

Foreword

We hope you've had a wonderful start to 2025. Building on the success of our recent annual conference in Dublin, which brought together over 180 participants from 26 countries, this edition highlights its best moments. Mark your calendars for our next major event: the 45th AIVC/ASHRAE IEQ - 11th venticool - 13th TightVent joint conference, titled "IEQ 2025: Rising to New Challenges – Connecting IEQ to a Sustainable Future.". The conference will take place in Montreal, Canada, from September 24–26, 2025. This issue also includes updates from the latest Advisory Board of Practitioners meeting, insights from our recent webinar, new publications and much more!

To stay informed about our activities, be sure to visit our [website](#), follow us on [LinkedIn](#), and read our monthly newsletter, "Energy Efficiency and Indoor Climate in Buildings."

We hope you enjoy this edition and look forward to welcoming you to our future events!

The venticool team

24 – 26 September 2025, AIVC – ASHRAE IEQ –venticool– TightVent joint conference, Montreal, Canada

The conference "IEQ 2025: Rising to new challenges: Connecting IEQ to a sustainable future", organized by ASHRAE and AIVC, will be held in Montreal, Canada on 24-26 September 2025. The conference will also be the 11th venticool and 13th TightVent conference.

This conference provides the opportunity to learn, network and engage with IEQ professionals dedicated to advancing the fields of indoor environmental quality. Emphasis is placed on the growing understanding of occupant response to indoor environment elements (thermal, air quality, lighting and acoustics) while enhancing resilience in a changing climate. Seminars are led by experts from around the world representing AIVC, ASHRAE and many other partnering organizations.

Topics for Papers and Seminars: Performance Metrics: For all aspects of IEQ; Occupant Behavior: How behavior impacts IEQ and how IEQ impacts behavior – psychological dimensions of IEQ; Smart Sensors, Data and Controls: Sensor properties, data management, cybersecurity, applications, 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 acoustics/lighting, the visual/auditory aspect; The Environment Around Us: Acoustics, lighting, glazing, interiors and impacts upon wellness; Policy and Standards: Trends, impacts, implications; HVAC and IEQ in a post-COVID world; Ventilation and building decarbonization; Lighting and Acoustics: How can the outside be brought inside or vice versa; Lighting Performance and Metrics; Noise: How the environmental impact can be mitigated; IEQ in Indigenous Communities.

Registration Opens: **March 7, 2025.**

More information can be found at: <https://www.ashrae.org/conferences/topical-conferences/ieq-2025-conference>

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Feedback from the AIVC-TightVent-venticool Conference: Summary of the resilient ventilative cooling track

On 9-10 October 2024, the AIVC – TightVent – venticool 2024 joint Conference “Retrofitting the Building Stock: Challenges and Opportunities for Indoor Environmental Quality”, was organised by 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 international platform for ventilative cooling (venticool). The University of Galway, the Maynooth University and the Sustainable Energy Authority Of Ireland (SEAI) were also key organisers. This successful event brought together over 180 participants, including researchers, engineers, architects, policymakers, manufacturers, stakeholders, and international organizations from 26 countries.

The conference programme featured three parallel tracks with approximately 150 presentations across the key themes of Smart Ventilation, Indoor Air Quality (IAQ) and Health, Building & Ductwork Airtightness, and Ventilative and Resilient Cooling. A special session of “90-Second Industry Presentations”, was organised to disseminate exclusive information from the event’s sponsors to the conference participants, in addition to the conference exhibition.

The “Resilient Ventilative Cooling” track at the conference was organised in 7 sessions, 4 of which were topical sessions with a number of invited presentations:

1. Ventilative Cooling – latest and greatest. Importance of early design in the world of overheating mitigation using ventilative cooling (Topical Session)
2. Climate change resilience
3. Resilient Indoor Thermal Environments: Findings & Future Policy from an Irish National Study on Non-Residential Buildings (Topical Session)
4. Natural ventilation & cooling
5. ReCOVer++: Improving resilience of buildings to overheating (Topical Session)
6. State of the art of Personalized

Environmental Control Systems (PECS) (Topical Session)

7. Natural Ventilation analysis

This article available [here](#) offers an overview of the main trends, ideas, and insights shared over the two-day conference, focusing particularly on resilient ventilative cooling. The article is structured into four main themes:

1. Ventilative cooling & resilient cooling design
2. Thermal resilience assessment
3. Natural ventilation
4. Personal Environmental Control Systems



Hilde Breesch (KU Leuven, Belgium) delivering a summary of the Resilient Ventilative Cooling track, during the Closing Session at the AIVC 2024 Conference in Dublin

Feedback from the 10th meeting of the Advisory Board of Practitioners for venticool

On November 19th, 2024, representatives from the building cooling and ventilation associated industry together with architects, and consultants gathered for the 10th meeting of the Advisory Board of Practitioners (ABoP). This board, led since the beginning of 2024 by venticool (and initially run in conjunction with Annex 80 from 2021 to 2023), was founded to put results of scientific research into action by establishing strong ties to practitioners and to include their practical experience and feedback in future research projects.

