



Climate Change, Ventilation and Resilience

AIVC International Workshop

Madrid, Spain

21-22 April 2026

Workshop description

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 in 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 (IEQ), 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.

Workshop Programme

Day 1 - Tuesday, April 21, 2026			
Opening Session			
<i>Chairs: Pilar Linares Alemparte (IETcc-CSIC, ES) & Arnold Janssens (AIVC Operating Agent/INIVE/UGent, BE)</i>			
09:00	Welcome on behalf of Eduardo Torroja Institute for Construction Science (IETcc-CSIC)	TBA, IETcc-CSIC, Spain	
09:10	Overview of AIVC, TightVent & venticool	Arnold Janssens, AIVC Operating Agent/INIVE/UGent, Belgium	
IEQ Policy			
<i>Chairs: Pilar Linares Alemparte (IETcc-CSIC, ES) & Arnold Janssens (AIVC Operating Agent/INIVE/UGent, BE)</i>			
09:20	Indoor Spanish air quality regulation reinvented: research as the pathway from prescriptive to performance-based regulations	Pilar Linares Alemparte, IETcc-CSIC, Spain	Abstract
09:35	Data processing possibilities for large-scale IAQ prediction	Sonia García Ortega, IETcc-CSIC, Spain	Abstract
09:50	On energy transitions, clean cooling, and societal needs and implications. A European overview	Teresa Cuervo-Vilches, IETcc-CSIC, Spain	Abstract
10:05	Overheating assessment & ventilative cooling in national building codes regarding indoor environmental quality and energy performance	Hilde Breesch, KU Leuven, Belgium	Abstract



10:20	Discussion		
10:40	Coffee Break		
Indoor Environmental health			
<i>Chairs: Sonia García Ortega (IETcc-CSIC, ES) & Benjamin Jones (University of Nottingham, UK)</i>			
11:05	From Law to Public Health Impact: Implementing the Belgian Framework for Improving Indoor Air Quality in Public Places	Lula Timmerman, <i>FPS Public Health, Belgium</i>	Abstract
11:20	Indoor Environmental Quality-Revision of standard EN16798-1 in relation to the EPBD guideline	Bjarne W. Olesen, <i>Technical University of Denmark, Denmark</i>	Abstract
11:35	healthRiskADAPT: Advanced Ventilation and Filtration Strategies for Indoor Air Quality and Thermal Comfort	Wouter Borsboom, <i>TNO, Netherlands</i>	Abstract
11:50	Linking Indoor Overheating and Mortality: A Risk-Based Assessment of Heatwave Impacts on Buildings and Occupants	Nicholas Paradza, <i>University of La Rochelle, France</i>	Abstract
12:05	Multifunctional materials in indoor environments: air remediation and cooling properties	Andrea Martínez-Topete, <i>IETcc-CSIC/UPM, Spain</i>	Abstract
12:20	Discussion		
12:40	Lunch		
Sustainable cooling in cities			
<i>Chairs: Hilde Breesch (KU Leuven, BE) & Teresa Cuerdo Vilches (IETcc-CSIC, ES)</i>			
13:40	Sustainable cooling in cities-Assessment of human exposure to the outside environment	Bjarne W. Olesen, <i>Technical University of Denmark, Denmark</i>	Abstract
13:55	Multisensory outdoor environmental study for enhancing urban population resilience to climate change	Anna Laura Pisello, <i>University of Perugia, Italy</i>	Abstract
14:10	Climate datasets for designing buildings resilient to climate and natural disasters	Abhishek Gaur, <i>National Research Council Canada, Canada</i>	Abstract
14:25	Citizen science for multi-scale climate assessment: integrating distributed modelling and crowdsourced observations to inform urban heat adaptation	Jesus Lizana, <i>University of Oxford, United Kingdom</i>	Abstract
14:40	Outdoor microclimate variations and indoor thermal stress: summer field measurements in an elderly care facility	Jialiang Guo, <i>KU Leuven, Belgium</i>	Abstract
14:55	Discussion		
15:15	Coffee Break		
Assessment of IAQ in naturally ventilated dwellings			
<i>Chair: Irene Poza Casado (UVa, ES), Michele Zinzi (ENEA, IT)</i>			
15:40	Beyond conventional IAQ metrics: individual Volatile Organic Compounds in Spanish dwellings	Marta Sacristán-Uña, <i>University of Valladolid, Spain</i>	Abstract
15:55	Temperature and CO ₂ in Madrid social housing through one year monitored data	Carmen Alonso, <i>IETcc-CSIC, Spain</i>	Abstract
16:10	Effect of heat waves in PM indoor concentration and optimization of air flow rates in mixed-mode ventilated classrooms	Rosa Ana Caro, <i>UPM, Spain</i>	Abstract



