COVID-19 Mini-Series – Part 5

Introduction
Daniel Coakley, Secretary
13th August 2020
<table>
<thead>
<tr>
<th>Agenda</th>
<th>Topic</th>
<th>Speaker</th>
</tr>
</thead>
</table>
| 13:00 – 13:05 | Introduction  
- Housekeeping  
- COVID-19 Response  
- ASHRAE HQ Resources  
- ASHRAE Learning Institute (ALI) | D. Coakley       |
| 13:05 – 13:45 | “The Impact of the Outdoor Environment on Natural and Mechanical Ventilation Performance” | J. Gallagher     |
| 13:45 – 13:55 | Q&A                                  |                  |
| 13:55 – 14:00 | Closing Announcements  
- ASHRAE IAQ 2021 Conference  
- Technical Committees | D. Coakley       |
Questions & Feedback

Questions
- Please use the ‘Questions’ tab to ask any questions related to today’s presentation.
- You may also use the ‘Chat’ function.
- If you are having difficulty, you can send your questions during / after the seminar to: secretary@ashrae-ireland.org

Handouts
- Presentation material available in handouts tab
- Also on our website (Webinars Page)

Survey
- Would you like further information?
- How would you rate today’s presentation?
- Additional feedback / questions?
Our Response to COVID-19

- ASHRAE Ireland has formed a new **COVID-19 sub-committee** specifically focused on gathering and disseminating guidance for Ireland.
- Hosting this mini-series of **technical webinars** on the theme of tackling spread of airborne infectious diseases.
- Running a series of **short technical articles** from expert members of ASHRAE and invited speakers.
This 8-part technical mini-series of technical webinars brings together a range of experts covering a breadth of topics in the context of COVID-19 and mitigation of spread of airborne infections in the built environment. Topics include: indoor air quality (IAQ), building monitoring, facility management, ventilation, filtration and air-cleaning. The webinars are free and open to all to attend.

Dr. Parag Rastogi (18th June)
*Lead Building Physicist, Arbnco*

Michael Curran (2nd July)
*NUI Galway and CIBSE Ireland*

Prof. Bill Bahnfleth (16th July)
*PSU & Chair, Epidemic Task Force*

Dr. Stephanie Taylor M.D. (30th July)
*Harvard Medical School*

Dr. John Gallagher (13th August)
*Trinity College Dublin*

27th August

10th September

24th September
ASHRAE HQ Resources

- **Free Technical Resources (Regularly updated)**
  - [https://www.ashrae.org/covid19](https://www.ashrae.org/covid19)
  - Topics include: General guidance for HVACS, Building Re-opening; Filtration / Disinfection; Transportation.
  - Residential, Commercial, Healthcare, Schools and Universities.
- **ASHRAE Epidemic Task Force**
  - Over 100 expert members ([Roster](https://www.ashrae.org/)
  - Q&A: [COVID-19@ashrae.org](mailto:COVID-19@ashrae.org)
- **Relevant Position Documents**
  - [ASHRAE Position Document on Infectious Aerosols](https://www.ashrae.org/)
  - [ASHRAE Position Document on Airborne Infectious Diseases](https://www.ashrae.org/)
- **ASHRAE Literature Access** - [Link](https://www.ashrae.org/)
  - ASHRAE Handbooks
  - Standards and Guidelines
  - ASHRAE technical journal articles and presentations
- **ASHRAE Learning Institute (ALI)** - [Link](https://www.ashrae.org/)
  - Free Instructor-lead training courses.
  - [Building Re-opening webinars for Europe (FREE)](https://www.ashrae.org/)
<table>
<thead>
<tr>
<th>Course Description</th>
<th>Start Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEW! An Introduction to ASHRAE Existing Building Commissioning Process</td>
<td>10 Sep 2020</td>
</tr>
<tr>
<td>NEW! Humidity Control: Avoiding Five Common Design Problems</td>
<td>22 Sep 2020</td>
</tr>
<tr>
<td>High-Performance Building Design: Applications and Future Trends</td>
<td>23 Sep 2020</td>
</tr>
<tr>
<td>NEW! Advanced High-Performance Building Design: Key Concepts for Lifelong Building Sustainability</td>
<td>24 Sep 2020</td>
</tr>
<tr>
<td>NEW! Evaluating Your HVAC System’s Readiness to Mitigate the Spread of SARS-CoV-2</td>
<td>30 Sep 2020</td>
</tr>
<tr>
<td>Variable Refrigerant Flow Systems: Design and Applications</td>
<td>06 Oct 2020</td>
</tr>
<tr>
<td>NEW! Health Impacts of Indoor Air Extraction, Ventilation, and Filtration – Same or Different?</td>
<td>08 Oct 2020</td>
</tr>
<tr>
<td>Updated! Fundamentals of Ultraviolet Germicidal Irradiation (UVGI) for Air and Surface Disinfection</td>
<td>12 Oct 2020</td>
</tr>
<tr>
<td>NEW! The Commissioning Process and Stakeholder Management</td>
<td>13 Oct 2020</td>
</tr>
<tr>
<td>NEW! Smart Grid Systems, Applications and Integration with the Built Environment</td>
<td>14 Oct 2020</td>
</tr>
<tr>
<td>NEW! Hospital HVAC – Infection Mitigation, Comfort, Performance</td>
<td>20 Oct 2020</td>
</tr>
<tr>
<td>Humidity Control II: Real-World Problems and Solutions</td>
<td>22 Oct 2020</td>
</tr>
<tr>
<td>Guideline 36: Best in Class HVAC Control Sequences</td>
<td>09 Nov 2020</td>
</tr>
<tr>
<td>Updated! Laboratory Exhaust Stacks: Safe and Energy Efficient Design</td>
<td>03 Dec 2020</td>
</tr>
<tr>
<td>Updated! Successfully Managing the Risk of Legionellosis Using Standard 188-2018</td>
<td>08 Dec 2020</td>
</tr>
<tr>
<td>Avoiding IAQ Problems</td>
<td>15 Dec 2020</td>
</tr>
</tbody>
</table>
This seminar focuses on outdoor environment and how it affects the performance of both natural and mechanical ventilation in buildings. With the increased recognition of SARS-CoV-2 transmission via aerosol droplets, natural and mechanical ventilation systems need to be harmonized to ensure that buildings (offices, schools, Universities, etc.) minimize the risk of transmission in enclosed spaces. The role of natural ventilation openings in particular is affected by outdoor environmental conditions over the course of a day or across the changing seasons. Therefore, how can we ensure air movements inside a building provides adequate ventilation?