17 participants attended the meeting which focused on the “Hybrid cooling: how to design and operate?”. Following a short introduction & welcome speech by Hilde Breesch (KU Leuven Belgium), there were 2 presentations by experts. The first presentation by Peter Holzer (Institute of Building Research & Innovation, Austria) focused on “Hybrid cooling: interesting approaches”. Ongun Berk Kazanci (DTU Denmark) then presented “Comfort-based control for

mixed-mode buildings/hybrid cooling”. Following the 2 presentations, the participants were split into 2 break-out sessions to discuss the questions which follow:

1. Would you consider applying micro cooling for residential buildings in your country? Why or why not?
2. Would you consider applying “hidden” cooling in buildings? Why or why not?
3. What are in your opinion the challenges for the control of hybrid cooling/mixed mode buildings?
4. Do you believe that climate change has affected the building users’ expectations for thermal comfort? Please explain your reasoning.

The majority expressed a willingness to consider applying micro cooling solutions for residential buildings in their countries. However, they also raised concerns that residents in moderate climates might opt for full air conditioning systems instead.

Additionally, there was a general consensus that “hidden” cooling is an appealing concept, though some participants raised doubts about whether it could guarantee thermal comfort.

The key challenges identified for controlling hybrid cooling or mixed-mode buildings include balancing automation with user preferences, accommodating varying comfort expectations, and addressing diverse room uses and occupant needs. Effective control must integrate parameters like temperature, humidity, noise, outdoor air quality, etc. while managing the complexities of switching between windows opening and mechanical cooling.

In response to whether climate change has affected building users’ expectations for thermal comfort, it was noted that expectations align with the mindset that slightly elevated indoor temperatures are acceptable during extreme heat. In addition, an increase in demand for mechanical cooling is anticipated, driven by easy accessibility to AC and the appeal of combining PV systems with heat pumps, particularly in regions with high electricity prices.

Next meetings

- Meeting #11: **27 March 2025**
- Meeting topic: New EBC Annex 97 Sustainable cooling in cities

If you are interested to join the board, please contact [Maria Kapsalaki](#).

Topical session “Ventilative cooling” Dublin 2024 conference

Christoffer Plesner – VELUX A/S & Jannick Roth – WindowMaster International A/S

On October 9-10 we had the privilege of attending the 44th Air Infiltration and Ventilation Centre (AIVC) & 10th Venticool conference titled “Retrofitting the building stock: challenges and opportunities for indoor environmental quality” held in Dublin, Ireland. The event covered 2 days filled with valuable insights and good company.

We organized and chaired the 90 minutes topical session “Ventilative cooling – latest and greatest. Importance of early design in the world of overheating mitigation using ventilative cooling” which attracted approximately 30 participants and featured lively discussions. We extend our gratitude to presenters Paul D O’Sullivan (Munster Technological University) and Beat Frei (FREI WÜEST EXPERT) for sharing their views on a Ventilative cooling design process and how to tackle resilience and the cooling ladder ethos.

During the topical session we presented the latest content of the upcoming European Technical Specification (CEN/TS) called “Ventilative cooling systems – Design”.

This document sets the framework for designing ventilative cooling systems able to cope with the set criteria, from the early feasibility phase to the actual design phase for both residential and non-residential buildings. Furthermore, the document is a “system design” document much like prEN 15665 (under revision) and EN 16798-3 referencing existing EPBD standards e.g. thermal comfort criteria from EN 16798-1 or national regulations (as there is currently no system design standard for ventilative cooling systems).

To read the full article please click [here](#).

IEA approves new project “Sustainable Cooling in Cities”

We are happy to inform you that the Energy in Buildings and Communities (EBC) and Cities Technology Collaboration Programme (TCP) have approved EBC Annex 97/Cities TCP Task 5

“Sustainable Cooling in Cities”. The new annex has just been launched and starts the 1-year preparation phase.

Peter Holzer (Institute of Building Research & Innovation, Austria) serves as the operating agent of this annex, which already has interest from countries including Australia, Austria, Belgium, Brazil, Canada, Denmark, France, Germany, Italy, Japan, Netherlands, Norway, Spain, Sweden, Turkey, the United Kingdom, and the United States of America.

