



Newsletter

Air Infiltration and Ventilation Centre

@AIVCnews

Foreword

We are very pleased to announce that the Executive Committee of the International Energy Agency (IEA) Energy in Buildings and Communities (EBC) Programme approved the continuation of the AIVC for the period 2017-2021. This extension will give us the opportunity to continue R&D related activities as well as carrying out high impact dissemination activities involving the organisation of events, the production of publications, the cooperation with well-established organisations etc. in the field of ventilation and air infiltration.

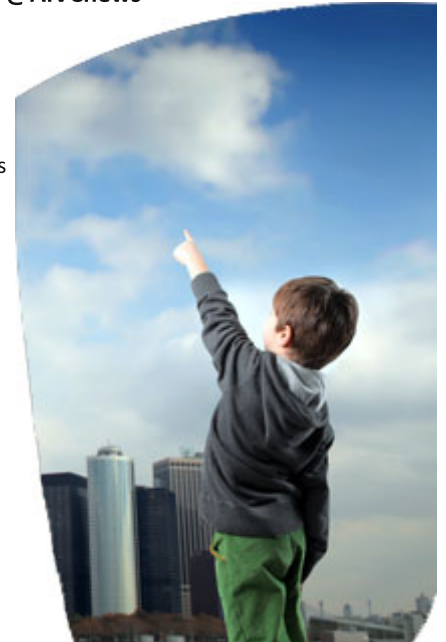
We would like to encourage you to visit our website and follow us on twitter and LinkedIn to find out more about our activities.

Also, don't forget to save the dates for our following upcoming major events:

- > 37th AIVC-ASHRAE- IAQ joint Conference on September 12-14, 2016 in Alexandria, VA, USA
- > Workshop on IAQ performance of ventilation systems, on March 14-15, 2017 in Brussels, Belgium
- > 38th AIVC-TightVent- venticool joint Conference on September 13-14, 2017 in Nottingham, UK

We wish you a pleasant reading and look forward to seeing you in our future events.

Peter Wouters, Operating Agent AIVC



no 10
September 2016

IEA EBC approves extension for AIVC (2017-2021)

On June 9, the executive committee of the International Energy Agency Technical Collaboration Programme Buildings and Communities (EBC TCP), previously called the implementing agreement on Buildings and Communities, approved a new extension period for the AIVC for the period 2017 until 2021, i.e. a 5-year extension.

During this new period, no radical changes in the overall operation of the AIVC is foreseen but, of course, there will be an evolution in the priorities for the AIVC.

8 specific topics of interest have been identified, i.e., ventilation and airtightness in relation to:

1. ... near zero energy buildings
2. ... real performances
3. ... regulations and standards
4. ... healthy buildings

5. ... retrofitting
6. ... rating tools and indicators
7. ... adoption of new technologies
8. ... reduction of exposure

To read the full article please visit:
<http://www.aivc.org/news/iea-ebc-approves-extension-aivc-2017-2021>

In case of interest to become involved in AIVC, please contact us at info@aivc.org.

SAVE THE DATE: 13-14 September 2017, 38th AIVC conference, Nottingham UK

The 38th AIVC conference will be held on 13 and 14 September 2017 in Nottingham (UK) together with the 6th TightVent conference and the 4th venticool conference.

More information will follow so stay tuned.

In this issue

Foreword

IEA EBC approves extension for AIVC (2017-2021)

SAVE THE DATE: 13-14 September 2017, 38th AIVC conference, Nottingham UK

ANSI/ASHRAE Standards 62.1-2016: Ventilation for Acceptable Indoor Air Quality, and 62.2-2016: Ventilation and Acceptable Indoor Air Quality in Residential Buildings

Summaries from the ventilative cooling and airtightness workshops at Clima 2016

Doing Ventilation Right in IAQ Studies: Workshop at Indoor Air 2016 in Ghent

September 12-14, 2016: 37th AIVC –ASHRAE- IAQ joint conference Alexandria, VA, USA

Energy Efficiency and Indoor Climate in Buildings

10th International BUILDAIR Symposium

David Etheridge

List of AIVC board members



ANSI/ASHRAE Standards 62.1-2016: Ventilation for Acceptable Indoor Air Quality, and 62.2-2016: Ventilation and Acceptable Indoor Air Quality in Residential Buildings

