



## Foreword

More than 140 participants from 22 countries attended the 8<sup>th</sup> venticool-42<sup>nd</sup> AIVC & 10<sup>th</sup> TightVent Conference "Ventilation Challenges in a Changing World" held in Rotterdam, Netherlands on October 5-6, 2022. The December 2022 edition of our newsletter includes a summary of the "Resilient Ventilative Cooling" track of the conference with the main trends, ideas, considerations and conclusions drawn.

The upcoming 9<sup>th</sup> venticool conference: "Ventilation, IEQ and health in sustainable buildings" will be held in Copenhagen, Denmark together with the 43<sup>rd</sup> AIVC and the 11<sup>th</sup> TightVent conferences on October 4-5, 2023. Submit your abstract before January 9 OR March 20, 2023 (depending on whether you wish your paper to be peer reviewed)!

In this issue, you will also be informed on the October 2022 expert meeting of the IEA EBC annex 80 on resilient cooling of buildings.

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



## Feedback from the 42<sup>nd</sup> AIVC-10<sup>th</sup> TightVent & 8<sup>th</sup> venticool Conference: Summary of the "Resilient Ventilative Cooling" track

The AIVC – TightVent – venticool 2022 joint Conference "Ventilation Challenges in a Changing World", was held on 5-6 October 2022 in Rotterdam, The Netherlands. The event drew just over 140 participants – researchers, engineers & architects, policy makers or regulatory bodies, manufacturers & stakeholders and international organizations from 22 countries.

The programme included 3 parallel tracks of structured sessions with around 130 presentations covering the main conference topics namely: Smart Ventilation, Indoor Air Quality (IAQ) and Health; Building & Ductwork Airtightness; Ventilative cooling – Resilient cooling. A special session i.e. "90 seconds industry presentations" was also organized and devoted to the sponsors of the event. The event has also been a major discussion place for on-going international projects such as, the [IEA EBC annex 87](#) "Energy and Indoor Environmental Quality Performance of Personalized Environmental Control Systems", and the [IEA EBC Annex 80](#) "Resilient Cooling of Buildings").

The "Resilient Ventilative Cooling" track at the AIVC 2022 conference consisted of 30 presentations organized in 5 sessions, 3 of which were topical sessions with a number of invited presentations.

The article available [here](#) presents main trends, ideas, considerations and conclusions that emerged from the two days of the conference on this topic.

## In this issue

- > Foreword
- > Feedback from the 42<sup>nd</sup> AIVC-10<sup>th</sup> TightVent & 8<sup>th</sup> venticool Conference: Summary of the "Resilient Ventilative Cooling" track
- > 4-5 October 2023 – 43<sup>rd</sup> AIVC – 11<sup>th</sup> TightVent- 9<sup>th</sup> venticool conference in Copenhagen
- > IEA EBC Annex 80 Resilient Cooling of Buildings - Proceedings from the 7<sup>th</sup> Expert Meeting
- > Cooling buildings sustainably in Europe
- > FAQs related to ventilative cooling!
- > Recordings from the AIVC/ venticool Webinars of November & December 2022



## 4-5 October 2023 – 43<sup>rd</sup> AIVC – 11<sup>th</sup> TightVent- 9<sup>th</sup> venticool conference in Copenhagen, Denmark

The 9<sup>th</sup> venticool conference “Ventilation, IEQ and health in sustainable buildings” will be held on 4 & 5 October 2023 in Copenhagen, Denmark together with the 43<sup>rd</sup> AIVC & 11<sup>th</sup> TightVent conference. The conference will take place at the premises of Aalborg University Copenhagen.

### Conference Scope

As we spend most of our time in commercial and residential facilities, it is important for our society to look at how these spaces impact the environment and the people in them. This task is important for building and facility managers, maintenance managers, energy managers as well as expert and researcher concerned with adopting sustainable and healthy practices for an organization. From indoor environmental quality point of view, sustainable buildings prioritize the quality of life and the wellbeing of the buildings’ occupants and at the same time reduce negative environmental impacts. A building that, in its design, construction or operation, reduces negative impacts on our climate, also reduces their occupants’ risk of related health problems and provides a more pleasant indoor environment, as well as increases occupants’ satisfaction.

### 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 presentations from the call for papers and presentations upon invitation, organized in well prepared and structured sessions focused on the conference theme and topics. Some sessions will consist of presentations from the call for papers only, other sessions will be topical sessions with presentations proposed by a session organizer and by the organizing committee. The conference is combined with an exhibition by industry partners.

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; a students’ competition.

### 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) for ventilation and building services
- EPBD revision and impact on ventilation and IAQ
- Inspection, monitoring and maintenance of ventilation systems
- Circular economy and sustainability, green buildings

#### 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

- EPBD revision and impact on ventilation and IAQ
- Circular economy, sustainability and green buildings

#### 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
- EPBD revision and impact on ventilation and IAQ

### 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), the Building and Ductwork Airtightness Platform (TightVent Europe), and the platform for resilient ventilative cooling (venticool); and Aalborg University Copenhagen.

- Authors interested in the peer review of their papers should submit their abstracts by **January 9, 2023**.
- The deadline to submit proposals for topical sessions is **January 9, 2023**.

For further information and updates visit us at:

[www.aivc2023conference.org](http://www.aivc2023conference.org)

# IEA EBC Annex 80 Resilient Cooling of Buildings- Proceedings from the 7<sup>th</sup> Expert Meeting

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

The IEA EBC Annex 80 held its 7<sup>th</sup> Expert Meeting on 19-20 October 2022 at the University of Santa Catarina in Florianopolis, Brazil. 39 participants from 11 countries participated in the meeting. The annex is already in its reporting phase. Due to delays in the execution of field studies caused by consequences of the pandemic, the consortium agreed to extend its duration until September 2023. This decision has been reported to and adopted by the EBC Executive Committee in November.

