February 2021

Pile of Bones

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President's Message

By Cailin Noll

Greetings. I hope everyone is staying warm; it's boiler replacement season out there!

The ASHRAE Virtual Winter Conference starts February 9th and runs until February 11th, however, I believe the videos will be accessible for 18 months. Find more information about the winter conference and how to register here: https://www.ashrae.org/conferences/2021-virtual-winter-conference

The Regina ASHRAE BOG is making a call to the membership to see if anyone would be interested in joining the 2021/2022 BOG. Please contact Carla Drager or me if you are at all interested (or if you want to volunteer someone…).

Stay warm,

ASHRAE Regina Chapter

Meeting Date – Wednesday

February
17, 2021
Time – 12:00pm – 12:50pm Presentation,
12:50pm – 1:00pm Chapter Meeting

Presentation – Angela Jamieson, P.Eng.

The COVID-19 pandemic has highlighted the importance of healthy buildings and the need for air purification. This presentation will share the research on how to clean the air through the understanding of airborne transmission and particle behaviour and demonstrate the new generation of in room ceiling mounted UV-C systems.

Login Information :
https://global.gotomeeting.com/join/830585453

Call in option:
Canada: +1 (647)497-9373
Access Code: 830-585-453

Vice President's Message

By Carla Drager

It is on these cold frigid days that I am happy we have the opportunity to host virtual ASHRAE meetings. We can all stay home wrapped ever so tightly in our blankets (or onesies but only a small percent of us would actually admit we have one and wear it) while still getting together to listen to a great presentation and learn something new. Shiny side up my friends.

This month, I am excited and honored to introduce our speaker, Angela Jamieson. Angela has travelled the world with her engineering career, returning to Saskatoon to raise her family. For the last 7 years, she has been involved with ceiling mounted UV-C systems. The pandemic has brought the issue of air purification to the fore and she has most notably worked with Dr. John Conly, MD, CM at the Foothills Medical Centre in Calgary, outfitting one of their COVID wards, hematology ward and tissue transplant area. They will soon install in a second COVID ward. She loves sharing her knowledge of this technology and passionately believes in the importance of bringing awareness of air purification in all areas where people gather. Angela's presentation will cover the following:

"The COVID-19 pandemic has highlighted the importance of healthy buildings and the need for air purification. This presentation will share the research on how to clean the air through the understanding of airborne transmission and particle behaviour and demonstrate the new generation of in room ceiling mounted UV-C systems; the background of the science, and application for a well-rounded infection control procedure."

- Angela Jamieson

Next month we have a very special virtual visit from our ASHRAE president Chuck Gulledge. This meeting will be held on Tuesday March 9 at 12:00 pm. Please save the date!

Look forward to seeing everyone.

Student Activities Chair

By Marla Torwalt

In previous years we've had a lot of success holding resume review events for the U of R ASHRAE student branch. We'd like to hold this event again in 2021 with a few adjustments. This year instead of having the event at a single day and time you would be matched up with a few students and can set up a virtual meeting that works with both your schedules to give resume and interviewing advice. Please contact me at m.torwalt@mac-eng.ca if you are interested in participating in this event or have any questions!

Young Engineers in ASHRAE (YEA)

By Tyler Gamble

We had a great first event in January that was enjoyed by all. We'll be looking to do more online events in the coming weeks so keep your eyes open for those announcements on our YEA Facebook page (search YEA - ASHRAE Regina Chapter) or through our chapter emails.

ASHRAE Issues Statements on Relationship Between COVID-19 and HVAC in Buildings

IN-ROOM AIR CLEANER GUIDANCE FOR REDUCING COVID19 IN AIR IN YOUR SPACE/ROOM

What is an In-Room Air Cleaner?
An in-room air cleaner is installed within occupied space rather than in an HVAC system. They are also known as portable, stand-alone, plug-in, or room air cleaners or as air purifiers. In-room air cleaners come in several types and sizes ranging from miniature desktop units to portable units designed to be operated on the floor or tabletop, to larger fixed units that can be permanently installed on ceilings, walls, or floors. In some cases, larger fixed units use ducts for air distribution across larger spaces.
In-room air cleaners may contain one or more technologies designed to remove or inactivate air contaminants. Media filters, including high efficiency particulate air (HEPA) filters, can remove particles, including those containing viruses and other microorganisms. UV-C (ultraviolet light in the germicidal wavelengths) kills or inactivates viruses and microorganisms to make them non-infectious but does not remove them from the air. Technologies such as ionizers, UV-PCO, and many called by other names may claim to remove or destroy multiple types of contaminants but may convert them to other compounds that might be harmful. These technologies are designated by CDC as emerging technologies without an established body of evidence reflecting proven efficacy under as-used conditions. For more information, see the Epidemic Task Force Filtration & Disinfection Guide: https://www.ashrae.org/file%20library/technical%20resources/covid-19/ashrae-filtration_disinfection-c19-guidance.pdf

When should in-room air cleaners be used? When HVAC equipment does not meet ASHRAE recommendations for ventilation and filtration, removal of contaminants near a source is needed, or where higher risk activities occur.

What do I need to know to choose an In-Room air cleaner?