Andrew Persily, NIST, USA,
Paul Francisco, UIUC, USA

ASHRAE Standard 62.1 was first published in 1973 as Standard 62, Standards for Natural and Mechanical Ventilation, Standard 62.1 is updated typically every three years using ASHRAE's continuous maintenance procedures, in which discrete changes are made via addenda to the standard. Addenda are publicly reviewed, with the committee responding and attempting to resolve all comments that are submitted. The 2016 edition of ANSI/ASHRAE Standard 62.1 combines Standard 62.1-2013 and the fourteen approved and published addenda to the 2013 edition.

Standard 62.1 has undergone key changes over the years, reflecting the ever-expanding body of knowledge, experience, and research related to ventilation and air quality. While the purpose of the standard remains unchanged—to specify minimum ventilation rates and other measures intended to provide indoor air quality (IAQ) that is acceptable to human occupants and that minimizes adverse health effects—the means of achieving this goal have evolved. More information on the development of the standard can be found in Persily 2015, Challenges in developing ventilation and indoor air quality standards: The story of ASHRAE Standard 62, Building and Environment, 91: 61-69.

The 2016 edition revises and improves the standard in several ways. The scope was changed to remove residential occupancies from 62.1 with a concurrent change in Standard 62.2 to add all residential spaces. Other significant changes include the following:

- The definition of “environmental tobacco

smoke” (ETS) was revised to include emissions from electronic smoking devices and from smoking of cannabis.

- Operations and maintenance requirements were revised to align more closely with the requirements in ASHRAE/ACCA Standard 180-2012, Standard Practice for Inspection and Maintenance of Commercial Building HVAC Systems.
- Requirements were added to the Indoor Air Quality Procedure for determining minimum ventilation rates by including consideration of the combined effects of multiple contaminants of concern on individual organ systems.
- Ventilation is allowed to be reduced to zero through the use of occupancy sensors (not through contaminant or CO₂ measurements) for spaces of selected occupancy types, provided that ventilation is fully restored whenever occupancy is detected.

For more specific information on these changes and on other revisions made to the standard by other addenda, refer to Informative Appendix K of the standard. Users of the standard are encouraged to use the continuous maintenance procedure to suggest changes for further improvements. A form for submitting change proposals is included in the back of the standard or can be downloaded at <https://www.ashrae.org/standards-research-technology/standards-forms--procedures>.

ASHRAE Standard 62.2 was first published in 2003 after being split off from 62.1. As with 62.1, it is also updated every three years and is under continuous maintenance. The 2016 edition incorporates 17 addenda that were approved since the 2013 edition.

In addition to the aforementioned realignment to include ALL residential dwelling units in 62.2, regardless of building height, there were several major changes from the 2013 edition:

- A method was approved for providing an infiltration credit to horizontally-attached residential units (e.g. townhomes) based on

a leakage measurement.

- For existing homes, the standard now allows no mechanical ventilation to be installed if the calculated requirement is 15 cfm (7 l/s) or less.
- For new construction, kitchen ventilation requirements were increased if the ventilation was not a range hood
- A change was made to clarify allowable override controls. The impact is that it is clear that other overrides beyond wall switches are allowed, e.g. circuit breakers.
- A change was made that disallows passive dampers in passive makeup air systems – something needs to be powered.
- A calculation method was developed that provides a means to calculate whether an alternate ventilation strategy is “equivalent” or better to the primary intent of the standard. This change also limits the short-term exposure to five times the annual average.
- Unvented space heaters had been explicitly out of scope. This limitation has been removed.

Summaries from the ventilative cooling and airtightness workshops at Clima 2016

The joint CLIMA 2016 and the 12th REHVA Conference was held in Aalborg on 22-25 May 2016. Specific sessions dealing with ventilation & air infiltration, building & ductwork airtightness, ventilative cooling and quality & compliance were organised.

