



Foreword

In 2014, the Executive Committee of the Energy in Buildings and Communities Programme of the International Energy Agency (IEA/EBC) has approved the work programme of 4 new projects that have links to various aspects of ventilation, raising the total number of running ventilation-related projects to 9, including the AIVC. It illustrates that ventilation in buildings has many different aspects. This newsletter aims to give you some information on how AIVC contributes to stimulate and foster exchanges and outputs on this topic, in particular, through the organisation of events.

Mark your agenda for the:

-36th AIVC conference, 23-24 September 2015, Madrid, Spain

We wish you a pleasant reading.



Peter Wouters
Operating Agent AIVC



35th AIVC Conference 2014: Summaries of the ventilative cooling and airtightness tracks

no 7

March 2015

Around 150 participants attended the joint 35th AIVC – 4th TightVent – 2nd venticool conference held in Poznan, Poland September 24-25, 2014. The programme consisted of 3 parallel tracks with contributions from 27 countries and international organisations. Over 100 presentations were given covering topics including air infiltration through leaks in the building envelope and ductwork, ventilation in relation to IAQ and health, ventilative cooling and thermal comfort. It has also been a major discussion place for on-going projects and initiatives such as the QUALICHeCK project and platform, the IEA EBC annex 62, the TightVent Europe and venticool platforms, the newly formed Indoor Environmental Quality – Global Alliance (IEQ-GA), etc., based on presentations of results and perspectives as well as interactions with the audience.

The **airtightness track** of the conference consisted of 6 sessions with 26 presentations. Specific topical sessions dealing with airtightness included the following topics:

- Quality issues in airtightness testing

- Durability of airtightness
- Characterisation of airtightness products
- Ductwork airtightness in new and renovated buildings

This paper available at: http://tightvent.eu/wp-content/uploads/2014/12/AIVC-2014_Airtightness-Track-Summary.pdf summarises the main trends and conclusions addressed during the presentations and discussions in the airtightness track of the conference.

The **ventilative cooling track** of the conference consisted of 4 sessions with 29 presentations. Specific topical sessions dealing with ventilative cooling included the following topics:

- Ventilative cooling and Annex 62
- Comfort in sustainable buildings

The paper available at: http://venticool.eu/wp-content/uploads/2014/12/AIVC2014_Ventilative-Cooling-Track_Summary.pdf gives an overview of the trends and conclusions based on during the presentations and discussions in the ventilative cooling track of the conference.

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Outcome of topical session "Demand Controlled Ventilation" at the 35th AIVC conference

Jelle Laverge, Ghent University, Belgium

During the joint 35th AIVC, 4th TightVent and 2nd venticool Conference held in Poznań, Poland on 23-24 September 2014, the track devoted to ventilation, indoor air quality and health included a topical session with 4 presentations on "Demand Control Ventilation strategies for residential/commercial buildings". The session was chaired by Tomasz Mroz, Professor at the Poznań University of Technology, Poland and Jelle Laverge, Ph.D., from Ghent University, Belgium.

The session addressed a variety of issues, including commissioning, energy performance characterisation, in situ performance, as well as combined DCV and room-by-room heat recovery. Despite its relatively broad scope, the following major conclusions and perspectives can be drawn from the presentations and discussions:

- Although the operation of many DCV systems is straightforward, some systems become quite complex while attempting to optimise the reduction of airflow rates. The consequences of this complexity on the systems' effectiveness in practice need to be carefully evaluated considering non-experts users who will have to operate and maintain those systems.
- In order to understand the performance of DCV systems, we tend to focus too much on the system itself (control strategy, sources and observed behaviour) and forget about building characteristics that may affect the system's operation. DCV systems are inherently linked to the buildings they are operated in. We need to consider the relevant building parameters—such as leakage level of the envelope, internal partitioning, or temperature distributions—to better characterise the performance of DCV systems.

- There is a need for a common approach to assess the performance of DCV systems. Although there are a number of reports and papers about DCV systems, there are substantial methodological differences in the approaches, making it virtually impossible to compare the results.

