



# CLEVELAND *ASHRAE Newsletter*

April , 2005

## APRIL MEETING

### HVAC Jeopardy

April 18, 2005



4:15-5:30 PM

5:30-6:00 PM

6:00-7:00 PM

7:00-8:00 PM

Presenter:

Location:

Board Meeting

Sign In & Happy Hour

Dinner

HVAC Jeopardy

Richard Long

**Holiday Inn**, Rockside in Independence

*R.S.V.P. at (216)-373-0315 by 12:00 Noon on Friday, April 15th for Reservations*

*Dress Attire is NOW Business Casual*

### Technology Awards - T.E.G.A.

Thanks to all who submitted projects for this year's competition. The next step is evaluating/judging at the local chapter level.

The chapter is looking for 4-6 members to review the projects for appropriateness and overall compliance with ASHRAE guidelines. The assessment is not intended to be a rigorous technical analysis. Therefore you do not need to be a P.E. in order to volunteer, and your time commitment will be minimal.

Your fellow ASHRAE members have taken the initial step toward garnering recognition for the Cleveland Chapter. Please assist them by offering to help with judging. You can call me at any time with questions and/or to pitch-in: 440-666-1249.

Thanks in advance.

Bruce Tomcik

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*If you are interested in sponsoring the news letter,  
please contact Matt Nelson at 440-243-3535.*

## Officers and Committee Chairmen

2004-2005

### Officers and Board of Governors

President	Richard B. Long
Vice President	Brian P. Chantres
Treasurer	Kenneth F. Borah
Secretary	Kenneth Wissner
Board of Governors	Mitt Nelson Dale VanLahn Frank Eisenhower

### Committees and Chairs

Chapter Technical Transfer Committee	Chuck Nachman
Programs (CTIC)	Chuck Nachman Robert J. Larnese
Refrigeration (CTIC)	Richard B. Long
Gov't Activities (CTIC)	Mitt Nelson
Membership & Roster	Frank Eisenhower Billy Kocksky
Product Directory	Daniel J. Back
Resource Promotion (Research)	Mike Mats Terry Ketch Dominic Gaudici
Newsletter	Andrew Terhundfeld
Student Activities	Scott K. Jordan Richard B. Long
Honors & Awards	Fred H. Hollman
Historian	Dave Deschler
Science Fair	Steven R. Armstrong
Meeting Host	Kevin Kindborn
Scholarship Fund (Sal Trains & Gardiner)	Scott K. Jordan Richard B. Long Jerald K. Cohen Gary Gardiner
Golf Outing	Ken Borah Louis A. Barten
Engineer's Week	James G. MacMillan
Special Events (December Social)	Mike Dark
Budget & IRS Compliance	Fred H. Hollman
Sunshine Fund	James W. Wickert

## *The President's Corner* by Richard Long

TIME for work. TIME for friends and family. TIME for ASHRAE??? Perhaps it's TIME for some **FUN!** The **JEOPARDY game**. As the final months approach for my tenure as president, I would like to applaud the members of our society that participate in our monthly meetings month after month. For without this core group of members and committee chairmen who support our chapter and seek out technical knowledge, our chapter would not be what it is today. I believe we all gain more than just technical knowledge by attending local meetings. Last month's meeting on acoustics was a perfect example of TIME well spent! An ASHRAE morning breakfast meeting got many of us away from the normal drive to work routine and allowed those who attended to learn something new regarding acoustics from an excellent technical speaker. The camaraderie was also special. It was apparent that most of the attendees preferred this early morning start for our monthly meetings in lieu of the customary nighttime meeting. I believe we should continue with some of these morning ASHRAE breakfast meetings in the future. This month as the weather finally warms, will be the TIME for Cleveland ASHRAE members to have some **FUN!** We will test the knowledge of our members with this month's HVAC **Jeopardy** game. Learn about Psychometrics, Refrigerants, Fans and Airflow, Cleveland Sports and other topics at this month's meeting with a game that we are all familiar with – **Jeopardy**. A number of prizes will be handed out. Remember to phrase your answer in the form of a question!

A question I feel that I need to pose to our society members is how can we bring new blood into our chapter? I can ask this question, and the next president, and the next can continue to ask but what we need ARE volunteers. As seen in the above paragraph, my thought for this April is we all must decide where to spend our TIME. If some of us would allot just a little TIME to our local chapter, the TIME spent offers an outstanding return on investment. We gain technical knowledge, we may gain an awareness of who's building "Green" or who to ask for advice, we build friendships and the list goes on. I urge our members to help encourage the younger associates who may be unsure of the benefits of attending ASHRAE meetings and undecided if the TIME is worth investing.

