Advantages of Primary/Secondary Plumbing Design for Integrating Solar and Hydronic Heating in Residential and Small Commercial Systems

Tuesday, February 16, 2016
11:30am – 1:00 pm

University Arena "The PIT" aka Wise Pies
1111 University Blvd SE

Use the North Entrance and follow the signs to the AEE/ASHRAE meeting. Sudexco will provide food services for the event.

Solar heat connects most easily with hydronic heating systems because solar thermal panels provide hot fluid at temperatures that are compatible with common heat loads. However, in order to make the best use of the solar heat when it is available and minimize parasitic heat loss and pump (electric) power, a heating system design must treat all heat sources, loads and storage components as an integrated system.

In a conventional system, a plumbing design based on primary and secondary loops allows heat to be transferred from the fuel-fired heat source to any load connected to the primary loop. This concept can be successfully extended to two primary loops connected through a heat exchanger for a system utilizing both solar and backup heat sources. The advantages are numerous, but can be summarized as the ability to move heat from any place in the system to any other place at any time. Even components that alternately function as both heat loads and heat sources can be easily controlled in this configuration.

This ‘dual primary loop’ concept has been used as a template in recent years to standardize the design and installation of complex solar/hydronic heating systems with good results. Well over 100 systems in New Mexico and dozens in other states have been installed in recent years using this configuration. Design details taken from these systems will be presented, utilizing solar thermal panels, heat pumps, boilers, wood stoves and waste heat sources and delivering heat to radiant floors, DHW tanks, pools, baseboard radiators and fan coils. Performance data from remote monitoring and continuous automatic logging is also available to view. Existing installations range from small residences of 1000 – 3000 SF up to small commercial sized buildings up to 25,000 SF.

About the Speaker
Bristol L. Stickney, BSME
SolarLogic, LLC, Santa Fe, NM

Mr. Bristol Stickney is the Chief Technical Officer of SolarLogic LLC in Santa Fe, NM. With over 35 years of experience in solar heating, Bristol Stickney is a well-known authority on solar hydronic heating systems.

Bristol worked with the New Mexico Solar Energy Association for over a decade as Staff Engineer, Director of Research, Associate Director, Treasurer and Vice Chairman of the Board. During his tenure at NMSEA, he developed unique control system concepts that simplify the design of solar heating systems while simultaneously optimized their effectiveness. These innovations subsequently led to well over 100 of his designs implemented and installed by Cedar Mountain Solar in New Mexico. It is Mr. Stickney’s knowledge, expertise and experience that have provided the theoretical and practical bases for SolarLogic’s SLASH-D and SLIC products. These streamline the standardized design and control of complex solar heating in buildings.

Prior to his work with Cedar Mountain Solar, Bristol was Chief Engineer of Coyne Solar Manufacturing Company for 5 years, where he designed and oversaw assembly of batch solar water heaters, many of which are still in use. Bristol also worked as a Research Associate with Amory Lovins at the E-source office of the Rocky Mountain Institute.

Bristol Stickney has a B.S. in Mechanical Engineering from the University of Maine at Orono. Bristol holds half a dozen patents in solar/hydronic heating and a patent on a DC hydronic heating control, called the “SETH System,” that reduces the electrical demand of a hydronic heating system by up to 80%.

Bristol currently writes a monthly column on “The 6 Principles of Good Solar Hydronic Heating System Design” which is published in national magazines such as Plumbing and Hydronic Contractor and Plumbing Engineer. He also has had articles appearing in Solar Pro, Home Power, Radiant Living, and the ASHRAE Journal.

Register online at www.nmaee.org.

Members: $20
Guests: $25
Upcoming Events

Feb 16, 2016  Advantages of Primary/Secondary Plumbing Design for Integrating Solar and Hydronic Heating in Residential and Small Commercial Systems
Joint Meeting with AEE
11:30am – 1pm at The Pit

Mar 15, 2016  A Look Into the Past and a Guess Into the Future
*Distinguished Lecturer*
Air Conditioning: A Look Into the Past & a Guess into the Future
11:30am – 1pm at Pappadeaux Seafood

Apr 19, 2016  General Meeting
Computer Room Air Conditioning
11:30am – 1pm at Pappadeaux Seafood

May 17, 2016  Awards Meeting
5:30pm – 7pm at Pappadeaux Seafood

Sept 9, 2016  Annual Golf Tournament
at UNM Championship Golf Course

Register for events online at newmexicoashrae.org

Student Activities

This month we have met with Larry Schuster at UNM, who is the professor for ME365 HVAC course at UNM. He has a full class this semester of engineering students that are interested in HVAC as a career option. We introduced ASHRAE to the class and distributed text books to the students. We had 25 students join the student chapter this semester. They expressed interest in the chapter meetings so if you see some new faces please welcome these students to the group and help them feel at home with ASHRAE.