In summary, given the growing popularity of DCV in the market and the diversity of approaches to implement and assess such solutions, it is time to start a standardisation process for the performance evaluation.

The papers of the Demand Controlled Ventilation session will be soon available on the AIVC website so stay tuned at: www.aivc.org.



Photo: 35th AIVC - 2nd venticool - 4th TightVent joint conference in Poznan, Poland, September 24-25 2014

35th AIVC Conference, 2014: Best paper, best poster awards

Paper and poster awards were given during the closing session of the joint 35th AIVC, 4th TightVent and 2nd venticool Conference held in Poznań, Poland on 23-24 September, 2014.

1. Best paper award:

Title: 'Experimental characterisation of dominant driving forces and fluctuating ventilation rates for a single sided slot louver ventilation system'

Authors: Paul D O'Sullivan^{1, 2}, Maria Kolokotroni²

Affiliations: ¹ School of Mechanical, Electrical & Process Engineering, Cork

Institute of Technology, Cork, Rossa Avenue, Bishopstown, Cork, Ireland, ² Howell Building, Mechanical Engineering, School of Engineering and Design, Brunel University, Uxbridge UB8 3PH, United Kingdom

Download the paper from

<http://www.aivc.org/resource/experimental-characterisation-dominant-driving-forces-and-fluctuating-ventilation-rates>

2. Best poster awards:

Title: 'Derivation of equation for personal carbon dioxide in exhaled breath intended to estimation of building ventilation',

Authors: Masaki Tajima¹, Takayuki Inoue¹, Yuji Ohnishi¹

Affiliations: ¹ Kochi University of Technology Tosayamada Kami-city, Kochi, 782-8502 Japan.

Download the paper from

<http://www.aivc.org/resource/derivation-equation-personal-carbon-dioxide-exhaled-breath-intended-estimation-building>



Photo: Best paper award- 35th AIVC-2nd venticool-4th TightVent joint conference in Poznan, Poland, September 24-25 2014



Photo: Best poster award- 35th AIVC-2nd venticool-4th TightVent joint conference in Poznan, Poland, September 24-25 2014



Air Infiltration and Ventilation Centre

23-24 September, 2015: 36th AIVC conference, Madrid, Spain

The 36th AIVC conference: 'Effective ventilation in high performance buildings' will be held in Madrid, Spain together with the 5th TightVent and the 3rd venticool conferences in September 23-24, 2015. It will be a major international event in 2015 focusing on various topics relevant to ventilative cooling, airtightness, IAQ and health, as well as compliance, smart control, and BIMs (see full list of topics on:

<http://aivc2015conference.org/home/scopes-and-topics> .

The conference will consist of 3 parallel tracks:

- one track will be devoted to airtightness issues;
- one track will be devoted to ventilative cooling and thermal comfort;
- one track will be devoted to ventilation, indoor air quality and health.

The conference will include:

- plenary sessions;
- topical sessions (sessions structured around a specific topic);
- long and short oral presentations from call for papers.

Registration to the 36th AIVC – 5th TightVent - 3rd venticool: "Effective ventilation in high performance buildings" joint conference is now open.

To register online please visit:

<http://aivc2015conference.org/registration>

To submit your abstract visit:

<http://aivc2015conference.org/call-for-abstracts-and-papers/abstracts-and-papers-submission>

Programme information will follow soon so stay tuned on:

<http://aivc2015conference.org/>



venticool
the international platform for ventilative cooling



INIVE

EBC
Energy Performance of Buildings Centre

COAM
Colegio Oficial de Arquitectos de Madrid

REHVA
3E
Federation of European Heating, Ventilation and Air-conditioning Associations

ISIAQ
INTERNATIONAL SOCIETY OF INDOOR AIR QUALITY AND CLIMATE

International BUILDAIR Symposium

16-17 March 2015, Workshop, Lund –Voluntary and Regulatory Frameworks to Improve Quality and Compliance of ventilation and airtightness

Around 55 participants from 16 countries attended the international workshop on "Ventilation and Airtightness in Buildings: Voluntary and Regulatory Frameworks to Improve Quality and Compliance" which was held in Lund, Sweden on March 16-17, 2015.

