



# ASPE NEWS

American Society of Plumbing Engineers

## Eastern Michigan Chapter

[http://aspe.org/Eastern\\_Michigan](http://aspe.org/Eastern_Michigan)

Serving our membership since 1975

Vol. 14, Issue 7

### Plumbing Design Classes

**Date:** Tuesday, March 15, 2011  
**Where:** Plumbing Industry Training Center  
*SEE map on back page*

**ASPE HANDBOOK & VENDOR CLASSES**  
**3:45 - 5:30 PM**

**Basic:** Medical Air Components Systems Design & Eng.  
**Vendor:** Seismic Proper Design, Application & Code Requirements  
**Speaker:** Kyle Tevault

**DINNER**  
**5:30 - 6:00 PM**

**Cost:** ASPE, ASSE, MBPA Mbrs: NC  
 Non-members: \$15.00 FOR DINNER

**DESIGN CLASS**  
**6:00 - 8:00 PM**

**Topic:** Compressed Air Equipment & Selection  
**Speaker:** Ron Warren, PE  
*See page 3 for program & bio*

*See the full event schedule on our web site.*

**REGISTRATION REQUIRED**  
 RSVP by the **Friday** prior to day of class to:

**Edwin Hawley, VP Tech:**  
**edwinhawley@att.net**  
**(248) 656-8253**

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## PRESIDENT'S REPORT

**John R. Nussbaum, IPP, FASSE**



This year's ASSE / ASPE Awards Banquet once again proved to be a huge success. Between 92 and 100 attendees were present at this gala event, which shows that even in tough times the Plumbing and Mechanical Industry can come together and enjoy an evening of comradeship, forgetting the tough times we are going through. A good time was had by all as the pictures will attest too. Music was by Mark.

I am grateful to our sponsors: Mid West Instruments, Balfrey & Johnston Inc., R. L. Deppmann Co., Flo-Guard, VE Sales, Lochinvar Corporation, Performance Engineering, Dave Watson & Associates Inc. and Target Sales. Without their generosity we may have failed. Thank you, Sponsors.

Out-of-town guests included ASSE's International President James Bickford, Stacey Wesselink (our keynote speaker), IPP's Pat Sugrue, Ken Kerr, Ed Lyczko and his wife Ruth, MCA staff: Chris Freeman, Molly Forward, Tom Storey, Cassandra Mudloff; City of Detroit Bureau Chief Wayne Robinson and State of Michigan Plumbing Board member David M. Jones, CPD, from the John E. Green Co.

Michigan Chapter President Esteban Cabello, PE FASPE, was the master of ceremonies for the evening. Assisting behind the scenes was his lovely wife, Indi, who with Cindy Zatto provided the table decorations.



Mark and Lisa Fine, being good sports, volunteered to help keynote speaker Stacey Wesselink (left) orchestrate a skit for the entertainment of the attendees. SEE additional ASSE Banquet photos on pages 3, 4 and 6.

Highlights of the evening began with a very entertaining skit about airport security orchestrated by Stacey Wesselink with the help of Mark Fine and his wife. Stacey's topic of discussion was on legionellae being found in hospital water and air conditioning systems. Stacey cited the many cases that we never hear about, including the deaths of two personal family members. Her talk was very enlightening on the seriousness of the problem, heightening our

*continued on page 4*

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### A Navien NR-240A Tankless Water Heater

\$5 per ticket / 3 tickets for \$12 / 7 tickets for \$25  
Purchase tickets from any of our board members.

Drawing will be held May 17, 2011 at the ASPE EMC monthly meeting. Need not be present to win.

Water Heater donated by Balfrey & Johnston, Inc.



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## March Tech Program

### Compressed Air Equipment & Selection



Ron Warren, PE

Ron Warren, PE, is the Engineered Product Regional Manager for Ingersoll Rand located in Livonia, Michigan. He started with Ingersoll Rand Company in Canada in 1988 as an Application Engineer. In 1999 he moved into the role of Manager for Stantec Consulting Group (London Ontario) to manage projects, and staff in the Automotive Manufacturing area. After a number of assignments in project engineering and business development he moved to Ingersoll Rand USA - Industrial Group, in Indianapolis, Indiana, again as

Regional Sales Manager – Process Group. In 2005, Ron moved to Ontario, Canada to run Compressed Air Design training modules for A/E firms, and aftermarket projects. In 2006 after completion of the one-year assignment he moved to Michigan to take the role of Regional Sales Manager - Process Group with sector responsibilities in automotive. In December of 2008, he moved into the role of Engineered Product Sales and Applications. Ron Warren earned his BS in Mechanical Engineering from Technical University Nova Scotia in 1988 and his Project Management Institute certificate in 2000.

