



The Comfort Chronicle

American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc.
East Texas Chapter #091, Region VIII

Volume XXVII, Issue V, April 2008

www.ashrae-etex.org

ASHRAE RESEARCH PROMOTION

ASHRAE Research Promotion is essential to the HVAC-R industry in that monies contributed are re-distributed back to universities and agencies to maximize research efforts and make every dollar count.

Since I became the Research Chair for our chapter 3 years ago, I have received wonderful industry support for events sponsored by the East Texas Chapter. Even though this effort is totally volunteerism, our Chapter contribution has gained recognition at Region conferences and in Society publications.

However, this year was a complete about face when the East Texas Chapter hosted a Casino Night at the Holiday Inn Select in Tyler, Texas. Our event this year was a fun night for both husband and wife or significant other. We also opened the event to the community in an effort to have a good turnout and meet our Chapter RP goals for 2008.



The event has come and gone with poor results. Fortunately, RP did raise enough funds to pay the bills. The total cost for the event was \$5,600. Since there is another element of our strategic effort in 2008 to meet our Society RP goal of \$8,500, we are continuing to receive contributions through a \$5 raffle for a Trane XL6i system including Extended Warranty and installation.

The Chapter needs your help to make this part of our fund raising event successful by selling as many raffle tickets as possible. Contact any of the RP committee members for your tickets.

There are several folks I would like to thank for their hard work making this year's event as successful as it was. My committee included Sheri McLain, Kristin Schaffer, Kaye Berry, Chris Backer, Willie Adams, and Stan Ritchie. Robert Helt and Clinton Odom were alternate support. Please extend a your thanks to these people!

April Meeting

Date: April 16, 2008

Location: Trane – SnowWhite Conf Room
6200 Troup Highway.
Tyler, TX 75707

Cost: \$15
(students eat free)

Schedule: 11:15 AM Social
11:30 Lunch
12:00 Program
3:00 Adjourn

Program: Integrated Building Design

Presenter ASHRAE Satellite Broadcast

Please RSVP to:

Sheri McLain, phone 903-581-3391,
fax 903-579-7862
email sheri.mclain@trane.com

Board Meeting

10:15–11:15 AM – Trane – Room TBD April 16, 2008

The RP committee began its work in October 2007 planning the event and sending out preliminary contact letters to HVAC-R vendors, chapter membership, and Tyler businesses.

Early in 2008 with little to no response from the HVAC-R industry, the RP committee began knocking on doors and pounding the street to find resources for the fund raising event.

It has saddened me to reveal to you, the East Texas Chapter ASHRAE membership, that short of Trane's

contribution of the raffle system, East Texas Refrigeration's contribution to install the system, and Learning Resource's cash contribution, all of the proceeds and participation in the event came from outside our industry.

There were only 6 chapter members at the event. A total of 50 people, including committee members, participated in the event. I am sure there are many reasons for the lack of participation and support. I can understand economics, but when an ASHRAE RP event is supported more by outsiders than its own membership, I question the reasons.

Aside from the gloom and doom, everyone at the event had a wonderful time! One of Trane's employees, Veronica Gilbert, won the Texas Hold'em tournament and road off in the sunset with a 37" HD Flat panel TV. In addition to the TV, she also won the Karaoke contest, which provided her with an Apple video I-Pod. She can now watch a movie while her husband watches the game on TV. Congratulations Veronica!



Jerriann Massey, Learning Resources Leader, along with her husband, Doug, won the dance contest and came



away with an Apple audio I-Pod. Congratulations Jerriann. With the low turnout, most everyone at the event came away with wonderful prizes from Residence Inn, Fresh Fruit Bouquet, Holly Tree Country Club, several area golf courses, and WalMart to name a few of the top prize contributors.

Thanks to Robert Thorton for being an event judge and auctioneer!



One table sponsor, Walker & Associates, contributed the largest cash donation with Trane Learning Resources coming in a close second. Please join me in thanking those sponsors that supported the event.

Rhamy Morrison
ET ASHRAE RP Chair

ASHRAE, founded in 1894, is an international organization of 55,000 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.

