



# Newsletter

## Air Infiltration and Ventilation Centre

## Foreword

We're pleased to share the September 2025 edition of the AIVC newsletter!

Inside, you'll discover updates on our recent activities, announcements of future events, newly released publications, and much more!

Looking ahead, please save the dates for two major events:

- AIVC 2026 International Workshop: Climate Change, Ventilation and Resilience – 21–22 April 2026, Madrid, Spain
- 46<sup>th</sup> AIVC Conference: Innovations in Smart Ventilation and IEQ for Resilient and Adaptive Buildings – 30 September & 1 October 2026, Incheon, Korea

We hope you enjoy this edition and look forward to staying connected with you at our upcoming events. For regular updates, visit our [website](#), follow us on [LinkedIn](#) and [Bluesky](#), and explore our monthly newspaper, [Energy Efficiency and Indoor Climate in Buildings](#).

Arnold Janssens & Peter Wouters, Operating Agents, AIVC

## 30 September - 1 October 2026, Incheon, Korea – 46<sup>th</sup> AIVC conference

The 46<sup>th</sup> AIVC conference "Innovations in Smart Ventilation and IEQ for Resilient and Adaptive Buildings" will take place on September 30 & October 1, 2026 at the Songdo International District in Incheon, Republic of Korea. This international event will be held jointly with the 14<sup>th</sup> TightVent Conference and the 12<sup>th</sup> venticool Conference.

The conference is organized by [INIVE](#) on behalf of the [AIVC](#), [TightVent](#) and [venticool](#) in collaboration with the Korean Institute of Civil Engineering and Building Technology ([KICT](#)) and the Korean Institute of Architectural Sustainable Environment and Building Systems ([KIAEBS](#)).

The conference will feature a mixture of presentations selected from the call for papers & topical sessions as well as invited contributions, all organized into well-prepared and structured sessions aligned with the conference theme and topics. In addition, the event will include an exhibition from industry, offering attendees the opportunity to engage with leading partners showcasing innovative solutions and technologies.

### Conference Topics

**Smart ventilation and IEQ (Indoor environmental quality):** Sensor-based real-time IAQ monitoring and control systems; Integration of ventilation with smart building management systems (BMS); Whole-building energy modeling to evaluate IEQ strategies; Application of innovative materials for smart ventilation and IEQ enhancement; Occupant-responsive ventilation strategies; Innovative HVAC systems for enhanced energy efficiency and reduced environmental impact; Impact of smart ventilation on health, comfort, and productivity; Inspection, monitoring, maintenance, reliability and durability of ventilation systems; Standards, policies and legislation.

**Building and ductwork airtightness:** Measurement techniques for building and ductwork airtightness; Innovative sealing materials and construction practices; Effects of air leakage on HVAC performance and energy use; Long-term performance and durability of airtight construction; Airtightness requirements in building codes and regulations.

**Ventilative cooling - Resilient cooling:** Climate adaptation and urban resilience through sustainable cooling; Performance evaluation of ventilative cooling in various climates; Integration of ventilative cooling in zero energy buildings; Occupant perception and satisfaction of IEQ; Standards, policies and legislation.

More details — including the call for abstracts and topical sessions — will be announced soon.

For further information please visit the [conference website](#).



*no 28*  
September 2025

## In this issue

### Foreword

30 September - 1 October 2026, Incheon, Korea – 46<sup>th</sup> AIVC conference

21-22 April 2026, AIVC Workshop, Madrid, "Climate Change, Ventilation and Resilience"

EPBD 2024: Extended Obligations for Ventilation, BACS, and IEQ Monitoring

Feedback from AIVC Webinars – May to September 2025

10 October 2025, AIVC Webinar – Comparing Ventilation Trends in Southern Europe: Italy, France & Spain  
AIVC's new publications

IEQ-GA's Air Infiltration, Ventilation & Air Conditioning Glossary

AIVC List of Board Members



# Air Infiltration and Ventilation Centre

## 21-22 April 2026, AIVC Workshop, Madrid, "Climate Change, Ventilation and Resilience"

The Air Infiltration and Ventilation Centre (AIVC) together with the Eduardo Torroja Institute for Construction Science (CSIC) (IETcc-CSIC) and [venticool](#) are organising a workshop entitled 'Climate Change and Resilient Ventilation' to be held on 21-22 April 2026 at the Instituto de Ciencias de la Construcción Eduardo Torroja, Madrid.

