



Newsletter

Air Infiltration and Ventilation Centre

Foreword



Welcome to the March 2022 edition of the AIVC newsletter!

Following 2 years of hosting virtual events, we are now eager to return to in-person conferences and face to face networking. We are confident that precautions will keep you all attendees safe.

The date of the 41st AIVC- ASHRAE IAQ joint conference is a few weeks away and taking place in Athens, Greece on May 4-6, 2022.

What's more, the 42nd AIVC conference: "Ventilation Challenges in a Changing World" will be held on October 5-6, 2022 in the city of Rotterdam, the Netherlands. Submit your abstracts by March 21, 2022!

Last but not least, new publications and feedback from recent webinars and podcasts are included in the current edition.

We wish you a pleasant reading and look forward to seeing you in our future events. We would also like to encourage you to visit our [website](#), follow us on [twitter](#) and [LinkedIn](#) and subscribe to our monthly newspaper "Energy Efficiency and Indoor Climate in Buildings".

Arnold Janssens & Peter Wouters, Operating Agents, AIVC



no 21

March 2022

4 - 6 May 2022 – 41st AIVC - ASHRAE IAQ joint conference in Athens, Greece

The conference "IAQ 2020: Indoor Environmental Quality Performance Approaches Transitioning from IAQ to IEQ", organized by ASHRAE and AIVC, will be held in Athens, Greece on 4-6 May 2022. The conference will also be the 9th TightVent and 7th venticool conference.

Indoor Air Quality (IAQ) has been the core of ASHRAE'S IAQ series of conferences for the past 30 years. This conference will expand from Indoor Air Quality to Indoor Environmental Quality (IEQ). IEQ includes air quality, thermal comfort, acoustics, and illumination and their interactions. The particular focus of this conference is on performance approaches including the metrics, systems, sensors and norms necessary to implement them..

Conference 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

Keynote Speakers include: Richard de Dear, Ph.D., Director, Indoor Environmental Quality Laboratory, University of Sydney • Mariana Figuero, Director of the Lighting Research Center, Rensselaer Polytechnic Institute • Dr. Benjamin Jones, Associate Professor, University of Nottingham • Cath Noakes, PhD, FIMEchE, FIHEEM, Professor of Environmental Engineering for Buildings, University of Leeds • Stephanie Taylor MD, M Architecture, CIC, FRSPH(UK), MCABE, Taylor Healthcare Consulting, Inc.

For more information, please visit: <https://www.ashrae.org/conferences/topical-conferences/indoor-environmental-quality-performance-approaches> or contact: hblauridson@ashrae.org

In this issue

Foreword

4 - 6 May 2022 – 41st AIVC - ASHRAE IAQ joint conference in Athens, Greece

5 - 6 October 2022 – 42nd AIVC - 10th TightVent- 8th venticool conference in Rotterdam, Netherlands

AIVC Webinars – April to November 2021

AIVC's latest publications

ASHRAE Position Document on Indoor Carbon Dioxide

ISIAQ/IEQ-GA podcasts

AIVC List of Board Members



Air Infiltration and Ventilation Centre



5 - 6 October 2022 – 42nd AIVC - 10th TightVent- 8th venticool conference in Rotterdam, Netherlands

The 42nd AIVC conference: "Ventilation Challenges in a Changing World" will be held in the city of Rotterdam, the Netherlands together with the 10th TightVent and the 8th venticool conferences on October 5-6, 2022.

Conference Scope

More than ever in the past, climate change and the transition to carbon neutrality are at the center of many countries' policies and research programmes. The building sector plays a crucial role in achieving these goals, considering the carbon emissions attributed to buildings' construction and operation, and its potential for better energy performance. At the same time the COVID-19 crisis has emphasized the need to improve indoor air quality (IAQ) and ventilation in our buildings to reduce the risks of airborne virus transmission. All these challenges require a transformation of the existing building stock that at the same time achieves better IAQ and lowers environmental impact.

In 2022 the Air Infiltration and Ventilation Centre organizes its first international conference since the beginning of the COVID-19 crisis. Therefore the conference organizers want to pay specific attention to the role of ventilation and infiltration in building decarbonization, and improvement of indoor air quality including epidemic preparedness. How can design, construction and renovation practices, innovative and digital technologies help in today's challenges?

