



## Foreword

This edition of our bi-annual newsletter provides information on our latest achievements i.e., upcoming events, activities, initiatives etc. More specifically, it contains updates on the October 2021 expert meeting of the IEA EBC annex 80 on resilient cooling of buildings as well as feedback from the 4<sup>th</sup> meeting of the Advisory Board of Practitioners, an initiative of Annex 80 - venticool & AIVC.

Don't forget to mark your agenda for the following upcoming major events:

- 41<sup>st</sup> AIVC/ASHRAE IAQ – 9<sup>th</sup> TightVent – 7<sup>th</sup> venticool Conference on May 4-6, 2022, in Athens, Greece
- 42<sup>nd</sup> AIVC - 10<sup>th</sup> TightVent - 8<sup>th</sup> venticool conference on October 5-6, 2022, in Rotterdam, the Netherlands

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



## 5 - 6 October 2022 – 42<sup>nd</sup> AIVC - 10<sup>th</sup> TightVent- 8<sup>th</sup> venticool conference in Rotterdam, Netherlands

The 42<sup>nd</sup> AIVC conference: "Ventilation Challenges in a Changing World" will be held in the city of Rotterdam, the Netherlands together with the 10<sup>th</sup> TightVent and the 8<sup>th</sup> 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

## In this issue

- > Foreword
- > 5 - 6 October 2022 – 42<sup>nd</sup> AIVC - 10<sup>th</sup> TightVent- 8<sup>th</sup> venticool conference in Rotterdam, Netherlands
- > Proceedings from the 5<sup>th</sup> Expert Meeting of Annex 80 Resilient Cooling of Buildings
- > Feedback from the 4<sup>th</sup> meeting of the Advisory Board of Practitioners for Annex 80 & venticool & AIVC
- > 4-6 May 2022, Conference, Athens | 41<sup>st</sup> AIVC – ASHRAE – IAQ – 7<sup>th</sup> venticool & 9<sup>th</sup> TightVent joint Conference

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 presentations

### Conference Topics

- Smart ventilation, IAQ and health: Role of ventilation in building decarbonization and epidemic preparedness; Ventilation reliability: performance verification and durability; IAQ impacts from outdoor pollutants, indoor cooking and combustion; Combining ventilation and air cleaning for acceptable IAQ; The role of consumer IAQ sensors; Model based data analytics and control strategies for smart ventilation; Building Information Modelling (BIM), Life Cycle Assessment (LCA) and ventilation systems
- Building and ductwork airtightness: Role of airtightness in building decarbonization and epidemic preparedness; Energy and IAQ impact of envelope and ductwork leakage; Innovative measurement and airtightness techniques; Compliance schemes; Long-term performance: durability of airtightness
- Ventilative cooling - Resilient cooling: Role of ventilative and resilient cooling in building decarbonization and epidemic preparedness; Ventilative and resilient cooling in a changing climate; Implementation in standards, legislation and compliance tools; 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 resilient ventilative cooling); and

- TNO

### Important Dates

This year, there will be: 2 separate calls for abstracts & papers depending on whether the authors are interested in the peer review of their papers; a call for topical sessions; and a students' competition.

### Non-peer reviewed papers

- Abstracts Submission due: **March 21, 2022**
- Abstracts Acceptance Confirmation due: April 23, 2022
- Papers' Submission due: July 1, 2022

### Peer reviewed papers

- Abstracts Submission due: **January 10, 2022**
- Abstracts Acceptance Confirmation due: February 11, 2022
- Submission of Papers due: April 15, 2022
- Papers' notification of acceptance & review comments due: June 1, 2022
- Final Papers' Submission due: July 1, 2022

### Topical Sessions

- Proposal (description) Submission due: **January 10, 2022**
- Acceptance Confirmation due: February 11, 2022
- Final Description Submission due: March 25, 2022
- Submission of Papers or extended summary due: July 1, 2022

### Registration

- Registration opens: January 10, 2022
- Early Registration due: June 30, 2022
- Late Registration due: September 16, 2022

Detailed information & important deadlines for the 2 calls for abstracts can be found at:

<https://aivc2022conference.org/call->

[for-abstracts-papers/](https://aivc2022conference.org/call-)

Detailed information & important deadlines for the call for topical sessions can be found at: <https://aivc2022conference.org/call-for-topical-sessions/>

Detailed information for the students' competition can be found at:

<https://aivc2022conference.org/students-competition/>

For more information please visit the conference website at:

<https://aivc2022conference.org/>

## Proceedings from the 5<sup>th</sup> Expert Meeting of Annex 80 Resilient Cooling of Buildings

*Philip Stern, Institute of Building Research & Innovation, Austria*

The EBC Annex 80 held its fifth Expert Meeting on October 14<sup>th</sup> and 15<sup>th</sup> at Politecnico di Torino. For the first time in years, 24 participants from 9 countries attended the meeting in person. The meeting was held as hybrid meeting as not all participants had been allowed to travel to Italy.

### Results

The annex in the third year of its working phase continues to contribute to resilient cooling in the various fields of its mission statement. The definition and development of fundamentals like the definition of resilience and thermal conditions or generation of future weather files for building simulation is being finalised. While the assessment of cooling technologies is in progress the last phase of the annex will also focus on pushing technological boundaries. The definition of key performance indicators of resilient cooling, an important task of Annex 80, has progressed substantially. Three categories, each consisting of three levels of indicators expressing their specificity have been defined as follows:

- Comfort & health metrics
- Energy & environment metrics
- Socio-economic

Metrics for carbon emissions as well as exceedance hours for humidity will also be considered. During the upcoming months the collection of metrics will be finalised and shall be tested in the technology assessment, which will be carried out through dynamic simulations. For that purpose, the simulation task group created a methodology guideline to ensure high-quality comparable results across the numerous participating institutions.