February 4th at 8:30 am is the judging for the science fair at San Antonito Elementary. Please volunteer if you are interested in helping some elementary students develop their Science, Technology, Engineering, and Mathematics skills. The students put together some great experiments and it is a great way to be involved with our local community.

Please contact Ryan Shaffer at 505-382-8310 if you are interested in attending.

From the History Books

Feb 1975

President: M. U. Grover
President-Elect: R. W. Hobson
Secretary: F. E. Peckinpauch
Treasurer: B. H. Ohnhaus

The program featured Gary Atkins, Regional Sales Manager for the Southwest, for Cambridge Filter Corporation. His talk focused upon new products of interest in the industry.

Mr. Robert D. Pagliasotti, Director and Regional Chairman for Region IX, was a guest at the meeting.

Seeking Volunteers & Leaders

We are seeking individuals within the HVACR industry to join the leadership team of the New Mexico chapter. You can become more involved in a variety of positions which only requires a 1 year commitment. It’s a great chance to try it out.

Further your career, build your network of professionals, strengthen your leadership skills and implement new ideas within our professional community by volunteering as a Board of Governor.

Contact any of the Board members to find out more.

YEA Update

The Young Engineers in ASHRAE will be organizing an event for all the membership once the weather warms up and we are all ready to spend some time outside again. Please watch for further details as the event becomes finalized!
Research Promotion Update

The Research Promotion Campaign annually raises funds to support ASHRAE’s research program. It is conducted by the Society’s membership through local chapter volunteers and receives over 7,000 contributions each year from the membership and companies associated with the HVAC&R industry.

This year ASHRAE-NM has set a goal of $8,300.00. We have currently raised $1,528 towards our goal! 100% of funds go directly into the research program to develop and advance our industry.

To learn more about how you can make a difference, go to: https://newmexicoashrae.org/research-promotions

2015 – 2016 Board of Governors

<table>
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<tr>
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<td>Student Activities Chair</td>
<td>Interested in this position? Contact Joe Higham!</td>
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<td>YEA Chair</td>
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Check out our website to find out more about the Board, committees, and our initiatives. Contact Joe Higham if you are interested in becoming more involved in our chapter. There are plenty of opportunities!
When will the election be held?
Tuesday, February 2, 2016.

Who can vote?
All registered voters living within the Albuquerque Public Schools District Boundaries are eligible to vote in the February 2, 2016 Bond Election. This includes all of Bernalillo County and The Village of Corrales in Sandoval County.

What is being voted on?
A School Mill Levy/School Bond valued at $575 million earmarked for Educational Facility upgrades/equipment, brick & mortar construction/design. The remainder will be used to upgrade instructional technology, support Charter School facility/equipment acquisitions and provide enhanced life, health and safety for all teachers and students.

What will a “YES” vote mean to APS students?
A vote of yes will provide money for construction of new buildings and to make much needed repairs or improvement at existing schools. Every cluster in the district will benefit from the passage of the Mill Levy and Bond election.

What would a “NO” vote mean to students in APS?
If the February 2, 2016 Mill Levy/School Bond election fails, APS will not have the money needed to build schools, renew and remodel our older existing schools including Charter Schools, or to provide the technology needed for students to compete in a global marketplace.

Will passage of the February 2, 2016 Mill Levy/School Bond Election raise my taxes?
No, there will be no tax increase from the passage of this election.