For most of us, this industry is our livelihood and there are many of us who have a true passion for this industry. Our local chapter needs to borrow just a little TIME from people who have not given in the past – both old and new members should give a call to a committee member to offer some help for the future. Some committee chairmen have spent many years devoting their TIME to our chapter and some will be asking to step down soon. To have a few volunteers ready and willing to step up will make our chapter continue to thrive. If you or someone you know has even a slight interest in helping the Cleveland chapter out, please call any of the officers or committee chairman. Some of the committees take only a few hours a year and others quite a bit more but, it could end up being some of your best-spent TIME!

*Richard B. Long*

# Technical Topic

How many of you have spent some of your spare time looking at the Addendum changes for ASHRAE Standards this year? How can we keep up? Do we have time to consider using such standards as ASHRAE 62-1 Air Quality method in lieu of the Ventilation Rate tables for ventilation air to reduce outdoor air load on a building? Can we put a hot water coil for reheat to prevent over-cooling a space on a constant volume system or are we breaking the ASHRAE Standard 90.1 energy ruling of no reheat or any form of Simultaneous Heating and Cooling? I believe engineers and contractors are torn between the current pace of time available on projects and trying to keep up with changes in Technology, Standards and Codes. So how should we be handling today's fast pace world? Perhaps the 5 questions out of the last 6 sentences begs the question – how do we keep up?

Let me address a few of the changes in some of the ASHRAE Standards over the past few months and perhaps shed a little light on these Standards.

What is Addendum X for ASHRAE Standard 62-2001? It addresses mandatory **Dehumidification and Pressurization** for buildings.

Regarding Dehumidification – There is design limit of 65% or less for occupied spaces at either of the two following conditions:

1. At the peak outdoor dew-point design conditions and at the peak indoor design latent load or
2. At the lowest space sensible heat ratio expected to occur and the concurrent (simultaneous) outdoor conditions

It is important to point out that the outdoor dry bulb, solar load, and space sensible heat ratio may be significantly different at outdoor dew-point design conditions then when calculated at outdoor dry-bulb design conditions.

Exfiltration – for a building, the design minimum outdoor air intake shall be greater than the design maximum exhaust airflow when mechanical air-conditioning systems are dehumidifying.

The remainder of Addendum X addresses the building envelope requirement and the prevention of condensation from proper insulation on cold surfaces such as pipes and ducts. In other words, the Standard doesn't like mold conditions under which mold may occur. In summary, this addendum addresses indoor humidity and the building envelope as they relate to potential indoor air quality problems. The new upper limit for building relative humidity is now 65% if there is mechanical dehumidifying equipment. And a **building pressurization** system with proper controls should be implemented to prevent the infiltration of humid moist air condensing on cold interior surfaces.

How many of us are hearing more and more about the Energy Standard ASHARE 90.1? Confusion appears to manifest itself when trying to interpret many of the different concepts of this Standard. Let me point out the significance of an "Exception" as with many other exceptions within the Standard. As most of us know, as we select a chiller operation for lower water temperatures, the efficiency of that chiller goes down. Though we may lose on chiller efficiency, the benefits are many for what we gain. We gain the ability to get better performance out of cooling coils and thus can operate an air handler at lower air quantities. Lower air quantities lowers fan energy costs significantly and would also save on first cost from smaller ductwork. The same holds true for the chilled water pump. ASHRAE Standard 90.1 has minimum values for efficiency rated typically in COP. Chillers operating between 40 degrees and 48 degrees must abide by the minimum full load COP according to the 90.1 Tables for each category of chiller. Yet, there is an "Exception". Due to the advantages of running colder water, "Chillers designed to operate below 40 degrees are not covered by this Standard. Perhaps EXCEPTIONS are there for good reasons!

# ASHRAE-Satellite Broadcast

## Mold In the Building Environment



### **Day & Time:**

**Wednesday April 13<sup>th</sup>, 2005**

**1PM-4PM , ESDT**

**Cost: Free !**

### **Where:**

**Channel 3 Downtown Cleveland,  
East 12<sup>th</sup> and St. Clair**

Concerns about mold in the building environment are no longer limited to just humid environments or North America. Mold is now a global concern for designers, contractors, building owners/operators and building occupants. Information on how to properly control moisture and humidity conditions in order to minimize mold will be presented in an April 13, 2005, satellite broadcast and Webcast, *Mold in Our Building Environment*, offered by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). The program is sponsored by ASHRAE's Chapter Technology Transfer Committee (CTTC).

"Moisture management and humidity control require a team effort during the design, construction, start-up and operation phases of a facility," Wilfred Laman, chair of CTTC, P.Eng. said. "If any part of the team fails to perform their tasks in proven and prescribed methods, the facility may promote mold formation and growth. This broadcast will be beneficial to all team members by describing how each should perform their tasks properly."

