venticool
the platform for resilient ventilative cooling

Newsletter

No 16 ● JULY 2020

Foreword

The venticool platform was inaugurated in September 2012 to increase awareness on ventilative cooling and to foster exchanges in the field. From 2013 to 2019, venticool was the main communication and dissemination partner of IEA-EBC Annex 62 Ventilative Cooling and hosted the combined venticool-EBC annex 62 website. Following the official launch of the working phase of IEA EBC Annex 80 Resilient cooling of buildings in June 2019, venticool decided to broaden its scope in line with this new annex. An agreement was reached with the Annex 80 participants to implement an Annex 80 section on the venticool website, in addition to the Annex 62 dedicated section.
Venticool aims to play a major role in the ventilative and resilient cooling community with respect to the dissemination of information, either with its conferences, workshops & webinars, or with the material available on its website.
Please visit our website, follow us on twitter and LinkedIn and subscribe to our monthly newspaper "Energy Efficiency and Indoor Climate in Buildings" to find out more about our activities. We wish you a pleasant reading!

The venticool team

@venticool

Postponement of 41st AIVC - ASHRAE IAQ - 9th TightVent & 7th venticool joint conference in Athens, Greece

ASHRAE and AIVC, decided to postpone the IAQ 2020 Conference. It will be rescheduled in 2021 as a face-to-face conference in Athens, Greece. At this time, the 31 May deadline for submitting papers is suspended.

The decision to postpone the conference was made in large part by the results of the survey completed by some 170 authors:
– a majority (53%) said they are 'unsupportive' of attending the September 2020 conference in Athens and
–77% said they are 'supportive' of postponing the conference until next year.

The Steering Committee will be meeting in the next two weeks to determine the new date for the postponed conference and to develop a revised planning schedule for the papers. Stay tuned!

The conference "IAQ 2020: Indoor Environmental Quality Performance Approaches Transitioning from IAQ to IEQ", organized by ASHRAE and AIVC will take place in 2021 in Athens, Greece. 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.

In this issue

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

Keynote Speakers:

– Philomena Bluyssen, Professor of Indoor Environment, TU Delft;
– Richard de Dear, Ph.D., Director, Indoor Environmental Quality Laboratory, University of Sydney;
– Mariana Figuiero, Director of the Lighting Research Center, Rensselaer Polytechnic Institute;
– 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 meetings@ashrae.org.

IEA EBC Annex 80 Resilient Cooling for Buildings - Proceedings from the second Expert Meeting

The EBC Annex 80 held its second Expert Meeting on April 20th and 21st as its first fully web-based meeting. Over 50 participants from 15 countries took part in three online sessions schedule to take on the large time lag between the USA, Europe, Asia and Australia.

Cooperation of Annex 80 and INIVE
In the weeks before the meeting the Annex 80 represented by its Operating Agent Peter Holzer and INIVE and venticool represented by Peter Wouters signed a letter of consent to officially inaugurate their cooperation. As in the previous EBC Annex 62 on Ventilative Cooling, venticool implemented an Annex 80 section on their website compiling all the latest findings on resilient and ventilative cooling in one place. The new section of the website was launched in June.

Defining Resilience in Cooling
A major effort during the annex's first year has been defining resilience in terms of cooling for buildings. An extended review of scientific papers has been carried out by the international consortium of researchers under the lead of Wendy Miller from Queensland University of Technology. Risk management and natural hazard literature from diverse disciplines has been reviewed. The goal was to develop a conceptual framework for understanding the breadth, depth and scope of "resilient cooling" as a disaster risk management strategy to deal with temperature hazards. Disaster Risk Management for instance focuses on understanding and managing risk considering spatial scale and magnitude of impact. It describes the following stages: a) emergency, b) disaster, c) catastrophe, d) extinction event; The Sendai Framework (2015) for Disaster Risk Reduction on the other hand focuses on community vulnerability and resilience to the risk posed by the hazard. It describes four stages: 1) Understand the risk, 2) Strengthen risk governance, 3). Invest in risk reduction, 4) Enhance preparedness AND Build Back Better; The full paper "How can we define and measure "resilient cooling"? - A review and evaluation of resilience frameworks and criteria" has been submitted to the journal Applied Energy and is currently under review.