### DISTRICT WIDE Capital at a Glance

- Construction $316M
- Technology $100M
- Charter Schools $58M
- School Security $5.6M
- Teacher and Student Furniture $5M
- ADA Compliance $3M
Projects to be Designed with Election Passage

Monte Vista Elementary School - 2016 Election: $1,450,000
Preliminary Scope: Design for Classroom block: 4 kindergarten classrooms, 4 general classrooms, 1 art/music classroom and storage, 15,543 SF

Zia Elementary School - 2016 Election: $1,758,569
Preliminary Scope: Design for Phase 1 Master planned School Replacement of 21,600 SF and demolition of 1958 building; project will consist of 18 new classrooms

Mary Anne Binford Elementary School - 2016 Election: $2,300,000
Preliminary Scope: Design for new classroom block (12 classrooms, 7 SPED classrooms for 27,709 SF) and remove portables

Truman Middle School - 2016 Election: $2,500,000
Preliminary scope: Design for new classroom block (17 classrooms, bookroom, storage and SPED ancillary for 28,121 SF) and remove portables

Sierra Vista Elementary School - 2016 Election: $2,575,000
Preliminary Scope: Design for Phase I, site work and portable removal, in preparation for a 28,800 SF classroom block addition/portable replacement consisting of 24 classrooms for 2nd through 5th grades.

Taylor Middle School - 2016 Election: $1,225,000
Preliminary Scope: Design for Phase 1 new classroom addition consisting of 5 classrooms, 3 music classrooms for a total of 15,286 SF

Early College Academy (ECA)/Career Enrichment Center (CEC) - 2016 Election: $2,900,000
Preliminary Scope: Design & Construction for the renovation. This project entails renovation of the existing old main building (38,000 sf) including HVAC, electrical and ADA upgrades

McKinley Middle School - 2016 Election: $11,339,651
Preliminary Scope: Design & Construction Phase 2 new classroom block consisting of a 2-story block with 10 classrooms, 4 science labs, 2 computer labs and a media center

Arroyo Del Oso Elementary School - 2016 Election: $1,725,000
Preliminary scope: Design for total school replacement

Hubert Humphrey Elementary School - 2016 Election: $3,150,000
Preliminary Scope: Design of phase 1 new classroom block. Repairs to HVAC and roof at existing building.

Public Academy for the Performing Arts (PAPA) Charter School - 2016 Election: $9,000,000
Preliminary Scope: Design, construction, & relocate charter school to current Acoma ES campus/facility. Renovate existing Acoma facility to accommodate PAPA. Construct new additions to provide specialized performing arts spaces

Sandia Mountain Natural History Student Learning Center - 2016 Election: $4,000,000
Preliminary Scope: Design & Construct new facilities will include classrooms, a visitor center, student restrooms, and staff workshop

Valle Vista Elementary School - 2016 Election: $2,025,000
Preliminary scope: Design for Phase 1 new kindergarten classroom and general classroom building for 26,443 SF

Eubank Elementary School - 2016 Election: $9,000,000
Preliminary Scope: Design & Construct Phase 1 and 1a new building (kindergarten and classrooms, music/art, library, administration, ancillary support, parent room and gym consisting of approximately 32,214 SF)

Montessori on the Rio Grande Charter School - 2016 Election: $4,500,000
Preliminary Scope: Design & Construct Phase II consisting of a new classroom and administration building (14,236 SF) addition This school provides a Montessori curriculum enhanced with fitness, arts, and music programs for Kindergarten through 6th grades

Digital Arts and Technology Academy (DATA) Charter School - 2016 Election: $3,300,000
Preliminary Scope: Design and Construction of interior spaces and roof replacement

Lavaland Elementary School - 2016 Election: $2,875,000
Preliminary scope: Design for Phase 1 new gym, administration and cafeteria for 28,764 SF. Renovations to roof at existing building

APS District Health Clinic - 2016 Election: $4,900,000
Preliminary Scope: Design & Construction of a New employee health clinic to serve 15,000 District employees
Projects to be Constructed 2016 with Election Passage

**Albuquerque High School** - 2016 Election: $12,003,216

**Family School West Side** - 2016 Election: $8,400,000
Preliminary Scope: New school to accommodate K-8 family school students

**Desert Willow Family School** - 2016 Election: $3,262,667
Preliminary Scope: Final phase consisting of a new 7-classroom block addition, lecture hall, ancillary support spaces and new 5-12 year old playground

**Navajo Elementary School** - 2016 Election: $5,246,858
Preliminary scope: New kindergarten building - 5 kindergarten classrooms, OT/PT, instructional coach office, work room, music/art and flexible classroom, restore playfield

