ASHRAE Regina Chapter

February 2018

Pile of Bones

Published by the Regina Chapter of ASHRAE

President's Message

By Brad Huber

For this month's meeting, we again land on Valentine's Day. As it was well received in the fall, we've decided to hold this meeting over another lunch hour. For this month, we are honored to host Darren Alexander, P.Eng. of TWA Panel Systems Inc. This open forum presentation will focus on a discussion relative to the system, air-side, water-side, and control elements, which can be optimized for low-stress: design, construction, and commissioning.

On March.14th, we will be hosting our technical seminar which will be presented by ASHRAE distinguished lecturer - Devin Abellon, P.Eng. with Uponor Inc. Our technical seminar topic will be focused on "Radiant Heating and Cooling Systems Design from Concept to Completion". Please keep an eye out for our flyer which will provide details for the seminar!

Devin Abellon will also be our speaker for the March meeting. The meeting will consist of an entirely different topic – "The (un)Ethical Engineer".

Meeting Notice

Wednesday, February 14, 2018

Chapter Lunch Meeting
Avoiding Common Pitfalls in the Applications, Installation, and Commissioning of Active Beams
Presented by Darren Alexander
Location: Double Tree Hotel
(Swift Current Room)
1975 Broad Street

12:00 – Members arrive and go through buffet line
12:15 – Speaker Presentation
12:45 – Chapter Meeting
1:00 – Adjourn Meeting

Upcoming Events

March 14, 2018

Chapter Meeting
The (un)Ethical Engineer
Presented by Devin Abellon

Committee Chair Reports

Vice President and Programs

By Natasha Skea

This month we are excited to welcome our guest speaker Darren Alexander from TWA Panel Systems Inc. Darren is a professional engineer with over 20 years of industry experience. After graduating from the University of New Brunswick, Darren worked his way northwest and is now based out of Nisku, AB. In 2008 Darren took a more active role in ASHRAE by joining Technical Committee 5.3 (Active Beam Selection). The topic of discussion for our upcoming meeting will be active beams and a summary is provided below.

Avoiding Common Pitfalls in the Application, Installation, and Commissioning of Active Beams – Presented by Darren Alexander

Beams are gaining in popularity throughout North America due to their ability to potentially lower HVAC operating costs, enhance thermal comfort, provide flexible air distribution solutions, and improve energy recovery options. However, as with all applied systems, there are nuances relative to their application that can “make-or-break” a project. This open forum presentation will focus on a discussion relative to the system, air-side, water-side and control elements, which can be optimized for low-stress: design, construction, and commissioning.

Membership

By Alana Yip

We are having a membership promotion draw at the March meeting. For any new society memberships assigned to our chapter since January 10th until the March meeting will be entered into a draw for a prize pack worth $100! Anyone who has referred those members to sign up will be entered into a draw for a prize pack worth $50! Please send those referrals to me at alana.yip@sasktel.net or if you know they have signed up, let me know you encouraged them. Together we can meet our goal for membership of 100 AAM.

Consider inviting that co-worker, colleague, consultant, or contractor that you feel should be involved in ASHRAE to our March meeting. It is scheduled for March 14th and will be a Membership Promotion night. Guest meals are only $40 for a great meal, networking and an informative speaker. We will be hosting ASHRAE Distinguished Lecturer Devin Abellon.

Thanks for all your help!

Student Activities

By Cailin MacPherson

ASHRAE will has been invited back to do another after school program at Mother Teresa Middle School. I am planning to focus more on engineering as a profession this go. If anyone is interested in joining me for a session please let me know. Student activities are also planning on creating a scholarship to send a couple children to a STEM camp – more on that later.

results in a total effectiveness of 30 percent (summer conditions).

Applications

Similar to the core technology, the aluminum plate is stationary and does not rotate between two airstreams, resulting in minimal cross-contamination. This feature, along with its aluminum construction, allows the technology to be applied in light industrial applications, as well as commercial and institutional comfort applications. In addition, since the aluminum plate only transfers sensible energy, it is most commonly applied in dry applications such as the southwestern portion of the United States.

Standards, Codes, and Certifications

Energy recovery applications are highly driven by the ASHRAE 90.1 standard. The 2010 version of the standard requires the use of energy recovery based upon a unit's supply airflow, outdoor air percentage, and geographic location as indicated in Figure 3 below. This language is adopted by the 2012 International Energy Conservation Code.

