

# Air Infiltration and Ventilation Centre

## EBC ANNEX 5

EBC Annex 5 'Air Infiltration and Ventilation Centre' (AIVC) has been running for 44 years since its inauguration in 1979. During this extended operational period, the AIVC has been routinely reshaping its priorities to reflect emerging concerns and to answer new challenges and opportunities, serving its principal goal to provide reference information on ventilation and air infiltration in the built environment with respect to efficient energy use and good indoor environmental quality (IEQ). In a world striving to achieve net zero greenhouse gas emissions by 2050, the role of energy efficient ventilation in enhancing IEQ and health in buildings is pivotal and emphasize the significance for continuing AIVC activities.

### Objectives

The objectives of the AIVC are as follows:

- enabling the production of high quality and influential documents of international status regarding energy efficient ventilation and air infiltration;
- generating strategy and advice on air infiltration and ventilation related issues in new and renovated buildings;
- communicating and disseminating information in relation to smart ventilation, resilient ventilative cooling, building and ductwork airtightness and indoor environmental quality, though but not limited to conferences and workshops, webinars, databases, social media, and a high visibility web presence.

### Deliverables

- Events: annual conference, one to two workshops per year on specific topics, and one to two webinars per year;
- Publications: conference and workshop proceedings, technical notes, and contributed reports (one per year), and a biannual newsletter.

### Progress

In 2023, the AIVC focused its work mainly on thirteen of its own projects, the AIVC Industry Advisory Committee, the 43rd AIVC Annual Conference, themed 'Ventilation, IEQ and health in sustainable buildings', the workshop in Tokyo, Japan, themed 'Towards high quality, low-carbon ventilation in airtight buildings', and five webinars. Furthermore, the AIVC facilitated remote discussions and supported dissemination activities for 'EBC Annex 78: Supplementing

Ventilation with Gas-phase Air Cleaning, Implementation and Energy Implications', 'EBC Annex 80: Resilient Cooling of Buildings', 'EBC Annex 86: Energy Efficient Indoor Air Quality Management in Residential Buildings', and 'EBC Annex 87: Personalized Environmental Control Systems'.

The latest AIVC projects launched include:

- Designing building ventilation for epidemic and disaster preparedness,
- EPBD revision and ventilation,
- Smart control of ventilation systems,
- Quality of installed ventilation systems, and
- Measurement for Exterior Wall Airtightness of High-Rise Buildings Using Stack Effect / Individual Air Conditioning and Outdoor Air Entering through Entrance Doors.

Previously launched projects that were running in 2023 include:

- Building and ductwork airtightness regulations in various countries,
- Building ventilation regulations in various countries,
- Energy Recovery Ventilation,
- Personalized Environmental Control Systems,
- Temperature take-back effect in the context of energy efficient ventilation strategies,
- Supplementing Ventilation with Gas-phase Air Cleaning,
- Indoor Air Quality Metrics, and
- Competent Tester Schemes for Building Airtightness Testing.

In 2023, AIVC released Technical Note 'TN 72: Ventilation Requirements and Rationale behind. Standards and Regulations of Dwellings, Office Rooms and Classrooms'.

Also, five Ventilation Information Papers were released on trends in building and ductwork airtightness in: Belgium, Latvia, France; Greece and China. Further, 'VIP 46: Building airtightness impact on Energy Performance calculations', and 'VIP 47: High-rise buildings airtightness – error due to stack effect on point measurements', were published.

Over the course of 2023, the AIVC hosted five webinars.

- In January, in collaboration with ASHRAE, AIVC organized a webinar on Sleeping Environment Indoor Air Quality (IAQ) and Sleep Quality.



The opening session at the AIVC 2023 Conference 'Ventilation, IEQ, and Health in Sustainable Buildings', held in Copenhagen, Denmark, in October 2023.

Source: AIVC

- In May and June, three webinars were dedicated to airtightness (building and ductwork airtightness trends and regulations in France, Belgium and Greece, building and ductwork airtightness trends and regulations in the Czech Republic, Latvia and Spain and alternative methodologies to evaluate airtightness).
- In December, a webinar was held on the topic, 'Smart ventilation in non-residential buildings. How to assess? How to design?'.

To further develop the aims of the AIVC and keep a broad perspective on the fields of ventilation, infiltration, and IAQ, in the beginning of 2023 the AIVC Board established an Industry Advisory Committee (IAC). The IAC is a voluntary group of industry leaders dedicated to the goals of the AIVC, representatives of industry but not exclusively advocating for industry, who are proposed and retained at the discretion of the board of the AIVC. Members cover different sectors, geographical areas, and fields of interest to AIVC activities. The mission of the IAC is to: serve as a voice for the industry in AIVC activities; provide feedback on board proposals and decisions; formulate suggestions for future work; provide advisory feedback on publications and other AIVC products; help to disseminate AIVC deliverables to industry and practitioners and amplify outreach. The IAC meets remotely twice a year to give timely feedback in advance of AIVC board meetings.

AIVC has a very close collaboration with the European Union TightVent and venticool platforms. To have more interaction with related organizations and a stronger societal impact, it is a founding member of the Indoor Environmental Global Alliance. AIVC is also facilitating collaboration between other initiatives. As an example, the Advisory Board of Practitioners,

an initiative from EBC Annex 80, AIVC and venticool, launched in March 2021 seeks to establish a format for regular exchange between EBC Annex 80 researchers, with practitioners, planners and representatives from relevant industries. Starting from 2024 and onwards, and following the completion of EBC Annex 80, this will continue under the umbrella of AIVC and venticool. Editions of the AIVC newsletter were published in March and September 2023.

### Meetings

The AIVC Board organized two board meetings in 2023:

- Tokyo, Japan, in May 2023, and
- Copenhagen, Denmark, in October 2023.

### Project duration

1979–2026

### Operating Agent

Prof Arnold Janssens, University of Ghent, Belgium  
Peter Wouters, INIVE EEIG, Belgium

### Participating countries

Australia, Belgium, P.R. China, Denmark, France, Greece, Ireland, Italy, Japan, the Netherlands, New Zealand, Norway, R. Korea, Spain, Sweden, United Kingdom, and USA

### Further information

[www.iea-ebc.org](http://www.iea-ebc.org)



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