**Barcelona Elementary School** - 2016 Election: $3,733,736
Preliminary Scope: 7 classroom block, Cafeteria expansion, remodel of kitchen and administration

**Madison Middle School** - 2016 Election: $2,900,000
Preliminary Scope: Renovations and addition to gym

**Montgomery Complex Professional Development/Meeting Facility** - 2016 Election: $12,100,000
Preliminary Scope: New district training facility for teachers

**Highland High School** - 2016 Election: $15,550,000
Preliminary Scope: Rebuild and renovate existing physical education/gym facilities and addition for Title IX

**La Cueva High School** - 2016 Election: $11,000,000
Preliminary Scope: Intensive Support Program (ISP) addition and gym/PE addition for weight room

**Manzano High School** - 2016 Election: $21,900,000
Preliminary Scope: New athletics complex including Title IX compliance upgrades

**NEW NW K-8** - 2016 Election: $50,000,000
Preliminary Scope: New K-8 to alleviate growth and overcrowding in the west/far west quadrant

**Early College Academy (ECA)/Career Enrichment Center (CEC)** - 2016 Election: $2,900,000
Preliminary Scope: Design & Construction for the renovation. This project entails renovation of the existing old main building (38,000 sf) including HVAC, electrical and ADA upgrades

**Jackson Middle School** - 2016 Election: $10,485,000
Preliminary Scope: Phases 1 & 2 new cafeteris, kitchen, classroom block (7 classroom, drama space, administration and parent room)

**Oñate Elementary School** - 2016 Election: $3,300,000
Preliminary Scope: New classroom block and kitchen remodel in order to accommodate approximately 100+ students from Acoma ES

**APS District Health Clinic** - 2016 Election: $4,900,000
Preliminary Scope: Design & Construction of a New employee health clinic to serve 15,000 District employees

**Public Academy for the Performing Arts (PAPA) Charter School** - 2016 Election: $9,000,000
Preliminary Scope: Design, construction, & relocate charter school to current Acoma ES campus/facility. Renovate existing Acoma facility to accommodate PAPA. Construct new additions to provide specialized performing arts spaces

**Sandia Mountain Natural History Student Learning Center** - 2016 Election: $4,000,000
Preliminary Scope: Design & Construct new facilities will include classrooms, a visitor center, student restrooms, and staff workshop

**Eubank Elementary School** - 2016 Election: $9,000,000
Preliminary Scope: Design & Construct Phase 1 and 1a new building (kindergarten and classrooms, music/art, library, administration, ancillary support, parent room and gym consisting of approximately 32,214 SF)

**Montessori on the Rio Grande Charter School** - 2016 Election: $4,500,000
Preliminary Scope: Design & Construct Phase II consisting of a new classroom and administration building (14,236 SF) addition This school provides a Montessori curriculum enhanced with fitness, arts, and music programs for Kindergarten through 6th grades

**Digital Arts and Technology Academy (DATA) Charter School** - 2016 Election: $3,300,000
Preliminary Scope: Design and Construction of interior spaces and roof replacement

**McKinley Middle School** - 2016 Election: $11,339,651
Preliminary Scope: Design & Construction Phase 2 new classroom block consisting of a 2-story block with 10 classrooms, 4 science labs, 2 computer labs and a media center

**Rio Grande High School** - 2016 Election: $15,600,000
Project Scope: Phase 2 of the new physical education complex including Title IX upgrades. The project is to rebuild and renovate the physical education/gym facilities. This project will fulfill federal Title IX gender equity requirements
The following question will appear on the ballot in the February School District Election:

**Mill Levy Question:** $375 million over 6 years

“Shall the Albuquerque Public School District continue to impose a property tax of $3.838 for residential property and $4.344 for non-residential property per each $1,000.00 of net taxable value of property allocated to the Albuquerque Public School District for the property tax years 2016, 2017, 2018, 2019, 2020 and 2021 for the purpose of (1) erecting, remodeling, making additions to, providing equipment for or furnishing public school buildings; (2) payments made pursuant to a financing agreement for the leasing of a building or other real property with an option to purchase for a price that is reduced according to payments made; (3) purchasing or improving public school grounds; (4) administering the projects undertaken pursuant to sections 1 and 3 above, including expenditures for facility maintenance software, project management software, project oversight and district personnel specifically related to administration of projects funded by the Public School Buildings Act provided that expenditures pursuant to this section shall not exceed five percent of the total project cost?”