**Program:** Topics to be covered include: Equipment selection – Compressors (reciprocating, rotary and centrifugal), Dryers (refrigerated and desiccant), Filtration; Block diagrams – compressor room and plant layouts; Piping – sizing and design

## VP Technical Report

Edwin L. Hawley, CPD



The February 15th ASPE meeting started with a Vendor's program, "Navien Tankless Water Heating", presented by George Johnston, President of Balfrey & Johnston Inc. Having enjoyed our very good dinner by Ginny, the main program "Hot Water on Demand" began. The moderator was Allen Deal, PE, President of Performance

Engineering Group. The discussion panel guests included: Doug Crogan, Manufacturer (Navien, General Manager Sales); Gary VanDenberg Jr., Engineer (HS/Buy Van Associates, Inc.); and Kevin M. Coakley, Contractor (Linc Services, Mechanical).

The program began with the PowerPoint presentation, "Tankless Water Heaters". First off was an overview of the advantages, opportunities and key design points of this emerging technology:

- The history and growth associated with the tankless water heaters, and the forces behind this growth.
- The advantages of tankless water heaters and recognizing some of their possible shortcomings.
- Tankless water heaters are not yet standardized, and how this can play a significant role in the design considerations.
- Understand that basics of various installations options and industry accessories that can aid in the installation.
- We must follow the basic tankless system sizing concept and how it differs from the current methods to size tank hot water systems.

The history of the tankless water heaters started in the USA with Edwin Rudd, in 1889 with the patent for his design. It had a cast iron body with copper heat exchanger operated by a gas actuator valve, which turned on the heater's burner when a water faucet was opened. Sometime in the 1920's the cast iron all-copper heat exchanger design became too expensive to produce and during that period America was introduced to the storage tank of galvanized steel and then the glass lined tanks in the late 1940's. And it's been that way ever since... until now.

### Global Perspective of Tankless Technology - World Market

Tankless technology is used throughout most of the civilized world except in North America. The leading markets are Japan, China, Spain and Taiwan.

- The total World Water Heater Market is \$10.8 billion.
- Gas tankless market is half or \$5.4 billion.
- Electric storage is \$3.2 billion.
- Gas storage is \$1.7 billion.
- Electric tankless is \$500 million.
- In 2009 total US market was 325,000 units.
- Growth has averaged about 26% a year, 2003 thru 2007.
- LP currently accounts for 1/3 of the market.
- Will become 10% or more of the gas market before 2015.
- Future impact estimated at 30-40% of market.
- The Australian Model: 0 to 30% of market in about 7 years.



Marty Jipson (left) accepts the AI Cohen Award presented by Wayne Robinson



John Snyder (left) accepts the Larry Burkheiser Award presented by Matthew Kapcia

*continued on page 4*

## President's Report

*continued from page 1*

awareness. International President James Bickford gave an overview of what was happening on the national scene with ASSE and then proceeded with the Installation of the Michigan Chapter Officers and Directors for the 2011 year. Chapter Awards went to the following people: The prestigious L. Glen Shields award was given to Mary Chapman, the Albert Cohen award was given to Marty Jipson, the John E. Matthews award went to David M. Jones, CPD, the Malcolm Wallace award went to Dann Holmes, and John Anthony Snyder was the recipient of the Larry Burkheiser award.

John E. Matthews Scholarship Fund Raffle prize winners were as follows: Annette Heck won the Toshiba 40 inch LCD TV, Berry Pines won the I Pod and Charlie Reynolds won the I Pod Nano.

The rest of the evening was spent dancing and socializing. We thank all who support the associations and hope you had an enjoyable evening.

*Your president,  
John Nussbaum*

## VP Tech's Report

*continued from page 3*

Heater Type	TANKLESS	STORAGE TANK
Temp Rise	90 degrees	90 degrees
BTU's	199,900	40,000
Unit Weight	55 lbs	151 lbs
Efficient	0.82	0.62
Cubic Ft.	2.0	13.0
Del.1st Hour	222.0 gals	67.0 gals
Fuel	Nat. Gas	Electric
GPM	3.7	1.12
Storage	1.0 gal	55.0 gals
Controls	3.0 stages	On/Off

Most models have advance technology, such as self-modulating or staged burner providing maximum energy efficiency.

- BTU input automatically increases as demand for hot water increases.
- Only operates when there is a demand for hot water.
- No standing pilot – Electric spark ignition
- Temperature rise determines maximum output capacity.
- (HW outlet) – (CW inlet) = Temperature rise.

