ASHRAE Central Arizona Chapter

Dust Devil

SEPTEMBER 2016 NEWSLETTER OF THE CENTRAL ARIZONA CHAPTER OF ASHRAE

CALENDAR

SEPTEMBER
13 5:30 Chapter Meeting/Radisson

OCTOBER
11 11:30 Chapter Meeting / Radisson

NOVEMBER
7 5:30 Chapter Meeting / Radisson

DECEMBER
13 11:30 Chapter Meeting / Radisson
15 6:00 Holiday Social / The Duce

JANUARY
10 5:30 Chapter Meeting / Radisson

FEBRUARY
14 11:30 Chapter Meeting / Radisson
16 2:00 Annual Tabletop Product Show / El Z

MARCH
10 7:00 ASPE Golf
14 5:30 Chapter Meeting / Radisson

APRIL
7 6:30 Annual Golf Tournament / TBD
11 11:30 Chapter Meeting / Radisson

MAY
9 5:30 Chapter Meeting / Radisson
16 11:30 ASPE / Aunt Chiladas

JUNE
(9) 7:00 Annual Chapter Awards Dinner / TBD

SEPTEMBER
12 5:30 Chapter Meeting / Radisson

BEAU TURNER
CHAPTER PRESIDENT 2016/17

My number one goal this year is to increase meeting attendance by picking topics that are interesting to our membership, such as our presentation on conditioning canabis grow rooms. Other topics we're looking to cover this year include ethics, panel discussion on the building process, BIM coordination, among many other topics. We are always looking for other great meeting topics. Please feel free to email me any suggestions.

We're looking forward to hosting more Young Engineers in ASHRAE this year. There will be at least 4 events this year and we will most likely be returning to The Yard for another bags tournament.

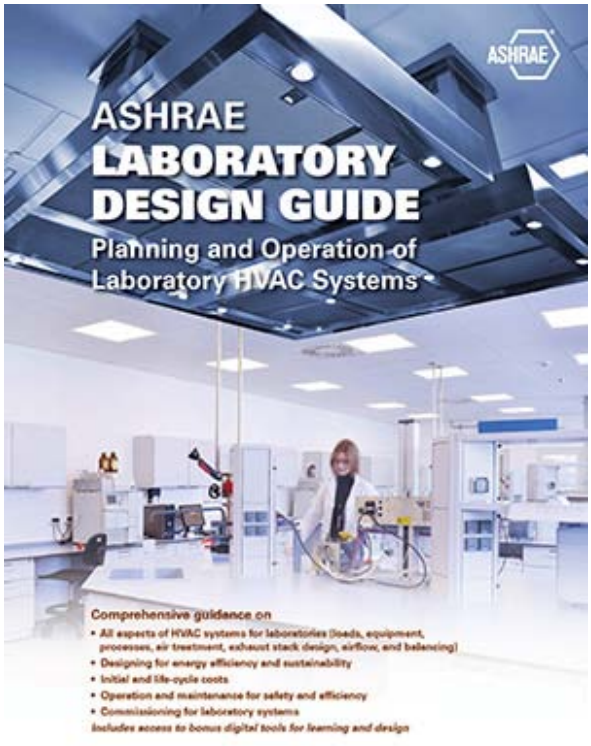
Please consider submitting a project or colleague for one of our annual Chapter Awards. Avoid the rush! As an industry, we want to encourage good behavior, and recognition is essential.

I'd like to thank all of the volunteers that make our Chapter so great, without volunteers there would be no local ASHRAE community. If you are interested in getting more involved in the Chapter please let me know. We are always looking for more volunteers and there are always new positions opening up! bturneraz@gmail.com

LOOK AHEAD: OCTOBER TOPIC

Mike Kaler, president of Mestex, has been involved in evaporative data center cooling for the past several years. He has worked with some of the biggest tech companies out there to design their data centers. His presentation will cover what data center researchers are learning with respect to evaporative cooling and data center design.

AVAILABLE FROM ASHRAE:



BEING IN TUNE IS NOT AS MUCH FUN AS YOU THINK

If you google "resonance in piping" you will get a lot of science experiments, wiki entries about tuning columns, and if you look hard enough a discussion of water hammer, which is a form of resonance. This article isn't about any of those.

