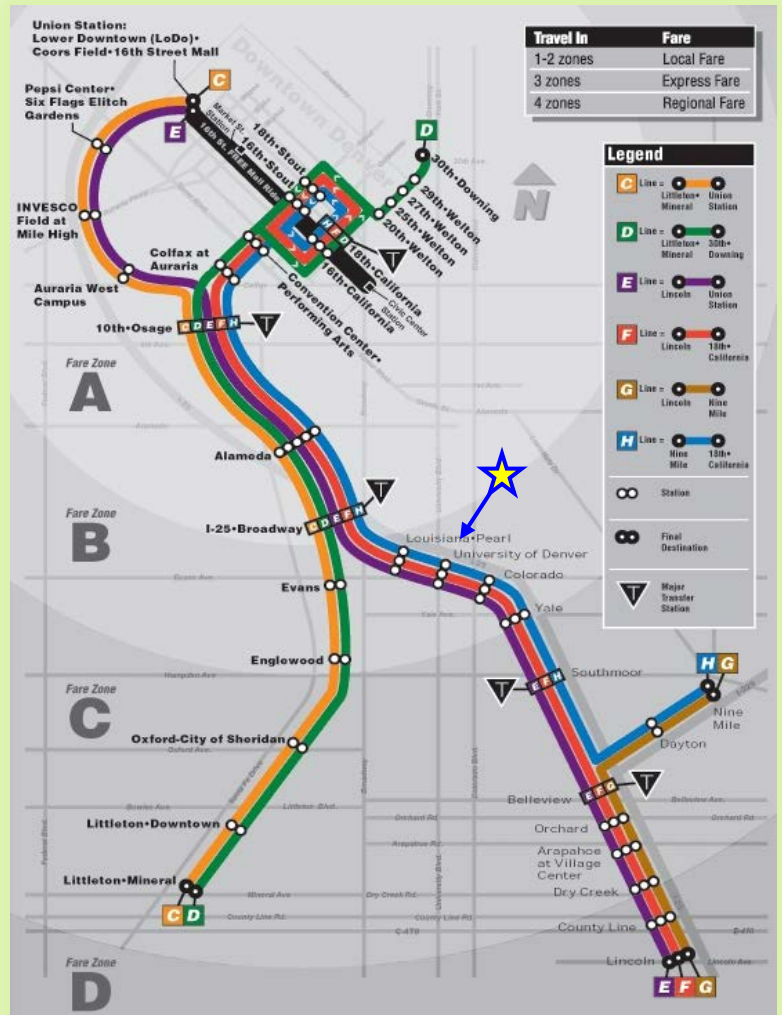
The Rocky Mountain Chapter of ASHRAE will present a free raffle ticket to anyone taking public transportation to the monthly ASHRAE meeting.

One raffle ticket will be given to each participant for each meeting. Visit www.rtd-denver.com for system maps and times or contact ridegreen@rockymtnashrae.com for further assistance.

Acceptable modes of alternative transportation:

- ✓ Walking
- ✓ Bicycling
- ✓ Bus
- ✓ Light Rail
- ✓ Alternative Fuel Vehicle
- ✓ High Efficiency Vehicle (35+ mpg)
- ✓ Carpooling (2 or more persons)

The ASHRAE meeting (Denver) at Dave & Buster's is located at the **Colorado Light Rail Station** for lines E, F and H. Any bus lines that pass through the **Evans and Colorado intersection** will also get you to Dave & Buster's.