Conference Concept

The conference will consist of 3 parallel sessions largely devoted to:

- Smart ventilation, Indoor Air Quality (IAQ) and health
- Building and ductwork airtightness
- Ventilative cooling – Resilient cooling

The conference will consist of a mixture of

- Well prepared and structured sessions focused on the conference topics
- Presentations upon invitation
- Presentations from the Call for papers
- 90 seconds industry presentation

Conference Topics

• Smart ventilation, IAQ and health:

- o Role of ventilation in building decarbonization and epidemic preparedness
- o Ventilation reliability: performance verification and durability
- o IAQ impacts from outdoor pollutants, indoor cooking and combustion
- o Combining ventilation and air cleaning for acceptable IAQ
- o The role of consumer IAQ sensors
- o Model based data analytics and control strategies for smart ventilation
- o Building Information Modelling (BIM), Life Cycle Assessment (LCA) and ventilation systems

• Building and ductwork airtightness:

- o Role of airtightness in building decarbonization and epidemic preparedness

- o Energy and IAQ impact of envelope and ductwork leakage
- o Innovative measurement and airtightness techniques
- o Compliance schemes
- o Long-term performance: durability of airtightness

• Ventilative cooling - Resilient cooling:

- o Role of ventilative and resilient cooling in building decarbonization and epidemic preparedness
- o Ventilative and resilient cooling in a changing climate
- o Implementation in standards, legislation and compliance tools
- o Control strategies and personal comfort control

Conference Organizers

The conference is an initiative from:

- the International Network on Ventilation and Energy Performance (INIVE) on behalf of the Air Infiltration and Ventilation Centre (AIVC), TightVent Europe (the Building and Ductwork Airtightness Platform), and venticool (the international platform for ventilative cooling); and
- TNO

This year, there is:

- A call for abstracts & papers for authors interested in the peer review of their papers (now closed).
- A call for abstracts & papers for authors not interested in the peer review of their papers (still open and due March 21, 2022). [Note: Only the submission abstract is peer reviewed]
- A call for topical sessions (now closed).
- A students' competition

Detailed information on registration is available at:

<https://aivc2022conference.org/registration/>

For more information, please visit the conference website at:

<https://aivc2022conference.org/>



Air Infiltration and Ventilation Centre

AIVC Webinars – April to November 2021

During the period April - November 2021, the Air Infiltration and Ventilation Centre (AIVC) organized 9 webinars.

1. 1 April 2021: Building ventilation: How does it affect SARS-CoV-2 transmission?
 - o 438 participants
 - o Organizer: AIVC & IEA EBC Annex 86
 - o Recordings & Slides available [here](#)
2. 8 April 2021: IAQ and Ventilation Metrics
 - o 267 participants
 - o Organizer: AIVC & IEA EBC Annex 86
 - o Recordings & Slides available [here](#)
3. 13 April 2021: Big data, IAQ and ventilation – part 1
 - o 271 participants
 - o Organizer: AIVC & IEA EBC Annex 86
 - o Recordings & Slides available [here](#)
4. 21 April 2021: Big data, IAQ and ventilation – part 2
 - o 166 participants
 - o Organizer: AIVC & IEA EBC Annex 86
 - o Recordings & Slides available [here](#)
5. 1 June 2021: Resilient Ventilative Cooling in practice
 - o 180 participants
 - o Organizer: AIVC & venticool with support from IEA EBC Annex 80, & the IEA-EBC Annex 62 .
 - o Recordings & Slides available [here](#)
6. 12 October 2021: Smart materials for energy efficient IAQ management
 - o 146 participants
 - o Organizer: AIVC & IEA EBC Annex 86
 - o Recordings & Slides available [here](#)
7. 8 November 2021: Impact of wind on airtightness test results
 - o 153 participants
 - o Organizer: AIVC & TightVent Europe
 - o Recordings & Slides available [here](#)
8. 23 November 2021: Emerging smart ventilation strategies for energy efficient IAQ management
 - o 194 participants

o Organizer: AIVC & IEA EBC Annex 86

o Recordings & Slides available [here](#)

9. 30 November 2021: Inspection of ventilation systems in new regulations in European countries

o 180 participants

o Organizer: AIVC & TightVent Europe

o Recordings & Slides available [here](#)

The full collection of past events' recordings and slides can be found [here](#) and in [AIVC's Literature List 36](#).

Check them out and subscribe to our [YouTube channel](#) to receive our latest video updates!

AIVC's latest publications

The AIVC is pleased to announce the release of 2 new AIVC publications!

[AIVC's Literature List no 36: Overview of Webinars in cooperation with TightVent Europe and venticool platforms](#) (January 2022).

This report is an overview of all AIVC webinars held since 2012, including information on each event with links to the online recordings and the pdfs to the presentations.

[AIVC's Technical Note no 69: 40 years to build tight and ventilate right: History of the AIVC](#) (February 2022).

This report provides information about the history of AIVC, its events and publications, its member countries and board members and collaborations with other organizations.

Both documents are freely accessible at: <https://www.aivc.org/resources/collection-papers/aivc-publications>.

ASHRAE Position Document on Indoor Carbon Dioxide

In March 2022, ASHRAE released a position document discussing the role of indoor CO₂ in the context of building ventilation and IAQ. The positions address the use of CO₂ as a metric of IAQ and ventilation, the impacts of CO₂ on building occupants, the measurement of CO₂ concentrations, the use of CO₂ to evaluate and control outdoor air ventilation, and the relationship of indoor CO₂ to airborne infectious disease transmission.