The summaries from the ventilation & air infiltration, building & ductwork airtightness and ventilative cooling workshops are available. Click on the links that follow:

“Agenda for Ventilation and Air Infiltration 2020 and beyond: knowledge gaps, research priorities and the need for innovation”

“Ventilative cooling in energy performance regulations”

“Progress made on building and ductwork airtightness in the past 5 years”



Doing Ventilation Right in IAQ Studies: Workshop at Indoor Air 2016 in Ghent

Andrew Persily, NIST, USA
Pawel Wargocki, DTU, Denmark
Peter Wouters, INIVE, Belgium

A session at Indoor Air 2016 conference in Ghent was organized to help attendees understand the importance of characterizing ventilation in IAQ studies and to provide them with a better understanding of the options and challenges in doing so. Currently, too many IAQ studies fail to describe how the space or building being studied is intended to be ventilated or how it is actually being ventilated. In other cases, ventilation rates are provided with inadequate descriptions of how the measurements were conducted or any estimates of measurement uncertainty. This problem can be summarized by asking the questions: Would a journal accept a paper that reported a formaldehyde concentration of 11.5 µg/m³ without any information as to how the concentration was conducted? Of course not! But that's what's happening with ventilation rates far too often.

The session began with Pawel Wargocki explaining the problem of poor ventilation characterization in IAQ Studies, which he described as the IAQ Family's Deep Dark Secret. Andrew Persily discussed approaches to understanding building ventilation, including building and system design characteristics and actual performance measurements. Peter Wouters then described the range of resources available from the AIVC to help IAQ researchers and practitioners do a better job in characterizing ventilation. After these presentations, a lively and interesting dialog took place among the session occupants.

September 12-14, 2016: 37th AIVC –ASHRAE- IAQ joint conference Alexandria, VA, USA

This joint conference will provide a unique opportunity for dialogue among attendees

to facilitate understanding of current indoor air quality policies, standards and best practices with themes such as regulatory vs. voluntary compliance for achieving Indoor Air Quality (IAQ), the role of IAQ in sustainable building programmes and the relationship between IAQ and Indoor Environmental Quality (IEQ), etc.

The conference programme will include internationally acclaimed keynote speakers, original peer reviewed papers, the latest in indoor environmental quality control, plus workshops and panel discussion.

This conference will guide the researchers, experts, policy makers, building owners and operators, engineers, designers, IAQ professionals, commissioning agents, architects and other interested participants about what works and what really doesn't work when tackling major improvements in indoor air quality. Target facilities include residential and non-residential buildings.

The keynote speakers are:

- Chris Pyke, U.S. Green Building Council
- Howard Wolf, HW3 Group (IICRC)
- Pawel Wargocki, Technical University of Denmark
- David Jacobs, National Center for Healthy Housing
- David Rowson, U.S. Environmental Protection Agency

Thirteen paper sessions with 60 papers are included, covering IAQ metrics, ventilation and IAQ measurement methods, residential IAQ, natural ventilation, infiltration, approaches and tools for achieving better IAQ and others.

The technical programme's strength is in the steering committee's influential industry ties to organise 13 sessions on current IAQ practices, standards and best practices with speakers who are leaders in the industry. These sessions include:

- Where Are We Going with IAQ Metrics?
- Future of IAQ Sensors and Controls
- Demand-controlled Ventilation

- The Policymaker's Perspective
- IEA EBC Annex 68 Project: IAQ Design and Control in Low Energy Residential Buildings
- Evolution and State of the Art of the Residential Ventilation Standard for North America (ASHRAE 62.2)
- Continuous Assessment of IEQ

The conference organisers offer several sponsorship opportunities to engage industry participation. The expected attendance for this conference is 250 people. If you are interested in sponsoring the conference please visit:

<https://www.ashrae.org/membership--conferences/conferences/ashrae-conferences/iaq-2016#sponsorship>

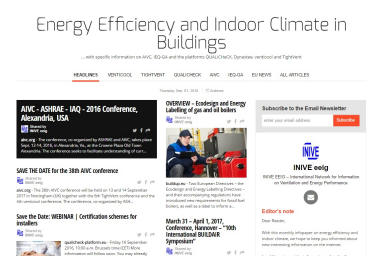
For further information please visit: <https://www.ashrae.org/membership--conferences/conferences/ashrae-conferences/iaq-2016>

Energy Efficiency and Indoor Climate in Buildings

Energy Efficiency and Indoor Climate in Buildings has just been released. This monthly online newspaper contains relevant information on the Air Infiltration and Ventilation Centre (AIVC), the international platform on ventilative cooling (venticool) & IEA EBC annex 62-ventilative cooling, the building and ductwork airtightness platform (TightVent Europe), the Indoor Environmental Quality – Global Alliance (IEQ-GA), the QUALICHeCK project and the Dynastee network.