The project aims to increase and spread international knowledge about effective heat mitigation and sustainable cooling in cities. Emphasis will be placed on the interaction between heat mitigation in outdoor spaces and cooling of buildings. The aim of the project is to develop and support the application of measures that serve the health, safety and wellbeing of people and that push energy efficiency and open the way to carbon neutrality. The project has four subtasks:

1. **Subtask A – Fundamentals** establishes essential criteria for boundary conditions between buildings and outdoor space and key performance indicators (KPIs) on urban cooling, with the goal of providing a solid basis for the Annex activities.

2. **Subtask B – Methods** aims to develop simulation and experimental methods to provide a strong foundation for the Annex activities related to urban spaces and cooling technologies. The goal is to address the need for adapted methods and heat vulnerability indexes in various urban contexts.

3. **Subtask C – Solutions** will review, assess, and compare existing approaches to cooling in cities, such as urban morphology modifications, air flow, shading, evaporation, evapotranspiration, cool materials, district cooling, and human behavior, and advance innovative solutions. It will explore their effects on individuals, buildings, and communities under current and future hot weather and heat events. Its scope will include desk studies, case studies, simulations, monitoring, experiments, and proof-of-concept demonstrations. The outcomes should be useful to practitioners.

4. **Subtask D – Policy** aims to thoroughly analyze the current policies, strategies, and standards concerning urban cooling, with a focus on mitigating heat buildup. This involves evaluating their real-world

impact, identifying current gaps and best practices, and offering practical guidance for decision-makers, policymakers, stakeholders, and others. Additionally, the subtask aims to enhance existing networks and form partnerships with city networks to promote the global acceptance of sustainable cooling practices.

Over the next year, the project will: write a **State-of-the-Art Report**, host a preparation **workshop in Vienna** (April 10-11, 2025) & develop the **three-year project work plan**.

Regular online meetings, starting January 2025, will form working groups to drive the project forward.

Interested parties can contact [Peter Holzer](#) or [Patryk Czarnecki](#).

New AIVC Paper: Resilient Cooling of Buildings

We are happy to announce the release of AIVC’s Ventilation Information Paper #49: Resilient Cooling of Buildings! The paper discusses resilient cooling of buildings, as defined by IEA EBC Annex 80. It examines 4 groups of resilient cooling strategies while assessing their resilience performance to heat waves and power outages.

Click [here](#) to download and read the document.

Recordings available of webinar “PECS in Action: Insights from Case Studies”

The recordings of the webinar, “Personalized Environmental Control System (PECS) in Action: Insights from Case Studies”, held on December 5, 2024 are now available!

Featured presentations:

- [Field experiences with PECS in The Netherlands](#) by [Marije te Kulve](#)
- [Performance of Personalized Ventilation installed in Open-Plan Offices](#) by [Arsen Krikor Melikov](#)
- [The PECS journey in Singapore – From Field Environmental Chamber studies to Field studies](#) by [Chandra Sekhar](#)
- [Utilization and Evaluation of PECS in a Research Facility Office in Japan](#) by [Shin-Ichi Tanabe](#)

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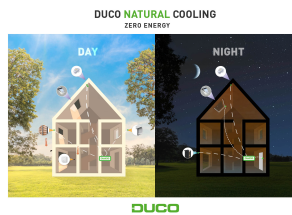
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Optimal indoor comfort with DUCO Natural Cooling

DUCO Ventilation & Sun Control offers state-of-the-art solutions for maintaining a comfortable indoor temperature and a healthy indoor climate through Duco Natural Cooling. By integrating insulation with ventilative cooling and external sun protection, DUCO offers a sustainable and energy-efficient approach to prevent overheating and maintain optimal indoor temperatures. **Active solar shading**, such as innovative fabric screens or sliding panels, not only enhances thermal comfort but also reduces cooling loads by up to 63%. These systems automatically adapt to real-time weather data—measuring light, rain, temperature, and wind speed—via the **DUCO IntelliHub**. **Ventilative cooling** leverages natural airflows and outdoor air to efficiently cool indoor spaces, with minimal user intervention. Automatically controlled systems, such as the **DucoGrille Close 105** in combination with burglary- and insect-proof grilles, ensure a continuous supply of fresh air and seamless cooling. Designed for both residential and commercial applications, DUCO's systems align with the **NEN-EN-ISO 52016-3:2023** standard and meet the stricter **TOjuli** cooling requirements. This environmentally conscious method reduces dependency on energy-intensive air conditioning systems, significantly lowering CO₂ emissions and supporting a greener future. For further information please visit [Duco's website](#).



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 annex 62 (ventilative cooling), annex 80 (Resilient cooling for buildings) and, more recently, annex 87 and organizations with significant experience and/or well identified in the field of ventilation and thermal comfort like AIVC (www.aivc.org) and REHVA (www.rehva.eu). The platform has been initiated by INIVE with (International Network for Information on Ventilation and Energy Performance) with the financial and/or technical support of its partners.

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

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the platform for resilient ventilative cooling