16:25	Radon exhalation from structural walls in heritage buildings: Health risks and innovative monitoring approaches	Borja Frutos Vázquez, <i>IETcc-CSIC, Spain</i>	Abstract
16:40	Discussion		
Assessing ventilation performance <i>Chairs: Valérie Leprince (Cerema, FR) & Sonia García-Ortega (IETcc-CSIC, ES)</i>			
17:00	Multi-criteria evaluation of eight ventilation systems in renovated houses: energy, air quality and comfort performance	Nolwenn Hurel, <i>Cerema, France</i>	Abstract
17:15	IEQ in domestic workspaces: indicators and perceptions in Spanish homes	Teresa Cuervo-Vilches, <i>IETcc-CSIC, Spain</i>	Abstract
17:30	Assessment of low-cost CO ₂ sensors performance for smart ventilation	Julie Soriano, <i>Cetiat, France</i>	Abstract
17:45	Discussion		
18:00	End of Day 1		
Day 2 - Wednesday, April 22, 2026			
Ventilation systems and climate resilience <i>Chairs: Jelle Laverge (Ghent University, BE) & Mar Barbero Barrera (UPM, ES)</i>			
09:00	A review and discussion of indoor environmental resilience: An update since 2015	Andrew Persily, <i>NIST, USA</i>	Abstract
09:15	Power outage profiles generation to assess thermal and indoor air quality resilience	Peihang An, <i>KU Leuven, Belgium</i>	Abstract
09:30	Consequences of climate change on indoor air quality at primary schools in Madrid	Violeta Rodríguez González, <i>UPM, Spain</i>	Abstract
09:45	Relation of overheating and IAQ during heatwaves. Case studies in two southern European locations	Aurora Monge-Barrio, <i>University of Navarra, Spain</i>	Abstract
10:00	Climate-resilient ventilative cooling: experimental performance of a renewable hybrid air-cooling technology under heatwave conditions	Manuel Ruiz de Adana, <i>University of Cordoba, Spain</i>	Abstract
10:15	Full-scale facility for night and day-time passive radiative cooling system assessment	Eduardo González Cruz, <i>IETcc-CSIC, Spain</i>	Abstract
10:30	Discussion		
11:00	Coffee Break		
Personalised Environmental Control Systems (PECS) <i>Chairs: Bjarne Olesen (DTU, DK) & TBA</i>			
11:30	Personal Environmental Control Systems: Occupant-system interactions and impact on cognitive performance	Jensen Zhang, <i>Syracuse University, USA</i>	Abstract
11:45	Thermal resilience performance of personalized environmental control systems (PECS) in a multi-occupied office	Douaa Al Assaad, <i>KU Leuven, Belgium</i>	Abstract
12:00	On the energy and environmental assessment of PECS in office	Michele Zinzi, <i>ENEA, Italy</i>	Abstract



	buildings. Findings from Italian Living Labs experience		
12:15	Personal exposure to exhaled contaminants using a personalised exhaust system integrated in a hospital bed	Manuel Ruiz de Adana, <i>University of Cordoba, Spain</i>	Abstract
12:30	Discussion & Closing		
13:00	Lunch		
14:00	End of Workshop		



Workshop organisers

The workshop is organised by the [Eduardo Torroja Institute for Construction Science \(IETcc-CSIC\)](#) together with the Air Infiltration and Ventilation Centre ([AIVC](#)), with the collaboration of [venticool](#) (the platform for resilient ventilative cooling) and [INIVE](#) (International Network for Information on Ventilation and Energy Performance).

Workshop Venue

The workshop will take place at the [Instituto de Ciencias de la Construcción Eduardo Torroja, 4 Serrano Galvache St., Madrid 28033.](#)

Instructions on how to get there.

Registration

This is an **in-person event**. Participation is **free of charge**; however, **registration is mandatory** and limited to 120 participants. Registration will close on **Tuesday, 31 March 2026**. **Registration is available [here](#)**.

Please note that a **no-show fee** will be charged to registered participants **who do not attend without prior cancellation**. If you are unable to attend, you are kindly requested to cancel your registration by **14 April 2026** (one week before the event) by emailing [Maria Kapsalaki](#).

Sponsors

This workshop is financially and technically supported by: [Airelimpio](#), [Aldes](#), [Duco](#), [Renson](#), [Reynaers Aluminium](#), [Siber](#), [Soler & Palau \(S&P\)](#), [Velux](#) & [WindowMaster](#).