The workshop will provide an opportunity for Spanish researchers and professionals, as well as international experts, to present and discuss recent advances in relation to the challenges that climate change imposes on buildings, related to indoor environmental quality, ventilation, human health and sustainability.

This workshop is part of a series of annual international workshops organised by AIVC in collaboration with international research centres. These events also focus on local issues related to ventilation and infiltration as part of the knowledge generation process. At the Madrid workshop, the following topics will be discussed:

- Ventilation systems and climate resilience
- Indoor Environmental health
- Assessment of IAQ in naturally ventilated dwellings
- IAQ remediation by smart materials and air cleaning
- Sustainable cooling in cities
- Personalised Environmental Control Systems (PECS)
- Case studies in relation to the workshop topics

The workshop will be sponsored by companies in the sector to be specified later. To participate as a sponsor, please contact Pilar Linares Alemparte at: [plinares@ietcc.csic.es](mailto:plinares@ietcc.csic.es)

In case you are interested to contribute with a presentation, please contact Pilar Linares Alemparte at: [plinares@ietcc.csic.es](mailto:plinares@ietcc.csic.es)

Programme, speakers, registration details, and more will be shared soon! Keep an eye on updates [here](#).

## EPBD 2024: Extended Obligations for Ventilation, BACS, and IEQ Monitoring

*Peter Wouters, AIVC Operating Agent*

The recast of the Energy Performance of Buildings Directive (EPBD), formally adopted in 2024, introduces new obligations that directly affect large-scale technical building systems. The revised provisions expand both the scope of inspection requirements and the role of building automation, while also establishing mandatory monitoring of indoor environmental quality (IEQ).

Under the new framework, **ventilation systems fall within the scope of inspections** when combined with heating or cooling systems exceeding specific thresholds.

This represents a significant widening compared to earlier EPBD versions, where ventilation systems were largely excluded. Member States are required to transpose these provisions into national legislation within the standard transposition period and ensure compliance deadlines are aligned with the directive.

The 2024 recast also makes **Building Automation and Control Systems (BACS)** obligatory for non-residential buildings above similar thresholds

Where BACS are installed in line with the directive, the obligation for regular inspections is waived. This reflects the recognition that BACS provide continuous supervision and optimization, delivering energy efficiency benefits beyond periodic inspection regimes.

A further innovation of EPBD 2024 is the **mandatory monitoring of IEQ parameters from 2026 onwards**. This applies to large non-residential buildings and includes, at minimum, temperature, humidity, CO<sub>2</sub> concentration, and ventilation performance indicators. The requirement underscores the shift in EU building policy from a purely energy-efficiency perspective toward a broader **Indoor Environmental Quality (IEQ) framework**, linking occupant well-being, productivity, and energy use.

To aid Member States in implementing these obligations, **the European Commission published on June 30, 2025 its**

**Guidance on Technical building systems, indoor environmental quality and inspections (Articles 13, 23 and 24) - Annex 10** (European Commission, 2025). The document provides practical clarification on inspection scope, the BACS requirement, and methodologies for IEQ monitoring, with the objective of harmonizing transposition and enforcement across the Union.

The EPBD 2024 recast signals a decisive step toward integrating digitalization, performance monitoring, and health-related aspects into building regulation. The combined focus on **ventilation inspections, automation, and IEQ monitoring** represents a systemic approach, aligning energy efficiency with occupant-centred outcomes.