## **Results**

The consortium is working on main deliverables now, Technology Profile Sheets, Resilient Cooling Guideline, the Field Study Report and Policy Recommendation Sheets.

Technology Profile Sheets summarize the technology assessment carried out in the dynamic simulation group and provide a well-structured collection of technology descriptions. They will support decision makers in the process of urban planning, building investment and building design. The profiles will provide well-structured information on resilient cooling options. Around 20 technologies will be covered following the list of technologies that have already been subject of the SOTAR.

The Resilient Guideline addresses practitioners and will provide useful information on the fundamentals such as the definition of the resilience concept, key performance indicators and future weather data as well as the implementation of resilient cooling strategies. The guideline will focus on the practical application of the concepts and results provided to give support for the design of resilient cooling of buildings.

During the assessment of national and international standards the

annex team has identified policy opportunities. These findings feed into the deliverable of Policy Recommendation Sheets, which will provide compact and useful information for organisations and policy makers. Members of subtask D are currently looking into channels of disseminating the results.

## **Dissemination**

Members of the annex attended the COBEE conference in Montreal and held a topical session at the AIVC 2022 conference in Rotterdam in September. Annex 80 members will hold another topical session on the outcomes of Annex 80 at the AIVC conference in Copenhagen in October 2023.

In September 2022, Annex 80 together with AIVC, venticool and INIVE held two webinars on “Examples of resilient cooling solutions” and “Case studies and policy recommendations”. The events were well attended, and the feedback received very positive. This series of webinars will continue in 2023 when the deliverables of Annex 80 will be published

On April 20-21, 2023 Annex 80 members will meet again for their 8<sup>th</sup> and final Expert Meeting. It will take place in Vienna, Austria.

For further Annex 80 related information please refer to Philipp Stern at: [philipp.stern@building-research.at](mailto:philipp.stern@building-research.at).

## **Cooling buildings sustainably in Europe**

*Source: European Environment Agency*

On November 10<sup>th</sup>, 2022 the European Environment Agency released the briefing: “Cooling buildings sustainably in Europe: exploring the links between climate change mitigation and adaptation, and their social impacts”.

The document explores the links between climate change adaptation and mitigation, and the health and social justice aspects of cooling Europe’s buildings. It focuses specifically on residential buildings.

### **Key messages**

- Heatwave events caused 77,000-129,000 deaths in the 32 EEA

member countries between 1980 and 2020, representing 86%-91% of fatalities caused by climate-related extreme events.

- Rising temperatures across Europe, an ageing population and increasing urbanisation make the population more vulnerable to heat. If no specific action is taken, this will lead to a rapid, uncontrolled increase in the use of inefficient active cooling systems, such as air conditioning, in buildings. This has social and environmental implications, while also increasing energy use.
- Europeans spend approximately 80%-90% of their time indoors. Buildings, as long-lasting structures, can protect occupants from the impacts of heat at low energy costs, if appropriately designed, constructed, renovated and maintained.
- The deep energy renovation of building envelopes can improve the resilience of buildings, reduce the amount of energy used for cooling and decrease greenhouse gas emissions.
- If active cooling is necessary (e.g. because of long heatwaves and/or critical health issues), cooling systems should be as efficient as possible and equitably accessible by vulnerable and other groups.
- Key elements of a sustainable cooling strategy include tailoring to local contexts, promoting urban cooling solutions, prioritising investment in passive cooling techniques, using active cooling systems rationally and moderately, and developing low-energy cooling systems that are suited to future warmer climates.
- The current EU policy landscape — including the EU’s renovation wave, ‘Fit for 55’ package of proposals, the EU climate adaptation strategy and the Mission on Adaptation to Climate Change — offers key opportunities to ensure sustainable cooling solutions, social justice and greater resilience. Taking into account future climate and cooling needs, energy efficiency renovation is of central importance to control future summer energy demand. The document is available at the European Environment Agency’s [website](#).

## FAQs related to ventilative cooling!

During the past few months, venticool partners have been working on extending the list of available Frequently Asked Questions (FAQs) related to ventilative cooling. A list of questions answered follows:

1. What is ventilative cooling?
2. Is ventilative cooling a good cooling strategy in all weather conditions?
3. Are there barriers/limitations for using ventilative cooling?
4. Does ventilative cooling make sense in a building with active cooling?
5. Does a simplified tool exist to predict the potential of ventilative cooling in early-design phase?
6. Does the Energy performance of buildings directive (EPBD) support the use of ventilative cooling?
7. What type of benefits can be obtained through ventilative cooling?
8. Is automatic control of ventilative cooling devices better than manual control?

All FAQs can be found [here](#).

## Recordings from the AIVC/venticool Webinars of November & December 2022

The recordings and the slides of the recent webinars “Dumb buildings with smart users? Linking building performance & human well being” held on November 15<sup>th</sup>, “Use of Super Cool Materials for Efficient Building Ventilation and Heat Mitigation” held on November 29<sup>th</sup> & “IEA EBC Annex 87: Energy and Indoor Environmental Quality Performance of Personalised Environmental Control Systems (PECS)” held on December 12<sup>th</sup> are now available online!

The full collection of past events’ recordings and slides can be found [here](#).

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

## 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

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/>.

**venticool**  
the platform for resilient ventilative cooling