One topic of specific attention was schemes implemented in various countries to reduce errors in ventilation and airtightness input data used in energy performance certificates and to improve the quality of the works. Discussions were based on analyses of lessons learnt from field data.

Specific sessions included:

- outcomes of QUALICheck;
- building ventilation: industry initiatives- opportunities and challenges for manufacturers;
- selected approaches addressing quality and compliance in various countries- concerns for innovation;
- swedish approach to quality and compliance;
- steps to improve the reliability of EPC input data and quality of the works in the Belgian context;
- status on the ground and industry-driven initiatives in the French regulatory context;
- developing effective compliance frameworks;

- conclusions and perspectives.

This workshop was a joint initiative from: AIVC (Air Infiltration and Ventilation Centre), the QUALICheck consortium, TightVent (Building and Ductwork Airtightness Platform) and venticool (the international platform for ventilative cooling).

Recordings of the presentations during the workshop will be soon available so stay tuned on:

<http://qualicheck-platform.eu>

18-20 May, 2015, Conference, Eindhoven- Healthy Buildings 2015 Europe

We are pleased to announce the first of two regional conferences of the Healthy Buildings series convened in 2015 by the International Society for Indoor Air Quality and Climate, ISIAQ.

Healthy Buildings 2015 Europe, will take place in Eindhoven, The Netherlands from May 18th to May 20th 2015. The main focus of the series is practice and practical applications leading up to the creation of healthy buildings. With Healthy Buildings 2015 Europe the aim is to provide a platform to exchange views and gain knowledge from adjacent scientific fields.

The conference will include platform presentations, posters, workshops and symposia, all related to indoor environmental practice and science.

Please visit the conference website for more information about the program, plenaries and other events:

<http://hb2015-europe.org>.

Registration is now open at:

<http://hb2015-europe.org/registration/>



Feedback on 1st QUALICHeCK Conference

The 1st international QUALICHeCK Conference "Towards improved compliance and quality of the works for better performing buildings" was organised on 30 September 2014 in Brussels. The event represented a major physical opportunity to expand dialogue on compliance and quality issues for energy efficiency in buildings, with the initial QUALICHeCK project findings used as one of the starting points for discussion.

The Conference covered among others:

- The overall scene regarding compliance and quality of the works for energy efficient buildings.
- Lessons learned from major EU initiatives regarding reliability of Energy Performance Certificate input data and quality of the works.
- Experience from industry representatives regarding reliable energy performance data and challenges in respect to quality of the works.
- The QUALICHeCK action and networking perspectives.

The conference presentations are available at: <http://qualicheck-platform.eu/2014/10/1st-qualicheck-international-conference-files/>

8-9 May 2015, Kassel, Germany - 9th International BUILDAIR-Symposium

The BUILDAIR symposium programme includes a variety of presentations of practical experience in airtightness planning and testing, quality controls, thermography and ventilation systems. Feel free to visit <http://www.buidair.eu> for more information.



AIVC • List of board members

Belgium: Arnold Janssens, *University of Ghent* • Jean Lebrun, *University of Liege*

Czech Republic: Miroslav Jicha, *Brno University of Technology* • Karele Kabele, *Czech Technical University*

Denmark: Bjarne Olesen, *Technical University of Denmark* • Alireza Afshari, *Danish Building Research Institute, Aalborg University*

Finland: Hannu Koskela, *Finnish Institute of Occupational Health* • Risto Kosonen, *Halton*

France: François Durier, *CETIAT* • Pierre Hérant, *ADEME*

Germany: Hans Erhorn, *Fraunhofer Institute for Building Physics* • Heike Erhorn-Kluttig, *Fraunhofer Institute for Building Physics*

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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*

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

Jaap Hogeling, *REHVA*, www.rehva.eu

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

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