## Feedback from AIVC Webinars – May to September 2025

During the period May 2025 to September 2025, the Air Infiltration and Ventilation Centre (AIVC) organized 4 webinars:

### 5 May 2025: Improving thermal resilience of buildings to overheating: Lessons learned

- 143 participants
- Organizer: AIVC & venticool
- Recordings & Slides available [here](#)

### 12 May 2025: Building and ductwork airtightness trends and regulations in Estonia, Germany and the U.S.

- 41 participants
- Organizer: AIVC & TightVent
- Recordings & Slides available [here](#)

### 5 June 2025: Inspection of ventilation systems in non-residential buildings

- 110 participants
- Organizer: AIVC
- Recordings & Slides available [here](#)

### 18 September 2025: Emerging Risks of Indoor Mould: Assessment Methods, In-Situ Measurements & Predictive Modelling

- 164 participants
- Organizer: AIVC
- Recordings & Slides available [here](#)

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!



# Air Infiltration and Ventilation Centre

## 10 October 2025, AIVC Webinar – Comparing Ventilation Trends in Southern Europe: Italy, France & Spain

Recent years have seen important evolutions in building ventilation regulations, inspection practices, and market developments across Europe, with significant differences between countries. While Spain has progressively moved towards performance-based IAQ regulations and the adoption of smart ventilation systems, France is transitioning from prescriptive to performance-based frameworks while maintaining its long-standing tradition of mechanical ventilation in dwellings. Italy, historically reliant on natural ventilation, is now experiencing a growing shift towards mechanical systems, driven by stricter energy requirements, renovation incentives, and the implementation of the latest EU directives.

The AIVC is releasing a series of Ventilation Information Papers (VIP 48.XX) to highlight national trends and regulations on building ventilation, with 4 papers already published. The purpose of this webinar is to share the current status and outlook for Italy, France, and Spain, based on these VIPs.

This webinar is organised with the support of the [AIVC](#) and [TightVent](#). Both initiatives are facilitated by [INIVE](#).

### AGENDA (CET)

- 10:00 | Introduction: Presentation of the series of AIVC VIPs on building ventilation requirements and inspection, Nolwenn Hurel (Cerema, France)
- 10:05 | National trends and requirements in Italy, Aldo Fumi (ASSOCLIMA, Italy) & Luca Alberto Piterà (AiCARR, Italy)
- 10:20 | Questions and answers
- 10:30 | National trends and requirements in France, Valérie Leprince (Cerema, France)
- 10:45 | Questions and answers
- 10:55 | National trends and requirements in Spain, Pilar Linares-Alemparte (IETcc-CSIC, Spain)
- 11:10 | Questions and answers
- 11:30 | End of the webinar

The webinar is free to attend, but registration

is required. You can register via the link provided [here](#).

### AIVC's new publications

The AIVC is pleased to announce the release of 6 new AIVC publications!

#### AIVC's Ventilation Information Paper no

**48.4: Trends in building ventilation requirements and inspection in Italy** (May 2025).

A paper summarizing current knowledge on trends in building ventilation requirements and inspection in Italy.

**AIVC's Technical Note no 74: Smart Ventilation in Residential Buildings** (June 2025).

A comprehensive review aimed at summarizing the available evidence on the benefits of implementing smart ventilation solutions in homes. This publication focuses on ventilation strategies and their effectiveness, which consists of IAQ benefits, non-IAQ benefits (such as thermal comfort and noise), minimizing energy consumption and minimizing utility bills, and other advantages related to indoor environmental quality (IEQ).

**AIVC's Contributed Report no 20: A method for testing gas-phase air cleaners** (June 2025).

A report describing a test method for gas phase air cleaners based on Perceived Air Quality (PAQ).

**AIVC's Contributed Report no 21: Performance of Portable Gas-Phase Air Cleaners and Impact on Indoor Air Quality. A Literature Review** (June 2025).

A report presenting a comprehensive review of the performance of portable gas-phase air cleaning technologies used in non-industrial indoor environments.