The standard mandates that the total effectiveness of the energy recovery technologies be a minimum of 50%. This value is determined based on the test procedure outlined in the Air-Conditioning, Heating, and Refrigeration Institution (AHRI) Standard 1060.

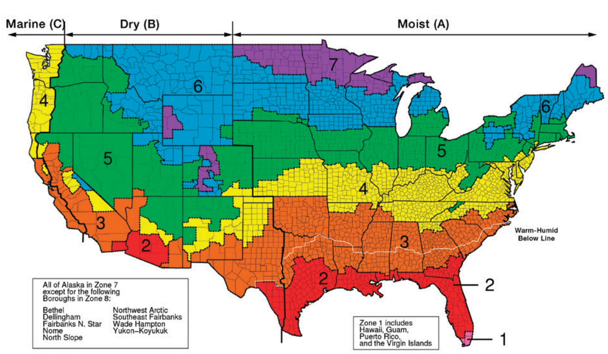
In addition to outlining testing procedures, AHRI also facilitates third-party performance certification for energy recovery technologies. To ensure that the performance data provided by manufacturers is accurate, AHRI will post all energy recovery manufacturers' performance data on the AHRI Directory online (https://www.ahridirectory.org) and facilitate third-party testing with an accredited laboratory. For additional information on the AHRI Standard 1060, please reference the application article ERA/109-02.

Summary

Understanding the differences between the total energy wheel, total energy core, and aluminum plate will help to apply the best energy recovery technology to a specific application. The primary benefits of each technology include:

- Total Energy Wheel: With a total effectiveness of 80 percent and the capability to clean the technology, polymer total energy wheels have the highest energy transfer in the market with ensured longevity.
- Total Energy Core: Great for applications below 2,500 cfm as they are low maintenance and provide a small footprint.
- Aluminum Plate: Only transfer sensible energy, making it a great technology for applications in dry regions.

See the following page to view a comparison of energy recovery technologies.



Climate zones (by county) for the 2004 Supplement to the IECC, the 2006 IECC, and ASHRAE 90.1-2004.

Figure 3. ASHRAE 90.1-2010 Climate Zone Map & Requirements

Zone	Percentage of Outdoor Air at Full Design Airflow Rate (cfm)					
	30% ≤ 40%	40% ≤ 50%	50% ≤ 60%	60% ≤ 70%	70% ≤ 80%	≥ 80%
	Design Supply Fan Airflow Rate (cfm)					
3B, 3C, 4B, 4C, 5B	NR	NR	NR	NR	≥ 5,000	≥ 5,000
1B, 2B, 5C	NR	NR	≥ 26,000	≥ 12,000	≥ 5,000	≥ 4,000
6B	≥ 11,000	≥ 5,500	≥ 4,500	≥ 3,500	≥ 2,500	≥ 1,500
1A, 2A, 3A, 4A, 5A, 6A	≥ 5,500	≥ 4,500	≥ 3,500	≥ 2,000	≥ 1,000	≥ 0
7, 8	≥ 2,500	≥ 1,000	≥ 0	≥ 0	≥ 0	≥ 0

NR = Not recommended

Energy Recovery Technology Comparisons			
	Total Energy Wheel	Total Energy Core	Sensible Plate
Energy Transfer	Sensible & Latent	Sensible & Latent	Sensible
Total Effectiveness	80%	60%	30%
Media	Polymer or Aluminum	Hydroscopic Resin	Aluminum
Desiccant	Molecular Sieve or Silica Gel	—	—
Applications	Commercial	Commercial	Commercial & Light Industrial
Benefits	• Highest total effectiveness • Segmented construction • Segments can be washed • Recommended for bathroom exhaust	• No moving parts • Extremely low cross leakage • Popular in low airflow applications due to small footprint and low maintenance • Recommended for bathroom exhaust	• No moving parts • Can be applied in light industrial applications

GREENHECK®

P.O. Box 410 • Schofield, WI 54476-0410 • 715.359.6171 • greenheck.com

2017-2018 Meetings and Events

September 13, 2017
Wascana Boiler House Tour
Led By: Doug Elder – Chief Engineer
Location: Travelodge Hotel

October 11, 2017
Lunch Meeting – 12:00-1:00 pm
Topic: ASHRAE Cold Building Climate Guide
Speaker: Erich Binder
Location: Double Tree