**ASHRAE BOG Meeting – held at TJC
On March 20, 2008 7:00 AM to 8:25 AM**

Meeting Minutes

Members in Attendance:

Stan Wilkins, Clinton Odom, Rhamy Morrison, Kristin Schaefer, Bill Stiles, Gene Branum, Ernie Herterich

Members Absent:

Don Schuster, John J. Bailey, Dick Cawley, Robert Helt,

President – Ernie Herterich

1. Welcomed all BOG members present.
2. Ernie made a motion that the last meeting minutes be accepted. Rhamy and Kristin approved and seconded.
3. Presentation of the 'Distinguished Service Award' to Robert Helt
4. A Memorandum from Vickie Grant on full directory of Building Owners and Management Association (BOMA) globally. Possibilities for future Tech.

5. Discuss the HQ e-mail (dated 2/27/08) on five IAQ questions the can shape standards in this extremely important area. BOG requested that this memo be forwarded Bert to include in next newsletter.
6. CRC Nominations for discussion at Caucus executive session. Possible Bio's updated and letters of recommendation needed for Rhamy and /or Kristin for **RP RVC Nominations for 2009 to 2012.** (Jon Symko e-mail) Kristin and Rhamy need the job description.
7. RP's Casino night – March 29th. This is very important event for our chapter. See below for more details.
8. IBD Satellite Broadcast/Webcast April 16, 2008).
9. CRC in Shreveport – April 24th – 26th. Ernie gave the DVD to Kristin at the meeting.

Elect / CTTC Chair / Delegate (currently an open position)

1. We will continue to split up remainder of Technical Meetings to get full coverage of 2007/2008 year.
2. Status of Tech meeting on 09/20/07 – UT HVAC building tour -- COMPLETE
3. Status of Tech meeting on 10/25/07 - Brookshire's Cold storage --COMPLETE
4. Status of Tech meeting on 11/15/07 - UT Engineering direction - COMPLETE
5. Status of Tech meeting in December – NONE
6. Status of Tech meeting on 01/17/08? – UL – Seminar at Trane -- COMPLETE
7. Status of Tech meeting on 02/21/08? – E-week dinner at LeTourneau - COMPLETE
8. Status of Tech meeting on 03/20/08? – Estes McClure – COMPLETE
9. Status of Tech meeting on 04/16/08? -- ASHRAE Satellite Broadcast on 'Integrated Building Design' (Move Brookshire's tour to October 2008) ...Kristin to invite local AIA and Estes McClure ... The room and equipment at Trane has been reserved by Rhamy.
10. CRC in Shreveport is April 24 – 26th Attendees being organized and it looks like we will have four or more attending from our chapter.
11. Status of Tech meeting on 05/15/08? -- Refrigerants and the 2010 directive (Don). This meeting will be held in the upstairs conference room. Carrier will pay for the cost of the meal, a big thank you to them.

Secretary – John J. Bailey

1. No updates.... Not present
2. Ernie has been taking the meeting minutes and distributing them to the group.

Treasurer – Bill Stiles

3. E-Postcard Form 990-N ... Our chapter must file this each year beginning this year. Bill has promised to file our E-Postcard before the BOG meeting on May 15th.
 - i.

Research & Promotion – Rhamy Morrison

1. Casino Night on March 29th is the planned date:
 - o There seems to be a total lack of support from within our local ASHRAE chapter membership itself.
 - o To date only 50 persons have purchased tickets and it takes at least 150 to break even.
 - o Four of the committee members are doing all the work. It is taking a huge amount of time to organize the event. Ernie volunteered to call many of our members to remind them of the event.
 - o Leslie has published the event on our website.
 - o There is \$4000 in expenses not covered yet.
 - o Our current RP goal is \$8,000, yet we have identified only \$3,200 to date.
 - o Tickets are \$30.00 each but this includes \$1,000 in gambling chips, two drinks, and food.
 - o The event is fully open to the public.
 - o The HVAC system (worth \$8,000) will not be the grand prize at the Texas Hold-em as originally planned. It will be raffled at the April Tech meeting at Trane.
 - o A local celebrity will attend the event.
 - o Rhamy still needs assistance from anyone getting prizes for the evening.

Logistics for all events (Robert Helt)

1. No updates.... Not present
2. The meal at the March 20th meeting at Estes McClure is organized and being provided by Brookshire's catering.

CTTC & Refrigeration – Dick Cawley

1. No updates.... Not present

Membership Promotion – Clinton Odom

1. Clinton will approach Rhamy to find out how to a motion for the CRC on professors getting student rates for ASHRAE membership.

