Memphis Chapter Newsletter

January 2013

2012 - 2013 ASHRAE Memphis Board of Governors

President
Jimmy Fleck
President Elect
Will McGehee
Technology Transfer / Programs
Aubrey Tucker
Secretary
Rayn McDaniel
Treasurer
Greg Brown
Research & Promotion
Ryan Hertter
Membership Promotion
Jack Griffith
Student Activities
Jeremy Harris
Refrigeration
Ryan Stephens
Honors & Awards
Jeff McAlexander
Historian
Jerry Gatlin
Memorials
Ken Jack
Newsletter Editor
Brian Schaffler
Chapter Website
Kevin Crosby
YEA Chair
Chris Patterson
At Large Member
Evans Jack
Jonathan Lancaster
Past Presidents
Mike Bilderbeck
Russ Fletcher
David George
Joey Matlock
DRC
Jeff Gatlin

Lunch Meeting

Tuesday January 8, 2013, 11:30 AM
Meeting Location:
Fogelman Executive Conference Center
Holiday Inn University of Memphis
SHELBY BALLROOM

This months program and speaker:
Mr. Gus Faris
Vice President, Engineering of Nailor Industries, Inc.

Gus Faris has over 40 years of experience in the air conditioning and air distribution business. He is Vice President, Engineering of Nailor Industries, Inc. with direct responsibility for product design and development, quality assurance, field service and IT. Mr. Faris is chair of AHRI Air Control and Distribution Devices section and vice chair of AHRI Heat Transfer Products committees and serves on subcommittees 880 and 885 as well as AHRI Room Fan Coil subcommittee. He is also past Secretary of ASHRAE SPC 130 and also TC 5.3 (Air Distribution), past Chairman of ASHRAE TC 5.3 (Air Distribution) and RP 1292, member of TC 5.3and voting member of TC 2.9 (UV lights) and TC 7.7 (Test and Balance).

Presentation synopsis:

Since about 1978, there have been parallel and series fan powered VAV terminal units in wide use. The parallel unit was first produced in 1974 and the series unit followed in about 1977. Almost from the beginning, there was a dispute about which one was associated with the greatest building energy use. Today, there are also discussions about how to apply other technologies like dedicated outdoor air devices, low temperature primary air and modulated terminal unit fan air volume control. To answer these questions, AHRI and ASHRAE teamed up to fund a research project, ASHRAE RP-1292. The research was done at Energy Systems Laboratory, Texas A&M University, College Station, Texas 77843. During the first phase of this project the performance of the series and parallel fan powered terminal units were tested at the Energy Systems Laboratory. From the data that were collected, mathematical models were developed that characterized the performance of the terminal units over their full operating range. The objective of the second phase was to develop system models of single duct, multi-zoned VAV systems based on series and parallel fan terminal units and to use the model to compare the performance of the systems. It was a project requirement that the system model be verified using controlled laboratory experiments before the model was used to compare the systems based on the two terminal unit types.
A test matrix was developed that provided for testing all 12 terminal units tested during Phase 1 as part of a system. A total of 144 tests were conducted and the data were used to verify the system models for the series and the parallel systems. After the laboratory verification of the model was complete, a five zone model was developed that supported both the series and parallel fan powered terminal units. This presentation will discuss the models developed and what they found. A second research project was undertaken at Texas A&M to review the performance of PSC vs. ECM motors used in the two types of terminal units. This research was supported by Texas A&M, Regal-Beloit Motor Co., A.O. Smith Motor Co., Nailor Industries, Metal Industries and Kruger Manufacturing Co. Since the completion of the first project, there have been a total of 11 papers presented at ASHRAE to cover the results and how our industry is affected. Mr. Faris was chair of both research projects.