1. Contaminant(s) to be controlled - Airborne virus particles can be captured or inactivated.
2. Space size - How much floor area is served? What is the ceiling height?
3. Space layout - How is the space arranged? Is there power access? Are there safety issues?
4. Noise - How much noise is acceptable? Is a noise rating at a specific fan

speed reported for the device?

5. Air distribution - How is air distributed in the space? Can the air cleaner be placed so its air intake is unobstructed by furniture and its outlet is able to move air as far as possible before being deflected or drawn into a return or exhaust grille. Multiple units may be a better option than one.
6. Ventilation (outdoor air) - How much comes in through HVAC system or windows? If unknown, assume none.
7. Amount of clean air needed - What flow rate of clean air is needed? Is there a target for the clean-air equivalent number of air changes per hour (ACH) needed between ventilation and filtration combined (e.g., 3, 6, or 12 ACH equivalent)?

Example of how to choose the right size: A 45 x 20 ft (14 x 6 m) room (900 ft2 [84 m2]) classroom with 9 ft (3 m) ceilings (8100 ft3 [229 m3]) has a HVAC system with a supply airflow rate of 1,200cfm (0.57 m3/s) of which 350 cfm (0.17 m3/s) is outdoor air and a MERV 8 filter. The HVAC system provides 2.6 ACH of outdoor air. Since the MERV 8 is ~35% efficient for 1-6 µm particles (where most SARS-CoV-2 is assumed to be present), the HVAC system airflow of 850 cfm of recirculated air provides 2.2 equivalent ACH. The owner wants 6 equivalent ACH total. Therefore, the in-room device needs to provide about 1 .2 equivalent outdoor ACH, which for this space would need to be 165 cfm (0.08 m3/s) clean air delivery rate (CADR) at a fan speed that meets the space noise level target of < NC 30/40 dBA for a classroom.

How do I select the right one? In the preceding example, a small device will do. Search for an in-room air cleaner that:

1) Confirm the CADR of the unit is equal to or higher than needed (165 cfm in the example above) at the fan speed and associated noise level that is acceptable in the space.
2) Removes particles or inactivates viruses. A HEPA air cleaner or high MERV (Minimum Efficiency Reporting Value) of 13 or more is recommended.
3) Check for additional technologies you do not want or need. Avoid added technologies that may cause problems or costs more to maintain.
4) Check for noise/sound levels (decibel or DBA), The unit may have a high speed and lower speed options. You may consider buying one to run at a lower speed some or most of the time.
5) Confirm that you can locate the unit in your space without the air inlet or outlet being blocked or causing gusts of air that may reintroduce previously settled dust from surfaces or cause discomfort.
6) Look for prices and availability. Be sure to check on the prices and expected lifetimes for replacement filters.

FOR MORE INFORMATION: https://www.epa.gov/indoor-air-quality-iaq/air-cleaners-and-air-filters-home
Noise Calculation Tools: https://www.noisemeters.com/apps/db-calculator/
And http://www.sengpielaudio.com/calculator-spl.htm

Meeting - February 17, 2021

Time – 12:00 – 12:50 presentation
12:40 – 1:00 Regina Chapter

Presenter – Angela Jamieson, P. Eng.

Topic – The COVID-19 pandemic has highlighted the importance of healthy buildings and the need for air purification. This presentation will share the research on how to clean the air through the understanding of airborne transmission and particle behaviour and demonstrate the new generation of in room ceiling mounted UV-C systems; the background of the science, and application for a well-rounded infection control procedure

Location: GoTo Meeting - Online
https://global.gotomeeting.com/join/830585453

Access Code: 830-585-453

Dial In Using your Phone: US - +1 (571) 317-3116 ; Canada - +1 (647) 497-9373

AGENDA

Introduction
The COVID-19 world
Cleaning the Air
- Airborne transmission
    - Particles

GUV/UV-C: What is it?
Background: Upper Room GUV systems
New Generation: Ceiling Mounted UV-C
    - Background of the science
    - Features
    - Applications

How Ceiling Mounted UV-C compares
Summary
Discussion & Questions

Next Meeting in March 2021
Topic: TBD
Date & Time TBD

Other Chapter Meetings will be announced in future newsletter

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Cailin MacPherson
MacPherson Engineering Inc.
c.noll@mac-eng.ca

Past President & Research Promotion
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pierre-andre.ranger@jci.com

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Johnson Controls Canada LP
carla.drager@jci.com

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Stantec
Nathan.cross@stantec.com

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Chris Best
RJ England Consulting Ltd.
chris@rjengland.com

Student Activities
Marla Torwalt
MacPherson Engineering Inc.
m.torwalt@mac-eng.ca

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MacPherson Engineering Inc.
b.lulik@mac-eng.ca

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Cypress Sales Partnership
j.thomas@cypresssales.com

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HDA Engineering Ltd.
cklatt@hdaeng.com

YEA (Young Engineers in ASHRAE) Chair
Tyler Gamble
Canature Water Group
tyler.gamble@canaturewg.com

Diversity in ASHRAE Chair
Henry Reynoso
Refrigerative Supply
henryr@rsl.ca

Communications & Newsletter
Patrich Costa-Muresan
Government of Saskatchewan
patrich.costamuresan2@gov.sk.ca

Contact us at:
ashraeregina@gmail.com

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

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