Assessment of Cooling Technologies
The progress of the assessment of cooling technologies and their aspects of resilience has been discussed at the meeting and the results will be published in the official Annex 80 State-of-the-Art Review as well as in a separate paper specifically dedicated to this subject. Chen Zhang from Aalborg University together with Ongun Berk Kazanci lead the group of scientists from seven different institutions which assesses technologies from the following fields of technology: a) Reduce heat loads to people and indoor environments, b) Remove heat from indoor environments, c) Enhance personal comfort apart from space cooling, d) Remove latent heat from indoor environments; So far the scope of the received reviews is vast. The content is now being condensed in order to achieve a publishable size of the review paper.
On November 5th and 6th all Annex 80 members will meet again for their 3rd Expert Meeting. As from present-day perspective it will again be held as remote meeting.
If you want to know more about the Annex please visit the website http://annex80.iea-ebc.org/
or contact Peter Holzer, operating agent of EBC Annex 80 at: peter.holzer@building-research.at

venticool
the platform for resilient ventilative cooling

Selected papers from the AIVC – TightVent-venticool 2019 Conference published at the April 2020 edition of the REHVA Journal

The April 2020 edition of the REHVA Journal has been released, including a selection of articles presented at the 40th AIVC – 8th TightVent & 6th venticool Conference, 2019 "From energy crisis to sustainable indoor climate – 40 years of AIVC" held in Ghent, Belgium on 15-16 October, 2019.

Specific articles include:

– Real-life ventilation filter performance in a city environment | *Joris Van Herreweghe (BBRI, BE), Samuel Caillou (BBRI, BE), Tom Haerinck (BBRI, BE), Johan Van Dessel (BBRI, BE)*
– Particle filtration in energy efficient housing with MVHR | *Gabriel Rojas (Salzburg University of Applied Sciences, Austria)*
– Cloud based large-scale performance analysis of a smart residential MEV system | *Bavo De Maré (Renson Ventilation, BE), Stijn Germonpré (Renson Ventilation, BE), Jelle Laverge (Ghent University, BE), Frederik Losfeld (Renson Ventilation, BE), Ivan Pollet (Renson Ventilation, BE), Steven Vandekerckhove (Renson Ventilation & KU Leuven, BE)*
– Assessment of mid-term and long-term building airtightness durability | *Bassam Moujalled (Cerema, FR), Sylvain Berthault (Cerema, FR), Andrés Litvak (Cerema, FR), Valérie Leprince (PLEIAQ, FR), Gilles Frances (Cetii, FR)*
– New findings on measurements of very airtight buildings | *Stefanie Rolfsmeier (BlowerDoor GmbH, DE)*
– Influence of horizontal mounted flue gas exhaust systems on indoor air quality | *Xavier Kuborn (BBRI, BE), Sébastien Pecceu (BBRI, BE)*

To download and read the full journal please visit: https://www.rehva.eu//rehva-journal/detail/02-2020

The REHVA & IEQ-GA Covid-19 taskforces

Since the outbreak of SARS-CoV-2 (coronavirus) in January 2020, health authorities worldwide have been focusing their efforts to contain its spread. At the same time, HVAC&R professionals have been trying to draw awareness on the significance of the airborne transmission of the virus and the role of increased ventilation.
This article provides specific information on the IEQ-GA & REHVA COVID-19 taskforce initiatives which were formed to provide relevant guidance during this pandemic.
The Indoor Environmental Quality – Global Alliance (IEQ-GA) set up the IEQ-GA COVID-19 Task Force consisting of representatives from its member organizations (ASHRAE, AIHA, REHVA, AIVC, ISHRAE, AiCARR & ACGIH) who have specific knowledge, capabilities and expertise in the field. The intention of this Task Force is to work together to develop consensus documents and position statements on behalf of the IEQ-GA. Its work and activities will continue to evolve as the COVID-19 pandemic spreads throughout the world.
Along this line, a webpage/section specifically dedicated to COVID-19 is now part of the IEQ-GA website .
This webpage provides information and position documents from the IEQ-GA's member organizations as well as Frequently Asked Questions (FAQs) in relation to COVID-19.
The Alliance also released a position paper supporting that airborne transmission of COVID-19 is sufficiently likely as a route of infection and that airborne exposure to the SARS-CoV-2 virus should be controlled by effective measures, including ventilation, filtration and air cleaning.
The REHVA- Federation of European Heating, Ventilation and Air Conditioning Associations - taskforce experts produced a COVID-19 Guidance Document, on how to operate and use building services in areas with a coronavirus outbreak to prevent the spread of coronavirus depending on HVAC or plumbing systems related factors. A summary of their recommendations follows: *secure ventilation of spaces with outdoor air; switch ventilation to nominal speed at least 2 hours before the building usage time and switch to lower speed 2 hours after the building usage time; at nights and weekends, do not switch ventilation off, but keep systems running at lower speed; ensure regular airing with windows (even in mechanically ventilated buildings); keep toilet ventilation 24/7 in operation; avoid open windows in toilets to assure the right direction of ventilation; instruct building occupants to flush toilets with closed lid; switch air handling units with recirculation to 100% outdoor air; inspect heat recovery equipment to be sure that leakages are under control; switch fan coils either off or operate so that fans are continuously on; do not change heating, cooling and possible humidification setpoints; do not plan duct cleaning for this period; replace central outdoor air and extract air filters as usually, according to maintenance schedule; regular filter replacement and maintenance works shall be performed with common protective measures including respiratory protection*.