**General Obligation Bond Question:** $200 million

“Shall the Albuquerque Public School District issue $200,000,000 of general obligation bonds to erect, remodel, make additions to and furnish school buildings within the district, to purchase or improve school grounds, to purchase computer software and hardware for student use in public schools, and to provide matching funds for capital outlay projects funded pursuant to the Public School Capital Outlay Act?”

**General Overview:**

This bond election directly impacts funding for the Albuquerque Public Schools’ Capital Strategy Plan beginning in 2016 and continuing through 2022. The current plan, started in 2010, was segmented into two phases. The first segment focused on reducing overcrowding and accommodating growth.

The continuation of the Plan will now focus on renewing and restoring aging buildings. Within the district, there are 143 district schools and 53 charter schools, most built prior to 1960. These schools are in need of refurbishing and remodeling so that all APS students can enjoy healthy, safe places to learn.

Additionally within the Plan are provisions for new educational and instructional technology as well as enhanced life, health and safety environments for students and teachers. Finally, the Plan will support capital funding to all Albuquerque Charter Schools (both local and state) and will also be used to improve transportation facilities for all students.

The Plan also has strong implications on the local economy, generating close to $200 Million in construction activity in the first year and a half alone. Continued activity will include steady economic influx into the design, fabrication and construction sectors through 2022. This continued growth is extremely important to local economic health, local job prospects as well as current and future educational needs.

Since 2010, the district has put tax-payer dollars to work in building 13 new schools with over 5 million square feet of learning environments. In addition, funding has been utilized to renovate over 6 million square feet of classroom space at 45 individual sites.

Goals have been met and promises continue to be kept.
Guidance on New Compliance Path for 90.1-2016 Now Available

Jan 19, 2016

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

ATLANTA – A newly published document from ASHRAE and IES gives users of their energy efficiency standard immediate access to an optional third path for compliance, providing more flexibility for the industry.

Standard 90.1-2013 Appendix G: Performance Rating Method is an excerpt from ANSI/ASHRAE/IES Standard 90.1 (I-P), Energy Standard for Buildings Except Low-Rise Residential Buildings. The document gives users immediate access to selected addenda slated to be published in the 2016 version of the standard. The majority of the document is comprised of addendum bm, which allows Appendix G to be used as a compliance path within the standard.

“This document is being provided at the request of users,” Drake Erbe, chair of the Standard 90.1 committee, said. “This is the first time ASHRAE and IES have made available an interim clean publication of a portion of Standard 90.1, and we are doing so now because users have expressed a critical need for this guidance. Several entities have expressed interest in developing programs based on the revised appendix. This release also gives advanced notice to software developers that may be interested in automating the process of creating the Appendix G baseline.”

Erbe notes that the guidance in addendum bm had two significant impacts on Appendix G.

“Previously Appendix G was used only to rate ‘beyond code’ performance of buildings but could not be used to demonstrate compliance with the base 90.1 standard,” he said. “Now the standard provides that compliance path and gives credit for integrated design resulting in energy savings such as efficient use of building mass, optimized building orientation, efficient HVAC&R system selection and right sizing of HVAC&R equipment.”

Using this new version of Appendix G to show compliance with the 2016 version of the standard, the proposed building design needs to have a Performance Cost Index (PCI) less than that shown in Table 4.2.1.1 based on building type and climate zone.

The second change is that the baseline design is now fixed at a certain level of performance, the stringency of which is expected not to change with subsequent versions of the standard. By this, a building of any era can be rated using the same method with the same baseline of compliance. The intent is that any building energy code or beyond-code program can use this methodology and simply set the appropriate target for their needs analogous to those in the table. Therefore, a beyond-code program may wish to set a target less than is shown in the table (a target of 0 is a net zero building), while compliance with a previous version of the standard may wish to set a target above what is shown. Because unregulated loads are not included in the compliance target in Table 4.2.1.1, beyond-code programs that encourage improvement in unregulated loads may wish to modify the target to include those loads.
Other addenda included in the excerpt are:
• Addendum k directs the modeler to use the default assemblies in Appendix A for baseline opaque envelope assemblies.
• Addendum r establishes the hierarchy of the decision-making process for selecting baseline HVAC systems.
• Addendum z provides detail on the simulation of base-line building heat pumps, including how auxiliary heat is used in conjunction with heat-pump heating.
• Addendum aa provides direction regarding when it is appropriate to model a heating-only system in Appendix G.
• Addendum ad clarifies when baseline HVAC systems should be modeled with preheat coils.
• Addendum dx makes changes to the baseline lighting power allowances in Appendix G.