### Why Tankless Hot Water Heaters?

1. Energy Efficient, up to 15% compared to New 80% efficient of a commercial tank. Up to 30% compared to new residential tank.
2. Environmentally Friendly - Low NOx on most.
3. Precise temperature control, on most high end models in 2–5 degree increments.

*continued on page 5*

### ASSE AWARDS



Dann Holmes (left) accepts the Malcolm Wallace Award presented by Jason Loverich

### ASSE AWARDS



Dave Jones (right) accepts the John E. Matthews Award presented by Esteban Cabello

Q: How does a restroom figure into LEED® certification?

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# VP Technical Report

continued from page 4

4. Provided with Digital displays for temperature control and diagnostic and maintenance codes.
5. Installation flexibility with indoor and direct vent models. Vent horizontal or vertically. It is possible to lower the installation cost.
6. Providing the space saving by installing units close to end user. Using smaller footprint makes easier to zone.
7. Unlimited supply of hot water. The primary residential is the beneficiary of tankless heaters. Manifold up to 20 or more units.
8. System Redundancy in manifolding. If one goes down, the others remain operational.

Markets awareness is by knowing the product and comparing units at the same temperature rise.

GAMA rates temperature rise at 77degrees.

## Checking the minimum fuel pressure required:

- They vary from 4" to 6" w.c.
- Propane – 8" to 10" w.c.
- Allow for proper clearance to combustibles.
- Varies from 1/2" to 6" or more on the sides,
- 0" to 2" in rear of the unit.
- Up to 36" to the top and 24" to the front.
- Know the minimum activation flow, which varies from .4 to .78 GPM. Rated.

There are high altitude limitations. Does the unit compensate? If yes – how? What are its limits?

Does the unit offer freeze protection? If yes – how?

Important - are the units are protected?

1. Can the unit detect lime buildup, in single unit and manifold?
2. Is bigger better? They save space, but generally have lower efficiency.
3. Possible loss of system redundancy
4. Always pick the right product for the job.

## Overview of Electric Tankless Heaters

They may need 28 to 55 KW to compete with the gas models.

- Homes may need additional 120 – 300 amp supply.
- Communicating with electric utility is very critical. Not checking can result in equipment failures.

Other electrical concerns, can existing infrastructure handle the load.

Having to supply excess power for new homes.

Always check with utility in the project area.

The best opportunity for Electric tankless heaters at this time is the commercial applications.

Venting tankless water heaters, code under Category 111 Appliances

Proprietary or Stainless Steel required. (Check the manufacturer's specifications)

Cannot use combine vents. B Vent and Galvanized are not acceptable.

Indoor Options, With Power vent or direct vent units.

Side wall vent Termination. Preferred indoor installation

Provides lowest indoor installed cost.

Provide downward slope IAW Mfg. spec.

## Important Commercial Sizing Considerations

- Will a storage tank be required?  
What is the peak demand in GPM flow rates?
- Watch out for high GPM commercial demands.  
What are the minimum GPM requirements?
- Watch out for low flow without recirculation.

- Can you re-circulate directly through the tankless system.  
Will this impact the warranty?
- What is the temperature rise required.  
Restaurants, nursing homes, etc.

## Always select the Right Product for the job.

Remember, tankless may not be the answer.

Important Residential Sizing Considerations:

- What is the most logical GPM usage?
- Number of showers and appliances, Roman tub fill, etc.
- Residential fixtures use approximately 80% of the hot water.

What is the temperature rise required?

- The greater the temperature rise the lower the capacity.
- Use the lowest temperature at peak occupancy/usage.
- Or, default to January or February inlet water temperature.

Typical residential fixture is figured to use approximately 80% hot water.

- Refer to the GPM charts furnished by manufacturer.
- Also refer to the manufacturer sizing program if provided.

## High Efficiency Tankless Heaters Information

### PROS

- Unlimited hot water
- Multiple installation options
- Easier to zone
- System redundancy
- Green – Image and economical.

### CONS

- Application dependant
- No storage capacity
- Peak fuel demand – retrofit

Design dependent

- Space
- Costs

## Known Commercial Applications

Restaurants, schools, churches, laundromats, hotels, multi-family housing, nursing homes, prisons, dormitories, manufacturing, etc.

## Food Service Applications and Benefits

In new construction and retrofits

- Unlimited hot water
- Energy Efficient
- System redundancy
- Saved space  
More production space  
Lower construction costs

Most all major chains have test installations.

Each application has various criteria that need to be considered and complied with the demands and codes.