MEMBERSHIP PROMOTION

Welcome to the “The Membership Promotion Page.” We would like to take time to welcome the following new ASHRAE members for March and April:

- Mr Justin Barnes
- Miss Kelly Croom
- Mr Erik Dietz
- Mr Devon DuVal
- Mr Gregory Evans
- Mr Xavier Guerrero
- Mr Christopher Hantke
- Mr Jake Hogan
- Dr Kevin Jensen
- Miss Allison Martz
- Mr Carl Nottberg
- Mr Charles Rogge
- Mr Brian Strandjord

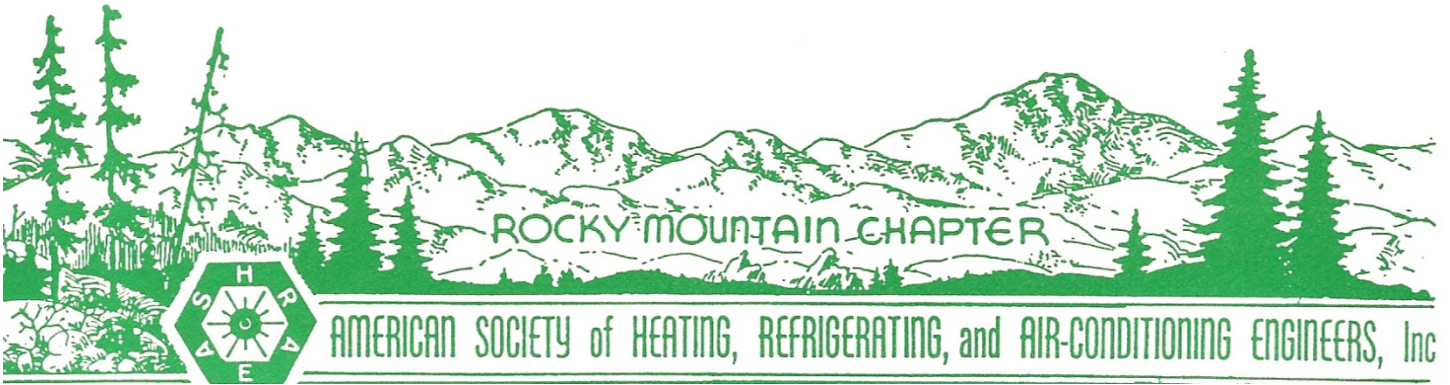
We would also like to welcome the following new ASHRAE student members for March and April:

- Mr Kevin Cook

If you have questions or need membership assistance please send an email to cgarofoli@victaulic.com or call Chris Garofoli at 303-396-9006.

Also, please look around your company and through your contacts to let people know about the benefits of joining ASHRAE. We continue to bring in new young members of the industry to keep them involved with technology and standard advancements.

ROCKY MOUNTAIN MEMBERSHIP APPLICATION



Name: _____ (Last) _____ (First) _____ (MI)

Status: Renewal ____ New Member ____ Address Change ____

Please circle preferred mailing address: HOME BUSINESS

Home Address and Phone

Business Name, Address and Phone

p: _____

p: _____

Preferred email address: _____

Society Membership Number / Grade: _____

Name Tag (\$10.00) Paid? Y N

Name to appear on name tag as: _____

I would like to be contacted about serving on one of the following committees or functions (Please circle):

- | | | |
|-----------------------|-----------------------------|--|
| A. Newsletter | F. Chapter Historian | K. Spouse's Night / Social Committee |
| B. Membership | G. Technical Seminars | L. Colorado Engineering Council (Committee Help) |
| C. Meeting Attendance | H. Research Fund Promotions | M. General |
| D. Education | I. Monthly Meeting Programs | N. Energy Committee |
| E. Golf | J. Publicity | O. Sustainable Engineering Committee |

Please mail this invoice and your check for \$50.00 (2010 / 2011 year) + \$10.00 (Name Tag if requested) payable to **Rocky Mountain Chapter ASHRAE** to the address listed below. ASHRAE will invoice you for both society and local dues every year following the first year.

Chris Garofoli
Rocky Mountain Chapter ASHRAE Membership Promotion Chair
c/o Victaulic
3416 Alcott Street Denver, CO 80211
cgarofoli@victaulic.com

ROCKY MOUNTAIN ASHRAE HISTORY

“The History of Magnetic Bearings and Their Current Application to HVAC Equipment”

December of last year ASHRAE had a meeting that covered the history of magnetic bearing technology going back to the Manhattan project to the present day. Utilization of magnetic bearing chillers allows the system to be oil free so discussion covered how this maintains the efficiency of the chiller system. ASHRAE 90.1 minimum efficiencies were discussed along with how IPLV is calculated. Finally Joe Buffalin discussed ARI 550/590 on chiller testing standards.