**About the Speaker:** Dr. John Gallagher is Assistant Professor in the School of Engineering in Trinity College Dublin and is a Principal Investigator in their specialist Air Pollution Research Group. His work over the past twelve years has focused on developing innovative passive air pollution control systems, adopting the 3M (Measurement, Modelling and Mitigation) approach to inform effective designs. His research is underpinned by a low-carbon and resource efficient agenda, aligning with the circular economy agenda and balancing technical, economic and environmental factors in the process. In 2018, he was runner-up in the Horizon Prize on Materials for Clean Air from the European Commission’s DG R&I. Currently, Dr Gallagher is currently involved in several National (e.g. SEAI) and European (e.g. H2020) projects on passive ventilation and environmental quality design solutions, and is working with national and international partners to improve air quality in the built environment.
“The Impact of the Outdoor Environment on Natural and Mechanical Ventilation Performance”

Dr. John Gallagher
Assistant Professor in Environmental Systems
Trinity College Dublin
Closing Announcements
ASHRAE Announces IAQ 2020 New Conference Dates and Call for Papers

ASHRAE has announced that the IAQ 2020 Conference in Athens, Greece, will be postponed until September 13-15, 2021. A new call for papers also has been announced for the conference. The deadline for abstract submissions is December 21.

Organized by ASHRAE and the Air Infiltration and Ventilation Centre (AIVC), the theme of the conference, “Indoor Environmental Quality Performance Approaches,” focuses on the metrics, systems, sensors and norms necessary to implement performance approaches.

“Indoor Air Quality (IAQ) has been the core of ASHRAE’S IAQ series of conferences for the past 30 years,” said Max Sherman, co-chair of IAQ 2020. “This conference has expanded from only covering indoor air quality concerns, to exploring indoor environmental quality which includes indoor air pollution, thermal conditions, acoustics and illumination and their interactions. The COVID19 crises has required us to hold IAQ2020 one year later but allowed us to expand the scope further to include IAQ in a post-COVID world.”

In addition to the original conference topics, the conference steering committee is seeking papers related to the scientific challenges that the world faces following the COVID-19 pandemic.

Authors have the option to submit either a conference paper or an extended abstract and to state their preference for either an oral or poster presentation. Submissions are due December 21, 2020. If accepted, complete manuscript submissions are due April 19, 2021. For more information, visit ashrae.org/IAQ2020.

TOPICS:
- Health and Well-being: Appropriate technical and operational definitions
- Performance Metrics: For all aspects of IEQ
- Interactions: Interactions between IEQ parameters
- Occupant Behavior: How behavior impacts IEQ and how IEQ impacts behavior - psychological dimensions of IEQ
- Smart Sensors and Big Data: Sensor properties, data management, cybersecurity, applications
- Smart Controls: Equipment properties, commissioning, equivalence
- Resilience and IEQ: Responding to climate change and disasters
- Ventilation: Mechanical, passive, natural and hybrid systems
- Air Tightness: Trends, methods and impacts
- Thermal Comfort: Dynamic approaches, health impacts and trends
- Policy and Standards: Trends, impacts, implications
- Role of ventilation and building airtightness in epidemic preparedness
- Filtration and disinfection options to control COVID19.
- Face-covering impacts on indoor air quality
- HVAC and IEQ in a post-COVID world
Technical Committees (cont.)