Erbe noted that while it is likely that the version of Appendix G published in the 2016 edition of the standard will include additional changes to Appendix G, it is not likely that they will be as extensive as those included in addendum bm. The primary focus is to make the new methodology with a fixed baseline available so users become familiar with it.


To order, visit www.ashrae.org/bookstore or contact ASHRAE Customer Contact Center at 1-800-527-4723 (United States and Canada) or 404-636-8400 (worldwide) or fax 678-539-2129.

###

New ASHRAE Application Automates Compliance Calculations for Standard 90.1-2010

Jan 23, 2016

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

ATLANTA – A new web application from ASHRAE automates the calculations needed to show a building project’s compliance with Standard 90.1-2010.


The application allows users to input project parameters and then calculate the proposed design’s projected performance and compliance, with the results exportable in a workable spreadsheet for project use,” Drake Erbe, chair of the Standard 90.1 committee, said.

The application is accessible from desktop, tablet or other device. It allows users to store project information in one place for easy reference and comparison.

The app is free of charge to users. To learn more, visit 901ECB.ashrae.org.

###
ASHRAE Recognizes Members for Outstanding Industry and Society Achievements

Jan 24, 2016

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

ATLANTA – Fifty-four people were recognized for their contributions to ASHRAE and the industry at the Society’s 2016 Winter Conference, Jan. 23-27, Orlando, Fla.

The F. Paul Anderson Award, ASHRAE’s highest for technical achievement, is given for notable achievement of outstanding services performed in the HVAC&R field. The recipient is Presidential Member Thomas E. Watson, Fellow ASHRAE, Life Member, director of the Daikin Learning Institution, Daikin Applied, Staunton, Virginia.

The ASHRAE Hall of Fame honors deceased members of the Society who have made milestone contributions to the growth of ASHRAE-related technology or the development of ASHRAE as a society. Inductees are Calvin D. MacCracken, who with more than 200 inventions and 80 patents is best known for his pioneering work in off peak cooling energy costs savings and energy conserving options in ice rinks. His inventions include flexible duct heating/cooling, a roller-type hot dog cooker, comfort controls for the Apollo astronauts' space suits, plastic mat ice rink, and roll-out solar collectors; and John Edwin Starr, a pioneer in development of small sized refrigeration systems and refrigeration by pipeline from central stations, as well as founder and the first president of The American Society of Refrigerating Engineers (ASRE), an ASHRAE predecessor society, in 1904-05.

Fellow ASHRAE is a membership grade that recognizes members who have attained distinction and made substantial contributions in HVAC&R such as education, research, engineering design and consultation, publications and mentoring. The Society elevated 17 members to the grade of Fellow:

• Peter R. Armstrong, Ph.D., P.E., Masdar Institute, Abu Dhabi, United Arab Emirates.
• Clive Broadbent, C.P.Eng., Life Member, director, Clive Broadbent and Associates Pty. Ltd., Campbell Australian Capital, Australia.
• Wan Ki Chow, Ph.D., C.Eng., R.P.E., chair professor of Architectural Science and Fire Engineering, Department of Building Services Engineering, Hong Kong Polytechnic University, Hong Kong, China.
• Suhas D. Deshpande, principal consultant, S.D. Deshpande Consulting Engineers, Pune, Maharashtra, India.
• Kristin Heinemeier, Ph.D., P.E., principal engineer, Energy Efficiency Center, University of California, Davis.
• Marisa Jimenez de Segovia, president, Air-Care de Mexico, Monterrey, Nuevo Leon, Mexico.
• Kishor Khankari, Ph.D., president, AnSight LLC., Ann Arbor, Michigan.
• Kwang Woo Kim, Ph.D., P.E., a professor, Department of Architecture and Architectural Engineering, Seoul National University, Seoul, South Korea.
• Dennis R. Landsberg, Ph.D., P.E., Life Member, BEAP, president, L&S Energy Services Inc., Clifton Park, New York, and Henderson, Nevada.
• Patrick C. Marks, P.E., an engineering manager, Johnson Controls, York, Pennsylvania.
• John A. Murphy, an applications engineer, Trane, a business of Ingersoll Rand, La Crosse, Wisconsin.
• Riyaz A. Papar, P.E., director, Global Energy Services, Hudson Technologies Co.
• Andy Pearson, Ph.D., C.Eng., group engineering director, Star Refrigeration LTD., Glasgow, United Kingdom.
• Mukund Sudhakar Ranade, a self-employed professional consultant, Pune, Maharashtra, India.
• Mick Schwedler, P.E., an applications engineering manager, Trane, a brand of Ingersoll Rand, La Crosse, Wisconsin.
• Om Taneja, Ph.D., P.E., an independent consultant, Associated Inspections and Consulting Engineers, Kendall Park, New Jersey.