Joe Buffalin is the Western Regional Sales Manager for McQuay International. He has over 30 years of experience in the HVAC industry and specializes in the application of HVAC equipment to total project designs with an emphasis on optimized building performance.

ASHRAE SOCIETY NEWS AND PRESS RELEASES

For Release:
April 24, 2012

ASHRAE, NIST to Host Conference on Refrigerants

ATLANTA – A joint conference focused on refrigerants and hosted by ASHRAE and the National Institute of Standards and Technology (NIST) has been announced for October 2012.

The ASHRAE/NIST 2012 Refrigerants Conference: “Moving toward Sustainability” takes place Oct. 29 -30, 2012, at NIST in Gaithersburg, Md.

“This conference addresses international concerns about the impact of refrigerants on climate change, which inevitably lead to increased focus on refrigerants with a low global warming potential (GWP) applied in high-efficiency systems,” Piotr Domanski, conference co- chair, said. “This includes new generations of unsaturated fluorochlorochemicals and expanded use of ‘natural’ refrigerants.”

This is the fourth jointly sponsored refrigerants conference sponsored by ASHRAE and NIST. Past conferences provided information and updates on the phase-out of chlorofluorocarbon (CFC) and hydrochlorofluorocarbon (HCFC) refrigerants, which were implicated in destruction of the stratospheric ozone layer.

The conference provides the latest information on alternative refrigerants, likely time schedules, transition requirements, environmental effects of refrigerants, new refrigerant performance considerations and what will be required to phase-out the use of high-GWP refrigerants with other refrigerant alternatives and technologies.

All those involved in the different aspects of refrigerants and refrigeration technology – policymakers, manufacturers, researchers and government officials – will receive an opportunity to learn about the latest developments and directions going forward.

The conference features invited papers from leading global experts who will cover a broad range of topics, including:

- Status of current environmental, scientific and regulatory activities
- Potential applications of “natural” refrigerants
- Technical developments on new low GWP fluorochlorochemical refrigerants
- Equipment applications using low GWP alternatives
- The opportunities for reducing refrigerant emissions
- Panel discussions by industry experts at the end of each day.

The focus of the conference is on technical issues and the longer term opportunities for success from a global perspective. Experts of every facet of the issues to be covered in the conference are going to be available during the two days of the sessions for an information exchange with an evening dinner on Monday for more informal discussions.

Registration is slated to open in June 2012. The cost is \$390 (\$340, ASHRAE members). For more information, visit www.ashrae.org/refrigerants2012.

ASHRAE SOCIETY NEWS – CONTINUED

For Release:
April 9, 2012

Changes Related to Data Centers, Lighting, Space Heating Energy Source Proposed for ASHRAE/IES Energy Standard

ATLANTA – A proposed change to the ASHRAE/IES energy standard regarding data centers recognizes the role that system efficiencies – vs. only equipment – can play in reducing energy consumption.

“This change regarding data centers represents a building block as we work to build on the foundation of energy conservation in the standard,” Drake Erbe, 90.1 vice chair, said. “We recognize that equipment used in buildings is reaching maximum capabilities in energy efficiency. We now must examine the role that system efficiencies play in saving energy. Inclusion of data centers in the standard was a step in that direction.”

With publication of the 2010 standard, ANSI/ASHRAE/IES Standard 90.1-2010, Energy Standard for Buildings Except Low-Rise Residential Buildings, data centers were included within its scope for the first time. Most data centers were required to have economizers, but some in the data center industry disagreed with the requirement, maintaining that economizers are subject to static discharge due to low humidity, gaseous contaminants and reliability.