Full List - https://www.ashrae.org/technical-resources/technical-committees/complete-list-of-tcs-with-home-pages

SECTION 1.0  FUNDAMENTALS AND GENERAL
SECTION 2.0  ENVIRONMENTAL QUALITY
SECTION 3.0  MATERIALS AND PROCESSES
SECTION 4.0  LOAD CALCULATIONS AND ENERGY REQUIREMENTS
SECTION 5.0  VENTILATION AND AIR DISTRIBUTION
SECTION 6.0  HEATING EQUIPMENT, HEATING & COOLING SYSTEMS AND APPLICATIONS
SECTION 7.0  BUILDING PERFORMANCE
SECTION 8.0  AIR-CONDITIONING & REFRIGERATION SYSTEM
SECTION 9.0  BUILDING APPLICATIONS
SECTION 10.0  REFRIGERATION SYSTEMS
SECTION MTG  MULTIDISCIPLINARY TASK GROUPS
Technical Committees (cont.)

Ventilation Requirements and Infiltration
ASHRAE Technical Committee 4.3

Scope of TC 4.3
TC 4.3 is concerned with ventilation requirements and the analysis of infiltration, airflow around buildings, exhaust, and the re-entry of exhaust, including their integration interactions with indoor air quality and energy calculations for buildings and HVAC system design and operation performance and energy consumption.

Handbook

The ASHRAE Handbook is published via a series of four volumes, one of which is revised each year ensuring that no volume is older than four years. The Handbook can be purchased at the ASHRAE Bookstore by clicking on this link. TC 4.3’s chapters in the Handbook are:

Fundamentals Volume: Ventilation & Infiltration Chapter
This chapter addresses commercial and institutional buildings, where ventilation concerns usually dominate (though infiltration should not be ignored), and single- and multifamily residences, where infiltration and exhaust have always been considered most important but intentional ventilation has received increased attention in recent years. Basic concepts and terminology are presented in the chapter before more advanced analytical and design techniques are given. Ventilation of industrial buildings is covered in Chapter 32 of the 2019 ASHRAE Handbook—HVAC Applications. However, many of the fundamental ideas and terminology covered in this chapter can also be applied to industrial buildings.

Fundamentals Volume: Airflow Around Buildings Chapter
This chapter provides basic information for evaluating wind-flow patterns, estimating wind pressures, and identifying problems caused by the effects of wind on intakes, exhausts, and equipment. In most cases, detailed solutions are addressed in other chapters of the HVAC Applications and HVAC Systems and Equipment volumes.

The ASHRAE Handbook – Fundamentals volume may be purchased from the on-line bookstore by clicking on the highlighted text.
## ASHRAE Ireland Board 2020/21

**M. Geraghty, Entropic**  
President

**K. Goodman, Jacobs**  
Vice-President

**P. McEnroy, Tandem**  
Treasurer

**D. Coakley, MERCE-UK**  
Secretary

<table>
<thead>
<tr>
<th>Committee</th>
<th>Function</th>
<th>Chair</th>
<th>Vice-Chair</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTTC*</td>
<td>Events, Talks, DLs</td>
<td>Tony O’Keeffe</td>
<td>Michael Dawkins</td>
</tr>
<tr>
<td>Electronic Communications*</td>
<td>PR, Website, Articles, Publications</td>
<td>Daniel Coakley</td>
<td>David Keogh</td>
</tr>
<tr>
<td>Membership Promotion*</td>
<td>Membership, Sponsors, Finance</td>
<td>Frank Caul</td>
<td></td>
</tr>
<tr>
<td>Student Activities*</td>
<td>Student Activities</td>
<td>Adam O’Donovan</td>
<td>Conor Deane</td>
</tr>
<tr>
<td>Young Engineers ASHRAE (YEA)*</td>
<td>Young Members</td>
<td>Conor Deane</td>
<td>Daniel Coakley</td>
</tr>
<tr>
<td>Grassroots Government Activities*</td>
<td>CIBSE, EI, IBPSA, IGBC, IRI, SEAI</td>
<td>Ken Goodman</td>
<td></td>
</tr>
<tr>
<td>Research Promotion*</td>
<td>Fundraising for RP campaign</td>
<td>Martin O’Brien</td>
<td></td>
</tr>
<tr>
<td>Nominating*</td>
<td>Succession Planning</td>
<td>Donal Finn</td>
<td></td>
</tr>
<tr>
<td>Clean Rooms</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refrigeration</td>
<td></td>
<td>Seamus Kerr</td>
<td></td>
</tr>
<tr>
<td>Honors and Award</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Required ASHRAE Committees

[http://ashrae-ireland.org/about/](http://ashrae-ireland.org/about/)
Stay in touch!

https://twitter.com/ASHRAE_IRL
https://www.linkedin.com/company/ashrae-ireland
https://www.youtube.com/channel/UCUYjYdZdYAH43Cq-9bEwpsA
Thanks to our sponsors & supporters

Supported By:

[Logos of sponsors and supporters]
Contact:
Daniel Coakley (secretary@ashrae-ireland.org)
Web: http://ashrae-ireland.org/covid-19/