Recordings & Slides from the webinar on Ventilative Cooling Design and Examples

The recordings and the slides of our webinar: "Ventilative Cooling – Design and examples" held on March 26th, 2020 and organised with the support of IEA-EBC annex 62 ventilative cooling and the venticool platform, and in cooperation with the Air Infiltration and Ventilation Centre, are available online. The full collection of past events' recordings and slides can be found at https://venticool.eu/venticool-events/webinars/.
Check them out and Subscribe to our YouTube channel to receive our latest video updates!

AIVC Literature List 34 on “Ventilative Cooling”

In April 2020, the Air Infiltration & Ventilation Centre released AIVC Literature List 34 “Ventilative Cooling”. The document is split into three main chapters including: papers & slides presented at AIVC & venticool annual conferences and publications produced during the operation of IEA-EBC annex 62; slides presented at workshops organized with the collaboration of venticool & IEA-EBC annex 62; and recordings from webinars organized with the collaboration venticool & IEA-EBC annex 62. Please click here to download and read the document.

IEA EBC annex 86 “Energy Efficient Smart IAQ Management for residential buildings"

On June 26, the Executive Committee of the IEA Energy in Buildings Technology Collaboration Platform approved the proposed collaboration project “Energy Efficient Smart IAQ Management for residential buildings" as IEA EBC annex 86. This annex will propose an integrated rating method for the performance assessment and optimization of energy efficient strategies of managing the indoor air quality (IAQ) in new and existing residential buildings. In the annex, experts from different fields including mechanical engineering, building science, chemistry, data science and environmental health will work together with other stakeholders towards consensus on the basic assumptions that underlie such a performance assessment and practical guidelines and tools to bring the results to practice. The goal is to accelerate the development of better and more energy efficient IAQ management strategies to address rapidly changing expectations of the home environment due to challenges such as peak oil, climate change or pandemics. For more information, please contact the Operating Agent, prof. Jelle Laverge (jelle.laverge@ugent.be)

venticool Partners

Diamond partners

NAVENTA NATURAL VENTILATION ASSOCIATION

VELUX®

Gold partners

Window Master® Fresh Air. Fresh People.

Associate partners

CIBSE

REHVA Federation of European Heating, Ventilation and Air-conditioning Associations

Covenant of Mayors for Climate & Energy

Platform facilitator

INIVE

To join venticool please visit: https://venticool.eu/venticool-contact/

What is ventilative cooling?

Ventilative cooling refers to the use of natural or mechanical ventilation strategies to cool indoor spaces. This effective use of outside air reduces the energy consumption of cooling systems while maintaining thermal comfort. The most common technique is the use of increased ventilation airflow rates and night ventilation, but other technologies may be considered as well. Ventilative cooling is relevant in a wide range of buildings and may even be critical to realize renovated or new NZEB.

What is venticool?

venticool is the international ventilative cooling platform launched in October 2012 to accelerate the uptake of ventilative cooling by raising awareness, sharing experience and steering research and development efforts in the field of ventilative cooling. The platform supports better guidance for the appropriate implementation of ventilative cooling strategies as well as adequate credit for such strategies in building regulations. The platform philosophy is to pull resources together and to avoid duplicating efforts to maximize the impact of existing and new initiatives.

Disclaimer

Conclusions and opinions expressed in contributions to the venticool Newsletter represent the author(s)’ own views and not necessarily those of venticool partners.

In line with the **European General Data Protection Regulation**, you can verify and modify the data we keep in our database for mailing as well unsubscribe.
See http://subscriptions.inive.org/.