Student Activities – Stan Wilkins

1. Student design competition; 3 x \$1,500 prizes; deadline May 9, 2008. Despite this item being on the agenda all year, we have done nothing about it and therefore we have to postpone it for another year.

Historian – Don Schuster

1. No updates.... Not present

Newsletter Editor (Bert Mc Jimsey)

1. No updates.... Not present

- A. October newsletter ... not published
- B. November newsletter ... published with article by Ernie Herterich
- C. December newsletter ... not published
- D. January newsletter ... published with article by Rhamy
- E. February newsletter ... published with article by Don Schuster
- F. March newsletter ... published with article by Kristin to promote CRC
- G. April newsletter ... article by Rhamy on Research Promotion report out.
- H. May newsletter ... article from Ernie Herterich

Webmaster – Leslie Zinger

1. No updates.... Not present

Next BOG Meeting

April 16, 2008 @ Trane just prior to the Technical meeting 10:15AM to 11:15AM

Next Technical Meeting

April 16, 2008 @ Trane ASHRAE Satellite Broadcast on 'Integrated Building Design'

New Standards Issued for Residential Furnaces and Boilers

WASHINGTON, DC.—The U.S. Department of Energy (DOE) has increased energy-efficiency standards for residential furnaces and boilers. DOE estimates that the amended standards, which become effective in 2015, will save the equivalent of the total amount of energy consumed by 2.5 million American households in one year, over the following 24 years (2015–2038). Meanwhile, a coalition of consumer, energy, and environmental organizations has criticized DOE, calling the standards "extraordinarily weak." It says the standards have changed little from the original levels set by Congress 20 years ago and that most natural gas furnaces currently sold already meet the new minimum efficiency level. The group includes the Appliance Standards Awareness Project (ASAP), the Alliance to Save Energy, the American Council for an Energy-Efficient Economy (ACEEE) and the Natural Resources Defense Council (NRDC).

ASHRAE Launches High Performing Buildings Magazine

High Performing Buildings is a new quarterly magazine published by ASHRAE and distributed to building owners, facility managers, architects, contractors and engineers. The magazine helps decision makers in the building community learn about the benefits of innovative technologies and energy-efficient design and operation. Case studies of exemplary buildings, developed through the support of leading practitioners in the sustainability movement, present measured performance and lessons learned to promote better buildings.

Most Retail Sustainability Claims Not True, Says Report

READING, Penn.—The majority of environmental marketing claims in North America are inaccurate, inappropriate, or unsubstantiated, according to a report by TerraChoice Environmental Marketing. TerraChoice sent research teams into six category-leading "big box" retail stores and recorded environmental claims. The teams examined 1,018 consumer products bearing 1,753 environmental claims. Of the products examined, "all but one made claims that are either demonstrably false or that risk misleading intended audiences," according to the report.

ACEEE Guide Provides Residential Energy Saving Tips

WASHINGTON, D.C.—The latest edition of the *Consumer Guide to Home Energy Savings* is intended to be a one-stop resource for consumers who want to improve their homes' energy performance. The guide begins with an overview of the interrelationships between energy use, economics, and the environment. A new chapter provides an in-depth look at what users need to know about residential ventilation and air distribution systems. Another is devoted to home electronics. It is published by the American Council for an Energy-Efficient Economy (ACEEE) and New Society Publishers.

Dubai Plans to Go 'Green'

DUBAI, United Arab Emirates—All buildings in Dubai will have to be constructed as per environment-friendly "green building" standards, following a directive issued by the vice president and prime minister of the UAE and ruler of Dubai. The edict goes into effect in January 2008. It is believed that Dubai is the first city in the Middle East to adopt such a plan.

Building Energy-Efficient Buildings Easiest Way To Reduce GHGs, Says Report

VANCOUVER, British Columbia—Building more energy-efficient buildings might be the cheapest way to reduce greenhouse gas emissions and slow climate change, according to a recent report. The research was conducted by the Montreal-based Commission for Environmental Cooperation (CEC). It found that building green buildings and upgrading the insulation and windows in the existing ones could reduce carbon dioxide emissions by 1.7 billion tons annually. "This is the cheapest, quickest, most significant way to make a dent in greenhouse gas emissions," said Jonathan Westeinde, chair of the research group.