I've only had this happen four times (between 1979 and 2005 for the statistics majors), but it can be quite a puzzle. It can manifest in a couple of variations. My first encounter was a complaint of noise on the stage of a middle school; water source heat pump application, with the supply water main routed right over the stage. You could walk across the stage and hear the node points (about 10' apart), the noise rising and falling as you walked. I forget how we fixed it; might have run the pipe somewhere else.

A more typical event was a 5-story office building, again heat pumps, with a loud humming noise in just this one location on the 3rd floor (pumps on the roof). Similarly, a 12-story high rise, cooling tower water going from roof to basement chiller plant, with the noise only apparent next to the stair well on the 6th floor.

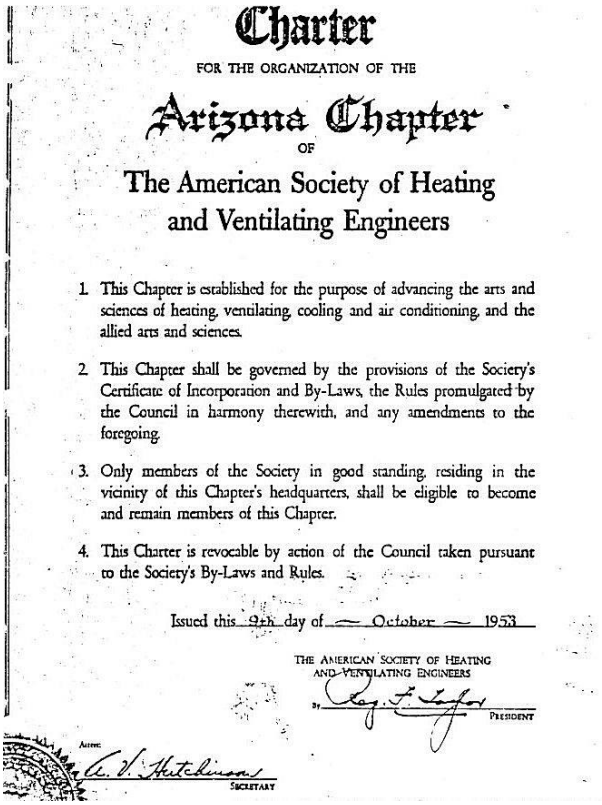
And also a plumbing phenom (don't want to leave anyone out): 1-1/4" line feeding the cooling tower makeup, crossing a long way over a warehouse section of an industrial plant. There, we couldn't hear any noise, but the pipe would periodically and forcefully shake back and forth (amplitude, unrestrained, about 12"). It was blowing out the drywall where the pipe came through, whacking back and forth.

In every case, the only explanation that made sense was some kind of chance resonance, the "just right" tuning reinforcement due to a specific length and diameter and distance and pump rotation. I don't think we could design it that way if we tried. Just bad luck, apparently.

Fortunately, on "round 3" of the match, a pipe fitting vendor, wise in his years, knew the solution: two flex sections of pipe with a 90 degree elbow between. (In that instance, the fitting was available as a factory assembly, but you can do the same thing with three easy pieces.) The flexes have to have 90 degrees of separation, and in both instances where we fixed it (4" and 12") we just went to the first elbow downstream of the pump discharge, and replaced the elbow with the flex/el combo. The noise, many floors and feet distant, immediately ceased.

Should one take precautions? I never did, given the rare occurrence (four instances out of maybe 600 systems), but knowing the fix is important.

THE HISTORY CHANNEL 1953:



Charter

FOR THE ORGANIZATION OF THE

Arizona Chapter

OF

The American Society of Heating and Ventilating Engineers

1. This Chapter is established for the purpose of advancing the arts and sciences of heating, ventilating, cooling and air conditioning, and the allied arts and sciences.
2. This Chapter shall be governed by the provisions of the Society's Certificate of Incorporation and By-Laws, the Rules promulgated by the Council in harmony therewith, and any amendments to the foregoing.
3. Only members of the Society in good standing, residing in the vicinity of this Chapter's headquarters, shall be eligible to become and remain members of this Chapter.
4. This Charter is revocable by action of the Council taken pursuant to the Society's By-Laws and Rules.

Issued this 9th day of October 1953

THE AMERICAN SOCIETY OF HEATING AND VENTILATING ENGINEERS

By _____ President

Attest: _____ Secretary