Erbe said the 90.1 committee worked with the data center industry and ASHRAE’s technical committee on mission control facilities, technology spaces and electronic equipment to develop an alternative path known as power usage effectiveness (PUE) to allow use of developing technologies for which there are no energy modeling tools available. The path is addressed in proposed addendum ap, which is currently open for public comment.

“This is a significant issue to design professionals in that without a simulation program available to model these systems they have to receive approval from the authority having jurisdiction for an exceptional calculation method, which, in most cases, is beyond the jurisdiction’s knowledge level,” Erbe said. “The PUE values were developed using water cooled chillers with water size economizers and air cooled chillers with air side economizers, using prescriptive requirements currently in the standard. The PUE values for all climate zones are able to be achieved by both of these conventional system types.”

In total, 15 proposed addenda to Standard 90.1 are open for public review. For more information, visit www.ashrae.org/publicreviews.

Also open for public comment is addendum ao, which offers an alternative compliance path for lighting requirements aimed at the large number of smaller, simpler buildings that make up a majority of new construction and retrofit activity, according to Eric Richman, chair of the standard’s lighting subcommittee. It provides a less complicated set of requirements that should be easier to apply to these types of facilities, and also includes more stringent Lighting Power Density (LPD) limits that may restrict the application of more lavish space lighting designs not commonly found in these facilities. This compliance path will replace the current whole building LPD table and only applies to a subset of building types that encompass many of the smaller, simpler buildings. The use of this method is optional and the full space-by-space method used by most designers for larger more complex facilities still remains for application to any building type, Richman said.

In addition, addendum al is open for public review. Users of Appendix G of the standard have noted that the baseline energy budget is different depending on whether electricity or natural gas is chosen for either space heating and water heating, according to Don Brundage, a member of the Energy Cost Budget subcommittee. In some cases, this can provide greater energy savings estimates from Appendix G when using one fuel versus another, and provides a strong incentive to specify the fuel that will provide the greatest energy savings using Appendix G.

ASHRAE SOCIETY NEWS – CONTINUED

“Proposed addendum al would make the baseline building energy budget (the minimum code baseline for determining energy savings) the same regardless of the choice of fuel in the proposed building, eliminating this bias,” Brundage said. “This is done by setting rules to determine the fuel to be used in the baseline building for space and water heating. These rules are based on climate zones for space heating and type of building usage for water heating. This would make energy savings estimates using Appendix G more consistent and fair than under the current version of the standard.”

In addition to addendum al, ao and ap, eight other addenda are open for public review from March 23 until May 7. They are addenda af, ag, ai, am, an, aq, ar and at.

Four addenda are open for public review from March 23 until April 22. They are addenda ad, ah, aj and as.

ODDS AND ENDS

ASHRAE Jobs Website Tool:

We thought you and your fellow members would like to know about this valuable tool for ASHRAE Members and HVAC&R hiring authorities. We have prepared a page detailing the story of [ASHRAEjobs.com and its success here](#).

The Career Center offers several benefits for hiring authorities and job seekers:

- ASHRAE Jobs is user friendly. Its products and services equal the offerings from traditional big box boards such as Monster.com, yet its information and postings are specific to the ASHRAE Community.
- Due to its focus on HVAC&R engineering, Job seekers have a more effective search experience. Employers also have immediate access to a pre-filtered pool of talent for skills and experience.
- A unique feature is ASHRAE members are highlighted in search results. The online job application and resume forms require applicants to identify themselves by membership status. Employers can sort applications and resumes by membership status.

I would invite your Chapter to participate in this program by creating a link on your website to the ASHRAE Jobs Career Center. You will find attached a copy of the logo to use on your homepage. We would also appreciate your help to spread the news about ASHRAE Jobs' success through an announcement through your eNewsletter, blogs, etc.

If you have questions, I or John von Harz (Services Manager at jvonharz@ashraejobs.com) will be pleased to answer them.

USGBC Rocky Mountain Green Conference:

The USGBC Rocky Mountain Green Conference is being held April 12-13. See attached flyers for more information and sponsorship opportunities.