The paper is available at the first of every month at: <http://news.inive.org/>

Subscribe to get informed on a regular basis on the platforms' activities.





10th International BUILDAIR Symposium

The tenth anniversary of the International BUILDAIR Symposium "Airtight Buildings, Thermography and Ventilation Systems in Practice" will be held from March 31 to April 1, 2017 in Hannover Germany. The BUILDAIR Symposium has been for over 20 years a major event on airtightness issues in Germany.

This event is intended for all measuring teams, energy consultants, planners, and architects. Experts will present their expertise and share their experience.

Topics for the 10th International BUILDAIR Symposium include: Experiences from the measuring practice in building envelope and ventilation equipment, new standard ISO 9972, details of planning and execution of airtightness levels, evaluation of leakages new products and quality assurance.

For further information please visit:
<http://www.buildair.de/homepage.html?ltemid=42>

David Etheridge

David Etheridge died in February 2016. He was a world-leading expert in the field of ventilation and recipient of many awards including the Royal Academy of Engineering's MacRobert award and Institution of Gas Engineers' Gold Medal. He is best known for his work on infiltration and natural ventilation and is the author of two books on the subjects. David worked for British Gas for over 20 years and the University Of Nottingham for 15. He retired from academic life in 2011 taking up taking up croquet, painting, and table tennis.



AIVC • List of board members

- Belgium: Arnold Janssens, University of Ghent • Jean Lebrun, University of Liege
- Czech Republic: Miroslav Jicha, Brno University of Technology • Karel Kabele, Czech Technical University
- Denmark: Alireza Afshari, Danish Building Research Institute, Aalborg University • Bjarne Olesen, Technical University of Denmark
- Finland: Hannu Koskela, Finnish Institute of Occupational Health • Risto Kosonen, Aalto University
- France: François Durier, CETIAT • Pierre Héran, ADEME
- Germany: Hans Erhorn, Fraunhofer Institute for Building Physics • Heike Erhorn-Kluttig, Fraunhofer Institute for Building Physics
- Italy: Lorenzo Pagliano, Politecnico di Milano
- Japan: Shigeki Nishizawa, Building Research Institute • Takao Sawachi, NILIM
- Netherlands: Wouter Borsboom, TNO • Theo Koster, VLA
- New Zealand: Manfred Plagmann, BRANZ
- Norway: Kari Thunshelle, SINTEF Byggeforsk
- Poland: Radek Górzeński, Poznan University of Technology • Tomasz Mroz, Poznan University of Technology
- Republic of Korea: Yun Gyu Lee, Korea Institute of Construction Technology • Jae-Weon Jeong, Hanyang University
- Spain: Pilar Linares Alemparte, The Eduardo Torroja Institute for Construction Science - CSIC • José Antonio Tenorio Ríos, The Eduardo Torroja Institute for Construction Science - CSIC
- Sweden: Paula Wahlgren, Chalmers University of Technology
- UK: Benjamin Jones, University of Nottingham • Maria Kolokotroni, Brunel University London
- USA: Andrew Persily, NIST • Max Sherman, LBNL

Operating agent

INIVE EEIG, www.inive.org, info@aivc.org

Peter Wouters, operating agent • Rémi Carrié, senior consultant • Maria Kapsalaki, consultant • Samuel Caillou • Stéphane Degauquier

AIVC board guests

Francis Allard • Willem de Gids • Laszlo Fulop • Zoltan Magyar • Pawel Wargocki • Hiroshi Yoshino

Representatives of organisations

Andreas Eckmanns, IEA EBC, www.iea-ebc.org

Jaap Hogeling, REHVA, www.rehva.eu

Jan Hensen, IBPSA, www.ibpsa.org

Martin Liddament, IJV, www.ijvent.org.uk

Carsten Rode, IEA EBC Annex 68, <http://www.iea-ebc-annex68.org/>

DISCLAIMER: Conclusions and opinions expressed in contributions to AIVC's Newsletter represent the author(s)' own views and not necessarily those of the AIVC