**AIVC's Contributed Report no 22: Quantifying population harm from indoor air contaminants in dwellings** (July 2025).

A report providing a systematic analysis of the currently available data on prevalence and quantity of air pollutants in 'Western Style' dwellings and the harm they are likely to cause.

**AIVC's Annotated Bibliography no 14: Retrofitting the Building Stock: Challenges and Opportunities for Indoor Environmental**

**Quality – Overview of the AIVC 2024 Conference sessions** (August 2025).

A document summarizing the key themes and insights from the two-day AIVC 2024 conference.

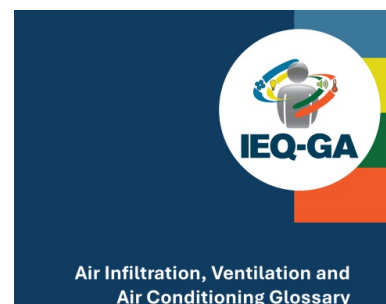
All documents are freely accessible on the [AIVC website](#).

## IEQ-GA's Air Infiltration, Ventilation & Air Conditioning Glossary

The Indoor Environmental Quality – Global Alliance is pleased to announce the release of a Glossary of air infiltration, ventilation, and air conditioning terms. The Glossary was developed by the member organizations' representatives led by Professor Livio Mazzarella, Politecnico di Milano – Dipartimento di Energia. It fulfils a goal of IEQ-GA to generate documents that will be useful to all its members, as well as others that have an interest in the terms that are acceptable in these fields (air infiltration, ventilation, and air conditioning).

It is expected that the Glossary will be utilized by all individuals who have an interest in air infiltration, ventilation, and air conditioning as a tool to be implemented for all documents, standards, manuscripts, and research papers. The Glossary contains hundreds of definitions of words relating to air infiltration, ventilation, and air conditioning. It is set up in an alphabetical format for use of use. It is noted that the definitions were taken a wide variety of standards and glossaries issued by reputable professional organizations and standards, including ASHRAE; AIVC; REHVA; ISO; European Standards; and other sources.

The Glossary is freely accessible as an [online search tool](#) and is also available for download in [PDF format](#).







ANNEX **5**  
ANNEX **86**

**EBC**  
Energy Efficient Buildings and  
Climate Programme

**AIVC Technical Note 74**  
**Smart Ventilation in Residential Buildings**

June 2025

**Main Authors**  
Daniela Mortari, CEREMA, Université Savoie Mont Blanc, France  
Yu Wang, BRANZ, New Zealand  
Gaëlle Guyot, CEREMA, Université Savoie Mont Blanc, France  
Married Plagmann, BRANZ, New Zealand  
Nathan Mendes, Pontifical Catholic University of Paraná, Brazil

Technology Collaboration Programme

**Ventilation  
Information  
Paper  
n° 48.4**  
May 2025

© INIVE vzw  
Operating Agent  
and Management  
Sint-Pietersnieuwstraat 41,  
B-3000 Ghent – Belgium  
www.inive.org

International Energy Agency's Energy  
in Buildings and Communities  
Programme

**AIVC**  
Air Infiltration and Ventilation Centre

**Trends in building  
ventilation  
requirements and  
inspection in Italy**

Alto Fumi, ASSOCIAMA  
Luca A. Piana, ACARS  
Marco Simonetti, Politecnico di Torino  
Michele Zinzi, ENEC

**1 General introduction**  
This information paper aims, for the first time, to provide information on ventilation trends in Italy. The main topics analysed are the regulatory framework and the market evolution.  
Italy extends for more than 300,000 km<sup>2</sup> and has about 59M inhabitants. In the country there are more than 13.5M buildings, among which more than 90% are the residential one. As of early 2023, 70% of this building stock was built before 1980 and 50% before 1970 [1]. Given that the building energy renovation rate remains low and the annual rate of new construction is about 1%, the above figures effectively illustrate the sector's status in terms of energy performance.  
The country has 20 Regions and 2 autonomous Provinces; this information is relevant as the energy issues are regulated at local level, which implies the existence of one set of national laws and a large number of regional laws. Luckily, most regions implemented locally the national regulation for both building energy requirements and the related technical regulations for assessment. As a result, this paper refers to the general framework; specific contents, such as the emergency case of the Province of Bolzano, are not covered in this paper, given the specificity of the regulation and the very small population affected by it.  
Historically, mechanical ventilation has not been a major concern in the country, as in other Mediterranean regions, since using was typically