November 15, 2017
Topic: Sustainable Applications that Work
Speaker: Terry Townsend
Location: The Hotel Saskatchewan

December 14, 2017
Christmas Social
Wizard of Oz
Location: Conexus Arts Centre

January 10, 2018
Topic: Gas Detection Basics
Speaker: Greg Reeves
Location: Travelodge Hotel

January 22-24, 2018
ASHRAE Winter Conference
Chicago, Illinois

February 14, 2018
Lunch Meeting – 12:00-1:00 pm
Topic: Avoiding Common Pitfalls in the Application, Installation, and Commissioning of Active Beams
Speaker: Darren Alexander
Location: Double Tree

March 14, 2018
Topic: The (un)Ethical Engineer
Speaker: Devin Abellon
Location: TBD

April 11, 2018
Topic: Student Night
Student Night
Location: TBD

May 9, 2017
TBD

June 2018
ASHRAE/MCA Research Golf Tournament

2017-2018 ASHRAE Regina Chapter Board of Governors

President
Brad Huber
Cypress Sales Partnership
b.huber@cypresssales.com

Past President & Research Promotion
Jared Larson
MacPherson Engineering Inc.
j.jarson@mac-eng.ca

President Elect & Programs Chair
Natasha Skea
WSP Canada Inc.
natasha.skea@wspgroup.com

Membership Promotion
Alana Yip
SaskTel
alana.yip@sasktel.net

Secretary
Pierre-André Ranger
Johnson Controls Canada LP
pierre-andre.ranger@jci.com

Student Activities
Cailin MacPherson
MacPherson Engineering Inc.
c.macpherson@mac-eng.ca

Treasurer
Josh Thomas
Cypress Sales Partnership
j.thomas@cypresssales.com

Ways & Means
Wayne Tkach
MacPherson Engineering Inc.
w.tkach@mac-eng.ca

Historian
Bob England
RJ England Consulting Ltd.
bob@rjengland.com

GGAC (Government Grassroots Advocacy Committee) Chair
Janel Walter
SaskPower
jwalter@saskpower.com

YEA (Young Engineers in ASHRAE) Chair
Dylan Zwozdesky
Brandt Developments Ltd.
dzwozdesky@brandt.ca

Newsletter
Carla Drager
All-Rite Mechanical Ltd.
carla.drager@allrite.ca

Contact us at:
ashraeregina@gmail.com

Visit us at:
http://regina.ashraechapters.org/

2017-2018 ASHRAE Society Executive

Executive Committee

President
Bjarne Olesen
Kongens Lyngby, Denmark

President-Elect
Sheila Hayter
Golden, Colorado

Treasurer
Darryl Boyce
Ottawa, Canada

Vice President
Michael Schwedler
La Crosse, Wisconsin

Vice President
Ginger Scoggins
Raleigh, North Carolina

Vice President
Edward Tsui
Hong Kong

Vice President
Julia Keen
Manhattan, Kansas

Secretary
Jeff Littleton
Atlanta, GA

Directors – at – large

Van Baxter
Oak Ridge, Tennessee

Donald Brandt
Phoenix, Arizona

Dennis Knight
Mt. Pleasant, South Carolina

Lawrence Markel
Knoxville, Tennessee

William McQuade
York, Pennsylvania

Erich Binder
Calgary, Canada

Essam Khalil
Eqypt

Thomas Lawrence
Athens, Georgia

Tim McGinn
Calgary, Canada

2017-2018 ASHRAE Regional Executive

Director and Regional Chair
Keith Yelton
Portland, Oregon

Regional Members Council
Representative
Russ Lavitt
Winnipeg, Manitoba

Chapter Technology Transfer
Heric Holmes
Edmonton, Alberta

Student Activities
Jared Larson
Regina, Saskatchewan

Nominating Committee Member
Rob Craddock
Regina, Saskatchewan

Nominating Committee Alternate
Jeff Hurd
Anchorage, Alaska

Treasurer
Tom Jacknisky
Edmonton, Alberta

RP RVC
Ruth Armstrong
Eagle River, Alaska

GGAC RVC
Jeff Hurd
Anchorage, Alaska

Regional Historian
Doug LeCren
Anchorage, Alaska

YEA Regional Chair
Gregory Jernstrom
Anchorage, Alaska

Mempership Promotion RVC
Greg Fluter
Regina, Saskatchewan

Regional Webmaster
Emily Winfield
Alaska