## Instantaneous Heater Sizing

ANSI definition - > 4,000 BTU/hr /gallon of storage

**Fuel can be:** Steam - Hot Water - Gas - Oil - Electricity

## Reference Guides

- ASPE Domestic Water Heating Design Manual*
- ASPE Chapter 4 table 12
- ASHRAE HVAC Applications Chapter 49 tables
- MFG selection guides/programs

## Michigan Dept. of Agriculture

- Unique sizing methodology
- Locally enforced/interpreted
- Forms to be filled out for hot water demands

continued on page 6

## VP Technical Report

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### Communicate with the Manufacturer

There are services that they offer:

- Application and sizing assistance
- PC based sizing programs
- Pressure drop and flow rate curves
- Installation specifications
- Installation drawings – some engineering approved.  
Manifold, recirculation, combo-heat, etc.
- Product Training

### General Summary – Key Points

The fastest growing segment within the plumbing industry  
Consumer driven, whether an individual or corporation  
Embraced and Supported by the natural gas & LP industries  
Proper design and proper installation are the keys to success.  
Position your firm as a leader in this growing industry.

The discussions that were provided by the Panel guests blended very well. This made it very educational to all whom had little or no experience with the tankless heater design or installation with the very valuable personal experiences from three different sectors - manufacturing, engineering, and the contractor. We received many good tips to watch for and the knowledge that we really should be **well informed** about the product we are recommending. The main point stressed by the panel is the need for the client to be educated about instantaneous and tankless hot water heaters in order to ensure they will be happy campers.

Many old questions were asked and they got answered fully. The exchanges were very lively, however, the referee present didn't blow his whistle once, and no one came to any fisticuffs. Those of you whom missed this very excellent presentation were on the losing team. The winners were the people who were present at this meeting.

**Hooray! Go plumbers and their guests.**

**REMEMBER** - Please call 248-656-8253 to make your reservations or you can e-mail me at [edwinhawley@att.net](mailto:edwinhawley@att.net) by Friday, March 11 and before 5:00 pm.

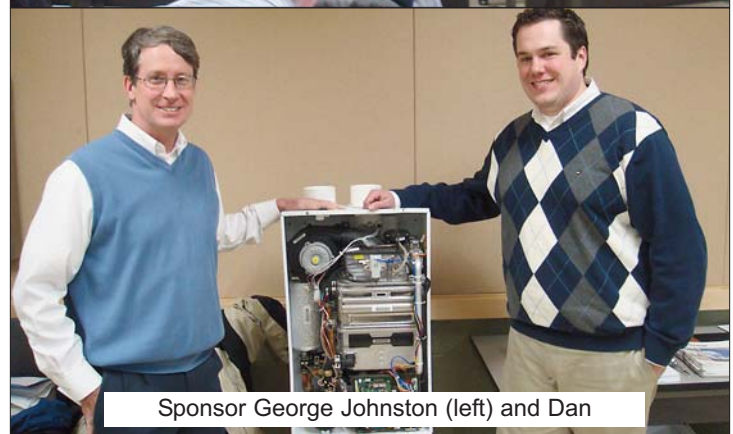
*Ed Hawley, CPD  
VP Tech*

Once again, we can thank Cindy Zatto for providing photos of the ASSE Awards Banquet. Her efforts over the years have been GREATLY appreciated by this newsletter editor.



## FEBRUARY 2011 MEETING PHOTOS

We thank our photographer, Cindy Zatto of VE Sales, for providing photos.



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# ASPE NEWS

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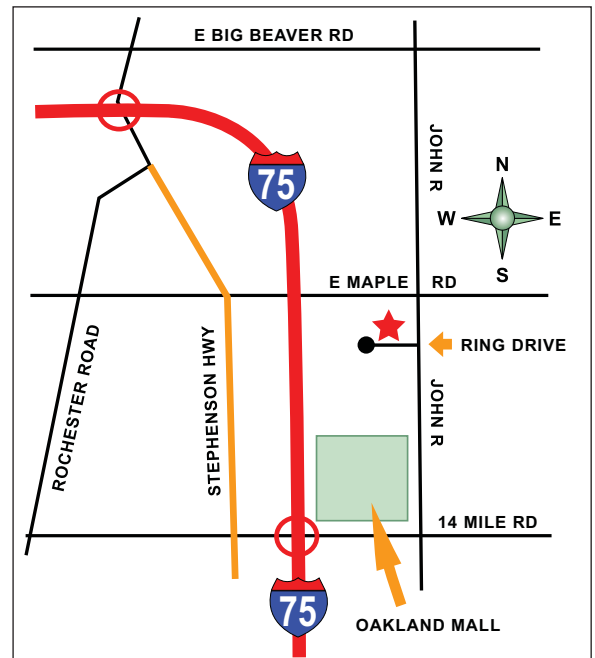
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### Map to the Plumbing Industry Training Center 1911 Ring Drive - Troy, MI West of and off John R, north of 14 Mile Rd.



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