ANNEX **5**  
ANNEX **86**

**EBC**  
Energy Efficient Buildings and  
Climate Programme

**Annotated Bibliography 14**  
**Retrofitting the Building Stock: Challenges and Opportunities for Indoor Environmental Quality – Overview of the AIVC 2024 Conference sessions**

August 2025

**Main Authors**  
Maria Kapsalaki, INIVE  
Arnold Janssens, INIVE  
Peter Wouters, INIVE

# AIVC • List of board members

- Australia: Riccardo Paolini, University of New South Wales
- Belgium: Hilde Breesch, KU Leuven • Lula Timmerman, FPS Public Health
- Canada: Liang (Grace) Zhou, National Research Council Canada • Iain Macdonald, National Research Council Canada
- Denmark: Bjarne Olesen, Technical University of Denmark • Alireza Afshari, Aalborg University Copenhagen
- France: Laure Mouradian, CETIAT • Gaëlle Guyot, CEREMA
- Greece: Giorgos Panaras, University of Western Macedonia • Theo Tountas, FUV Group
- Italy: Michele Zinzi, Enea • Marco Simonetti, Politecnico di Torino
- Ireland: James McGrath, Maynooth University • Marie Coggins, University of Galway
- Japan: Takao Sawachi, Building Research Institute • Yoshihiko Akamine, NILIM
- Netherlands: Wouter Borsboom, TNO
- New Zealand: Manfred Plagmann, BRANZ • Yu Wang, BRANZ
- Norway: Kari Thunshelle, SINTEF Byggeforsk
- Republic of Korea: Yun Gyu Lee, Korea Institute of Construction Technology • Dong Hwa Kang, University of Seoul
- Spain: Pilar Linares Alemparte, The Eduardo Torroja Institute for Construction Science - CSIC • Sonia García Ortega, The Eduardo Torroja Institute for Construction Science - CSIC
- UK: Benjamin Jones, University of Nottingham • Maria Kolokotroni, Brunel University London
- USA: Andrew Persily, NIST • Iain Walker, LBNL

## Operating agent

INIVE vzw, [www.inive.org](http://www.inive.org), [info@aivc.org](mailto:info@aivc.org)  
Arnold Janssens and Peter Wouters, operating agents • Maria Kapsalaki, senior consultant

## AIVC board guests

Nemalen Chetty • Willem de Gids • Gilles Flamant • Laszlo Fulop • Constanza Molina • Max Sherman • Hiroshi Yoshino

## Representatives of organisations

Meli Stylianou, IEA EBC, <http://www.iea-ebc.org/>  
Carsten Rode, IEA EBC Annex 68, <http://www.iea-ebc-annex68.org/>  
Pawel Wargocki, IEA EBC Annex 78, <https://annex78.iea-ebc.org/>  
Jelle Laverge, IEA EBC Annex 86, <http://annex86.iea-ebc.org/>  
Bjarne Olesen, IEA EBC Annex 87, <https://annex87.iea-ebc.org/>  
Peter Holzer, IEA EBC Annex 97, <http://annex97.iea-ebc.org/>  
Jensen Zhang, IJVV, <https://www.tandfonline.com/loi/tjov20>  
Jaap Hogeling, REHVA, [www.rehva.eu](http://www.rehva.eu)  
Alireza Afshari, IBPSA, [www.ibpsa.org](http://www.ibpsa.org)  
Wenjuan Wei, ISIAQ, <https://www.isiaq.org/>  
Donald Weekes, IEQ-GA, <https://ieq-ga.net/>  
Simon Jones, AIVC Industry Advisory Committee Chair