Wind Turbines to Help Power Massive Mall

SYRACUSE, New York—Sixteen 5 kW wind turbines will provide power for Destiny USA, a proposed 4.5 million ft² (400 000 m²) retail and entertainment complex in Syracuse, N.Y. The 8 ft (2.4 m) turbines will be mounted on top of 16 existing light poles in the parking lot, and, with wind speeds of 10–15 mph (4.5–6.7 m/s), are expected to produce enough renewable wind energy to offset the need for traditional power sources by more than 30%.

AIA Guide Promotes Integrated Teams for Better Building Projects

WASHINGTON, D.C.—*Integrated Project Delivery: A Guide*, a primer for working in an integrated team model, is available. The guide's proposed team model includes the owner, architect and contractor, and extends beyond the major stakeholders to also include subcontractors, engineers and major systems suppliers, among others. The guide was developed by The American Institute of Architects (AIA) in conjunction with the AIA California Council. It is available for download at no cost.

Architects Heeding Demands for Sustainable Buildings

CHICAGO—Ninety percent of architects expect to incorporate some sustainable elements in their building projects by 2012, a marked increase from five years ago, when less than half of architects were incorporating sustainable design practices into their projects. These are among the major findings of the 2007 Autodesk/AIA Green Index, an annual survey that measures how American Institute of Architects members in the United States are practicing sustainable design, as well as their opinions about the sustainable building movement.



**American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc.
East Texas Chapter #091, Region VIII**

2007 – 2008 CHAPTER OFFICERS

Ernest Herterich	President	903-241-3320	herterichfamily2@earthlink.net
Open	President Elect		
John Bailey	Secretary	903-581-3229	john.bailey@trane.com
Bill Stiles	Treasurer	903-597-3442	

BOARD OF GOVERNORS

Don Schuster		903-510-7440	don.schuster@carrier.utc.com
Dick Cawley		903-566-3957	dickcawley@suddenlink.net
Robert Helt		903-581-3651	robert.helt@trane.com
Kristin Schaefer		903-581-3289	kristin.schaefer@trane.com

COMMITTEE CHAIRS

Don Schuster	Historian	903-510-7440	mohammad.farooq@carrier.utc.com
Rhamy Morrison	Research Promotion	903-581-9101	rhamy.morrison@trane.com
Bert McJimsey	Newsletter Editor	903-581-3332	bert.mcjimsey@trane.com
	Technology Transfer		
Dick Cawley	Refrigeration	903-566-3957	dickcawley@suddenlink.net
Stan Wilkins	Student Activities	903-510-7500	stan.wilkins@carrier.utc.com
Dick Cawley	Honors and Awards	903-566-3957	dickcawley@suddenlink.net
Clinton Odom	Membership Promotion	903-581-3528	clinton.odom@trane.com
Leslie Zinger	Webmaster	903-581-3189	leslie.zinger@trane.com

East Texas Chapter of ASHRAE
P.O. Box 9464
Tyler, TX 75711-9464

Future ASHRAE Meetings

Region VIII CRC
April 24-27, 2007
Shreveport, LA

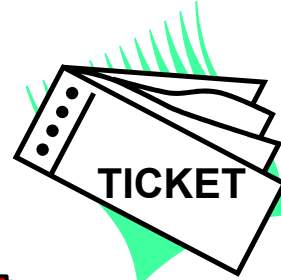
2007 ASHRAE Summer Meeting
June 21-28
Salt Lake City, Utah

Future East Texas Chapter Meetings

Lunch Meetings

April 16
May 15

Raffle



\$5 per ticket

What Can You Win?

- Complete ***XL16i air conditioning system*** donated by



Including

- Free **standard*** ***home installation*** by East Texas Refrigeration



Drawing to be held April 16, 2008.

Need not be present to win

**For tickets see Stan Ritchie, HR, Ethel Fort,
Rhamy Morrison, or Sheri McLain**

* Any custom installation work required will be at winner's expense

Hello everybody!

It is time to firm up your CRC plans. Register for the meeting and your hotel at <https://xp20.ashrae.org/secure/CRCShreveport/CRCRegistration.htm>.

The Shreveport chapter is proud to host the Region VIII CRC this year. You'll notice that our theme is "Louisiana Lagniappe". Lagniappe means "a little something extra" and we are confident that we will deliver on that promise!