### Dissemination

Members of the annex took the decision to actively contribute to upcoming conferences in 2022. The AIVC conferences in Athens and Rotterdam and the COBEE conference in Montreal, for instance, offer valuable opportunities to disseminate and share findings generated in the annex. It is planned to organise topical sessions on “resilient cooling” to foster the exchange with international experts of the scientific community. The Annex also published the following paper since last expert meeting: [“Resilient cooling strategies - a critical review and qualitative assessment”](#) Chen Zhang et al, Energy and Buildings.

Started in March the “Advisory Board of Practitioners of Resilient Cooling” meets on a regular basis to share their knowledge and experience on topics such as the definition of resilience as regards cooling, key performance indicators and metrics of resilient cooling and future weather data for building simulations. The board will meet again in spring and autumn of 2022 to exchange on the latest advances of

resilient cooling technologies.

On April 25<sup>th</sup> and 26<sup>th</sup> Annex 80 members will meet again for their 6<sup>th</sup> Expert Meeting. It will take place in Copenhagen, Denmark.

For further details and registration please refer to Philipp Stern at [philipp.stern@building-research.at](mailto:philipp.stern@building-research.at)

## Feedback from the 4<sup>th</sup> meeting of the Advisory Board of Practitioners for Annex 80 & venticool & AIVC

*Philip Stern, Institute of Building Research & Innovation, Austria*

On December 15<sup>th</sup>, Annex 80 scientists, practitioners, and planners as well as representatives from the building cooling associated industry gathered for the 4<sup>th</sup> meeting of the Advisory Board of Practitioners. This board, an initiative of Annex 80, AIVC and venticool, was founded to put results of scientific research into action by establishing strong ties to practitioners and to include their practical experience in future research projects.

Around 20 participants attended the meeting which dealt with the topic of “Future weather data & Heatwaves for building simulation”. After a brief opening & welcome by Peter Holzer – Annex 80 operating agent, Anaïs Machard (Annex 80 Weather data task group) from University of La Rochelle gave a presentation on “Generation of future weather data” followed by a presentation from Abantika Sengupta – KU Leuven which focused on a “Case study application of future weather data”. The participants were then split into

small groups and formed break-out sessions.

During the break-out sessions, questions such as the following were discussed:

- Do you apply future weather data in the evaluation of your design/ chosen cooling system already?
- Do you apply future weather data for sizing of cooling systems?
- Do you consider heat waves/ extreme heat events in your practice?
- Do you think your business/ products are prepared for such events?

Following a 20 min discussion among the different groups, the members rejoined to share their outcomes. Challenges have been identified concerning the implementation of long-term future proof measures. Increased resilience might not be an easy to convey reason for higher building costs yet. The need of future weather data for better understanding of events such as heatwaves has been broadly acknowledged. Annex 80 is offering the scientific basis for building evaluations through building simulations in several climatic zones.

### Next meetings

#### Meeting 05: March 30<sup>th</sup>, 2022

“Advances of cooling technologies (pt1)”

- Reduce heat loads to people and indoor environments
- Remove sensible heat from indoor environments
- Enhance personal comfort apart from space cooling
- Remove latent heat from indoor environments

#### Meeting 06: Autumn 2022

“Advances of cooling technologies (pt2)”

- Reduce heat loads to people and indoor environments
- Remove sensible heat from indoor environments
- Enhance personal comfort apart from space cooling
- Remove latent heat from indoor environments

If you are interested in joining the Board, please contact Philipp Stern at [philipp.stern@building-research.at](mailto:philipp.stern@building-research.at)



EBC Annex 80 5<sup>th</sup> Expert Meeting, October 14-15, Politecnico di Torino



# 4-6 May 2022, Conference, Athens | 41<sup>st</sup> AIVC – ASHRAE – IAQ – 7<sup>th</sup> venticool & 9<sup>th</sup> TightVent joint Conference

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 9<sup>th</sup> TightVent and 7<sup>th</sup> 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.

More information can be found at <https://www.ashrae.org/conferences/topical-conferences/indoor-environmental-quality-performance-approaches> or contact [hblauridson@ashrae.org](mailto:hblauridson@ashrae.org).

## 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. In 2020, venticool decided to broaden its scope towards resilient ventilative cooling.

The platform supports better guidance for the appropriate implementation of resilient 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. venticool joins forces with international projects (in particular IEA EBC annexes 62 (ventilative cooling) and, more recently, annex 80 (Resilient cooling for buildings)) and organizations with significant experience and/or well identified in the field of ventilation and thermal comfort like AIVC ([www.aivc.org](http://www.aivc.org)) and REHVA ([www.rehva.eu](http://www.rehva.eu)).

The platform has been initiated by INIVE EEIG with (International Network for Information on Ventilation and Energy Performance) with the financial and/or technical support of its partners.

## venticool Partners

### Diamond partners



### Gold partners



### Associate partners



### Platform facilitator



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

## Disclaimer

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the platform for resilient ventilative cooling