The level of interest in mold has also expanded to the legal profession due to the claim that "mold is gold" based upon recent jury awards in mold-related cases, according to Laman. For situations where mold is present, various proven assessment and remediation processes will be addressed for different types of facilities. Speakers will include biological, chemical, investigative and health experts, design architects, engineers and contractors who specialize in mitigation.

### **Chapter Programs Corner-March Meeting**

The 2<sup>nd</sup> Annual ASHRAE Breakfast meeting on March 23<sup>rd</sup> “sounded” like a great meeting to attend and 34 of our members were not disappointed. Mr. Arthur D. Hallstrom, Airside Applications Engineering Manager from Trane Company, presented “*Acoustics-Noise Control Myths and Realities.*” Mr. Hallstrom stressed the importance of specifying air handlers that have been sound tested and certified to *ARI 260: Sound Rating of Ducted Air Moving and Conditioning Equipment*. Although AMCA standard 300 also applies to acoustical data, in the opinion of Mr. Hallstrom, the ARI 260 standard provides the best acoustical data for air handlers. Arthur also stated that for acoustical trouble shooting, it is imperative to understand “the problem path” (i.e. how is the objectionable sound reaching the occupant?). Although this seems obvious, many times people use the shotgun approach and overspend dollars and perhaps still not solve the problem. By utilizing the “source-path-receiver” methodology and determining the problem path, the best remedy to fix the problem can be determined. Finding the problem frequency will also help provide the correct solution. If an acoustical consultant is required, Mr. Hallstrom reported that the consultant should be a member of the National Council of Acoustic Consultants (NCAC). In closing, Arthur demonstrated an acoustical software for a laptop computer. When used with a microphone, the software is able to provide excellent acoustical analysis for equipment and space conditions. For about \$500, you are able to assemble this system.

Singing off for now, but I am sure we will hear your voices at ASHRAE JEOPARDY on April 18th!

Rob Laneve

### **Chapter Programs Corner-February Meeting**

Last Month’s Green Building Panel Discussion was a great success. Over 100 members attended it from the Akron AIA, Akron – Canton ASHRAE chapter along with our Cleveland chapter. This was our second joint meeting with the Akron-Canton chapter this year. We hope to have more joint chapter meetings with other organizations in the up coming years. I would also like to thank Elaine Barnes, Joe Pustai, Diane Poss, Mike Morely and especially Michael Ivanovich for their roles in the discussion. Mike spearheaded an extremely energetic dialogue between questions from the audience and the panel members. It was pointed out by one of ASHRAE’s regional chairman Jim Gartner visiting us from Cincinnati that ASHRAE will be taking much more of a role in the development of LEED (Leadership in Energy and Environmental Design) rating system especially with regards to ASHRAE’s 90.1 Energy Standard along with the 62.1 Indoor Air Quality Standard. It was made apparent from the question and answer dialogue that the best way to accomplish the construction of a green building is to start each project with a coordinated effort and the devotion from the owner, architect and engineer. If this concept of ‘Green’ becomes a common process for designing buildings, it is apparent that agencies such as the Green Building Coalition and ASHRAE with all of it’s Standards will influence the construction industry more than we have ever seen in years’ past. We look forward to seeing you at next month’s morning breakfast meeting.

Chuck Nachman



## ***Chapter Calendar:***

**May 16, 2005**

**Location:**

Contractor's Expectations

Harry's Steakhouse

**June 15, 2005**

**Location:**

June Golf Outing

Tanglewood Country Club

**And Baseball is here!**

## **2005 NORTHEASTERN OHIO SCIENCE AND ENGINEERING FAIR ASHRAE AWARD WINNERS**

**On March 29, 2005 Rick Long and Steve Armstrong represented ASHRAE Cleveland Chapter as judges for the 2005 Northeastern Ohio Science and Engineering Fair held at John Carroll University.**

**If you believe Northeast Ohio has a lack of young, bright and innovative scientist and Engineers you need to attend this event and you will see how false that statement is. The judges had a great time reviewing and communicating with the students as they judged over 360 projects. Here is a summary of the projects:**

**Total Number of Projects= 363, 263 by Grades 7-8 and 100 by Grades 9-12**

**Number of Participating Students by Institution Type**

**The projects are judged by over 200 Participating Judges from over 80 Associations. If you are interested in participating as a Judge for 2006 please contact Steve Armstrong for more details.**

**Congratulations to Kara, Victoria and Gabriel for doing such a fine job on their projects and on presenting the material to the judges. An invitation will be going out to these students to display their projects to the Cleveland Chapter at the May meeting.**