This year we are turning CRC upside down! We are modifying the schedule and our events in an effort to make this the best CRC you have attended in a long time. These are some of the changes we are making this year:

- We are having a **world class technical seminar on Friday afternoon**, in lieu of two small tech sessions at different times during the CRC. In the words of Bill Harrison, "There hasn't been a tech seminar like this outside a Society meeting ever." This \$130 value is free with your registration to CRC.
- We are having our large evening social event on Thursday night instead of Friday night. **Thursday night** will be a **Big Cajun Party** at the Mardi Gras Museum complete with Mardi Gras floats, a great band, entertainers, crawfish, beads, dancing, and beverages.
- We are giving you an opportunity to hit the town on Friday night and experience the local flavor. We will be your concierge for the night. Try our five casinos, top notch restaurants, and Shreveport night life.
- Plenty of things to do for companions. Plantation tours, shopping, real Cajun shops and food, casinos, etc. You will have a good time. I guarantee it!
- Golf and skeet tourneys that are local as well as regional.

NOTE: I have attached a copy of the schedule of events. Please look it over as things are a little different than years past. Also, I attached a copy of the flyer for the technical seminar entitled, "**The March to Net Zero Energy Buildings**" we are having at CRC. Again, we have a world class line up of speakers. This is a once in a lifetime opportunity. Please print the seminar flyer and pass it around. Non ASHRAE members need to come to the seminar as well. Note that your registration for CRC covers your registration for the technical seminar. Last, **send this email to all of your people.** Everybody needs to sign up and attend the CRC.

Again, make sure and register now at <https://xp20.ashrae.org/secure/CRCShreveport/CRCRegistration.htm>. You can register for the CRC and reserve your hotel rooms all from this link. We are having the meeting at the Shreveport Convention Center, which is attached to the Hilton Hotel. Your other hotel option is Sam's Town Casino & Hotel. Sam's Town is two blocks from the Hilton/Convention Center. See you in Shreveport!



Kurt Lyles
Region VIII CRC General Chair
1526 W. Dalzell Street
Shreveport, LA 71103
Tel: 318-550-0525
Fax: 318-550-0526
Cell: 318-453-7878
klyles@mechanicalconceptsllc.com

ASHRAE -Region VIII CRC

2008 Shreveport, Louisiana April 24-26, 2008

Wednesday, April 23rd, 2008

Registration & Check-In -4 PM –8 PM

Thursday, April 24th, 2008

Registration & Check-In -Noon –5 PM

Hospitality Suite Noon –5 PM

Golf 8 AM at Olde Oaks Golf Course, Bossier City

Skeet 10 AM at Shreveport Gun Club

CRC Caucus Orientation: 4 PM -5 PM

Leave for the welcome party

Welcome Party (*don't miss it!!*) 6 PM until . . .

Friday, April 25, 2008

Concurrent Morning Events

Registration & Check-In –7 AM-3 PM

Hospitality Room –8 AM-9:30 AM, 2 PM –5 PM

Companion Events 9:30 AM –4 PM (Plantation Tours, Lunch, and Shopping)

Caucus Breakfast 7 AM –7:45 AM

CRC Business Session 8 AM –11:45 AM

President's Luncheon 12 Noon –1:45 PM

Technical Seminar 2 PM –5 PM (The March Towards Net Zero Energy Buildings)

Golden Gavel, Newsletter Judging 2 PM –5 PM

Cocktail Hour 5:30 PM –6:30 PM

Hit the Town . . . 6:30 PM until

Saturday, April 26th, 2008

Registration 8 AM-11 AM

Hospitality Suite 9 AM –Noon

Workshops 8 AM –9:45 AM Chapter Officers, Research, Membership, Web, Historians

10 AM –11:45 AM Newsletter, CTTC, Student Activities, Refrigeration

Awards Luncheon 12 Noon –1:45 PM

Reconvene CRC Business Session 2 PM

Louisiana Lagniappe

Region VIII CRC 2008 Shreveport, LA

TECHNICAL SEMINAR – 2 – 5 PM April 25th, 2008

Topic: The March to Net Zero Energy Buildings

4 hours of professional development hours

Cost: \$130.00 includes admission to the President's Luncheon at 12 noon (3 PDH hours available to attendees)

Admission is included if you have registered for the CRC

Overview

To reduce the building design industry's impact on the environment, key leaders from the building design community are collaborating to establish carbon-neutral buildings by the year 2030. The American Institute of Architects (AIA), the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), Architecture 2030, the Illuminating Engineering Society of North America (IESNA), and the U.S. Green Building Council, supported by representatives of the U.S. Department of Energy, are working together towards the goal of net zero energy buildings.