The document recommends research into the impacts of CO₂ on occupant health, comfort, and performance and on the application of indoor CO₂ concentrations in building operation, as well as the development of guidance on the measurement and practical application of CO₂ concentrations.

To download and read the full document please click [here](#).

For more information, contact Andrew Persily at andyp@nist.gov.

ANNEX 5



AIVC Literature List 36
Overview of Webinars
in cooperation with TightVent Europe and
venticool platforms

2012-2021

January 2022



AIVC's Literature List no 36: Overview of
Webinars in cooperation with TightVent
Europe and venticool platforms

ANNEX 5



AIVC Technical Note 69
40 years to build tight and ventilate right:
History of the AIVC

February 2022

AIVC's Technical Note no 69: 40 years to
build tight and ventilate right: History of
the AIVC



Air Infiltration and Ventilation Centre

**INDOOR
ENVIRONMENTS**
show

global research
to action

ISIAQ/IEQ-GA podcasts

The Indoor Environmental Quality Global Alliance IEQ-GA and ISIAQ (International Society of Indoor Air Quality and Climate) have partnered to create a unique video show and podcast - Indoor Environments- featuring important research that can enhance how we manage our built indoor spaces.

Indoor Environments is hosted by Bob Krell and Donald Weekes.

- **Episode-1** focuses on the indoor environmental quality in schools, with guests Pawel Wargocki and Froukje van Dijken
- **Episode-2** focuses on how the quality of water may be adversely affecting our indoor environments, with guests David Krause
- **Episode-3**, with Charles Weschler and Glenn Morrison, looks at how occupants themselves affect our indoor environments
- **Episode-4**, with Cheri Marcham discusses the ACGIH Bioaerosols Book, 2nd Edition, and the ACGIH Bioaerosols Committee's Activities
- **Episode-5**, with Karen Dannemiller and Brandon Boor, discusses indoor exposure to chemicals and microbes via dust and resuspension
- **Episode-6**, with Marwa Zaatari and William Bahnfleth, discusses an indoor air quality paradigm shift

More information can be found at:

<https://global.healthyindoors.com/c/indoor-environments>

AIVC • List of board members

Australia: Mat Santamouris, University of New South Wales • Riccardo Paolini, University of New South Wales

Belgium: Hilde Breesch, KU Leuven • Samuel Caillou, BBRI

China: Guoqiang Zhang, Hunan University • Zhengtao Ai, Hunan University

Denmark: Bjarne Olesen, Technical University of Denmark • Alireza Afshari, Danish Building Research Institute, Aalborg University

France: François Durier, CETIAT • Gaëlle Guyot, CEREMA

Greece: Dimitris A. Charalambopoulos, ASHRAE Hellenic Chapter • Alkis Triantafyllopoulos, ASHRAE Hellenic Chapter

Italy: Lorenzo Pagliano, Politecnico di Milano

Ireland: Simon Jones, Aereco • Marie Coggins, NUI Galway

Japan: Takao Sawachi, Building Research Institute • Yoshihiko Akamine, NILIM

Netherlands: Wouter Borsboom, TNO

New Zealand: Manfred Plagmann, BRANZ

Norway: Kari Thunshelle, SINTEF Byggforsk

Republic of Korea: Yun Gyu Lee, Korea Institute of Construction Technology • Jae-Weon Jeong, Hanyang University

Spain: Pilar Linares Alemparte, The Eduardo Torroja Institute for Construction Science - CSIC • Sonia García Ortega, The Eduardo Torroja Institute for Construction Science - CSIC

Sweden: Jan-Olof Dalenbäck, Chalmers University of Technology

UK: Benjamin Jones, University of Nottingham • Maria Kolokotroni, Brunel University London

USA: Andrew Persily, NIST • Iain Walker, LBNL

Operating agent

INIVE EEIG, www.inive.org, info@aivc.org

Arnold Janssens and Peter Wouters, operating agents • Maria Kapsalaki, senior consultant • Stéphane Degauquier

AIVC board guests

Francis Allard • Willem de Gids • Laszlo Fulop • Zoltan Magyar • Max Sherman • Hiroshi Yoshino

Representatives of organisations

Takao Sawachi, IEA EBC, www.iea-ebc.org

Pawel Wargocki, IEA EBC Annex 78, <https://annex78.iea-ebc.org/>

Peter Holzer, IEA EBC Annex 80, <http://annex80.iea-ebc.org/>

Jelle Laverge, IEA EBC Annex86, <https://annex86.iea-ebc.org/>

Carsten Rode, IEA EBC Annex 86, <http://annex86.iea-ebc.org/>

Jaap Hogeling, REHVA, www.rehva.eu

Donald Weekes, IEQ-GA, <https://ieq-ga.net/>

Jan Hensen, IBPSA, www.ibpsa.org

Ben Hughes, IJV, <https://www.tandfonline.com/loi/tjov20>