The ASHRAE Technology Awards recognize outstanding achievements by ASHRAE members who have successfully
applied innovative building design. Their designs incorporate ASHRAE standards for effective energy management and indoor air quality and serve to communicate innovative systems design. Winning projects are selected from entries earning regional awards. First place recipients are:

- Benjamin A. Skelton, P.E., BEMP, president, Cyclone Energy Group, Chicago, Ill., in the new commercial buildings category for the Walgreens Net Zero Store, Evanston, Ill. The building is owned by Walgreen Co.
- Dylan T. Connelly, associate, Integral Group, Oakland, Calif., in the existing commercial buildings category for DPR Construction’s San Francisco Net Positive Energy Office. The building is owned by DPR Construction.
- Nicolas Lemire, Ing., HFDP, president/principal, Pageau Morel and Associates, Montreal, Quebec, in the new educational facilities category for the Anne-Marie Edward Science Building at John Abbott College, Sainte-Anne-De-Bellevue, Quebec. The building is owned by the college.
- Ken Warren, P.E., capital project manager, Port of Seattle (Wash.), in the new industrial facilities or processes category for the Sea-Tac Airport Pre-Conditioned Air project. The building is owned by the Port of Seattle.
- Jonathan M. Heller, P.E., principal engineer, Ecotope Inc., Seattle, Wash., receives first place in the residential category for the Stack House Apartments. The building is owned by Stack House Acquisition LLC.

The ASHRAE Student Design Competition focused on a three-story classroom and office building in Doha, Qatar.

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.

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.

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 Inc., 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.

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.

The E.K. Campbell Award of Merit honors an individual for outstanding service and achievement in teaching and is presented by the Life Members Club. The recipient is Michael M. Ohadi, Ph.D., Fellow ASHRAE, a professor of mechanical engineering and co-founder of the Center for Environmental Energy Engineering, University of Maryland, College Park, Maryland.

The ASHRAE Award for Distinguished Public Service recognizes members who have performed outstanding public
service in their community and, in doing so, have helped to improve the public image of the engineer. The recipient is Erich Binder, president, Erich Binder Consulting Ltd., Calgary, Alberta.

The John F. James International Award recognizes a member who has done the most to enhance the Society’s international presence. The recipient is Florentino Roson Rodriguez, Ing., president, Supercontrols S.A., Buenos Aires, Argentina.

The ASHRAE Pioneers of Industry Award recognizes deceased individuals who have made milestone contributions to the growth of HVAC&R. Recipients are Daniel Livingston Holden (1837-1924), who was a charter member of The American Society of Refrigerating Engineers and a pioneer of the commercial refrigeration industry; and Benjamin Franklin Sturtevant (1833–1890), the founder of the air-side HVAC industry, having invented the equipment and starting the first company specializing in engineering and manufacturing of these systems.

Honorary Members, elected by the Board of Directors are defined as notable persons of preeminent professional distinction. Recipients are P.A. Hancock, Ph.D., Provost Distinguished Research Professor, Pegasos Professor and University Trustee chair, the University of Central Florida, Orlando; and Terry M. Manon, who retired from the Trane Co., in 2009 as director of Trane commercial systems air handling systems. He resides in Danville, Kentucky.

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 50,000 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.

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