Don't miss this opportunity to listen to the world's leaders in the drive to net zero energy buildings!!!

Speakers:

Kent Peterson, P.E., Fellow ASHRAE 2007-08, President

Kent W. Peterson, P.E., Fellow ASHRAE, is vice president and chief engineer of P2S Engineering Inc., Long Beach, California.

As ASHRAE's president, Mr. Peterson directs the Society's Board of Directors and oversees the Executive Committee. Through his theme, Greater Efficiency Today, Blue Skies Tomorrow, Mr. Peterson emphasizes innovation in the quest for sustainability in the built environment. He notes that "energy efficiency should always be the elegant alternative to fuel consumption." As such, he encourages ASHRAE members to become more radical in their ideas, more daring in their creativity, and dedicated to delivering innovative systems, methods and technology.

Mr. Peterson has served on the Board as president-elect, treasurer, vice president, and Region X director and regional chair. Past service includes chair of Technology Council, Members Council, the Advocacy Committee, the President-Elect Advisory Committee the ASHRAE Learning Institute Board of Trustees, the Finance Committee, the Planning Committee, the Region-at-Large Transition Committee and the Student Activities Committee.

Mr. Peterson was president of the Orange Empire Chapter. He is a recipient of the Exceptional Service Award and the Distinguished Service Award.

He was awarded a bachelor of science in mechanical engineering from California State University at Long Beach. Mr. Peterson resides in Cypress, California, with his wife, Carolyn, and three sons.

Paul A. Torcellini — National Renewable Energy Laboratory – Building Team Leader

Paul was hired at National Renewable Energy Laboratory in 1994 and is currently the Building's Team Leader. Paul also leads the efforts of the High Performance Research Initiative. This effort is dedicated to studying the behavior of low-energy buildings both on the design side as well as the performance side. Most of these buildings have an energy reduction of 50% or more when compared to applicable energy codes.

Paul works with developing design methods such that energy features are integral to the building design and these features are properly implemented. The research concentrates on envelope design, daylighting strategies, control strategies, and HVAC design, as well as establishing metrics for measuring building performance.

Prior to joining NREL, Paul was an Assistant Professor at Youngstown State University. Paul holds a Master's degree and Ph.D. from Purdue University specializing in passive solar design and control of commercial buildings. He is also a registered Professional Engineer and Adjunct Professor at the Colorado School of Mines.

Among his many awards, Paul has received two ASHRAE (American Society of Heating, Refrigerating, and Air-conditioning Engineers) Technology Awards for his High Performance buildings work and two Energy User News Magazine's Efficient Building Awards. Paul received a 2000 NREL Staff Award for Outstanding Community and Professional Service.

Mick Schwedler, P.E. – Trane, Manager of Applications Engineering

Mick has been involved in the development and support of HVAC systems for Trane since 1982. As manager of applications engineering his areas of expertise include system optimization (in which he holds patents) and chilled water system design. His primary activities include assisting designers in proper application of Trane products and systems in buildings, and writing system application manuals and newsletters. In addition, he has presented technical information to thousands of engineers through Trane's Engineers Newsletter Live satellite broadcast series. Mick has given technical seminars throughout North America, as well as in the Far East and South America, and published a number of papers within the industry. Prior to his work with Trane, Mick received his MSME from the University of Wisconsin Solar Energy Laboratory and BSME from Northwestern University.

An active ASHRAE member, Mick is Chair of SSPC 90.1, responsible for ASHRAE/IESNA 90.1, "Energy Standard for Buildings Except Low-Rise Residential Buildings." He is past chair of TC 1.5—"Computer Applications," and has served on ASHRAE's Professional Development Committee and Code Interaction Subcommittee. From an environmental perspective, Mick authored portions of the ASHRAE Green Building Guide and has served on technical advisory groups for both the New Buildings Institute and the US Green Building Council's LEED® products.

