



# Newsletter

## Air Infiltration and Ventilation Centre

## Foreword

AIVC aims to play a central role in the ventilation and infiltration community with respect to the dissemination of information, either with its conferences or workshops, or with the material available on its website. The annual conferences continue to be greatly appreciated: 96 % of a sample of 76 conference attendees rated the 34<sup>th</sup> conference as excellent or satisfactory, 91% would recommend it to others. As you will see in this newsletter, we are working to uphold this quality for our future events.

We also hope the brand new AIVC website, including its advanced search capabilities on over 18000 publications, will experience similar success.

Please feel free to visit our website to find out more and mark your agenda for the following AIVC events:

- Workshop on Quality of Methods for Measuring Ventilation and Air Infiltration in Buildings on March 18-19, 2014 in Brussels
- 35<sup>th</sup> AIVC conference on September 24-25, 2014 in Poznań, Poland

Peter Wouters, Operating Agent AIVC



# no 5

January 2014

## New AIVC website

The new AIVC website was launched in November, 2013. Since 2001, the AIVC website had the same look and feel and we thought it was time for a fundamental change. In addition to the new look and feel, some of the major changes are:

- More interactive website with easier navigation
- More powerful search engine for AIRBASE
- Home page with highlights on news, events and publications

At present, AIRBASE contains abstracts of 18868 publications and more than 5000 related full documents. It is the intention to achieve in the coming months a substantial growth of full documents in AIRBASE.

The screenshot shows the AIVC website homepage. At the top, there's a banner with the AIVC logo and the text 'Air Infiltration and Ventilation Centre'. Below the banner, there's a navigation bar with links: Home, About, AIVC Countries, Events, Resources, FAQ, Contact us. There's also a search bar and a 'LOGIN' button. The main content area is divided into several sections: 'Recent News' with a link to 'New AIVC website on-line!', 'Highlighted News' with a link to '35th AIVC conference in Poznań - Abstract...', 'AIRBASE' with a link to 'Click here for searching in a database of 17.000 publications with more than 5000 pdf documents', 'Did you know?' with a link to 'Why is Ventilation Needed?', 'Top events' with links to 'September 24-25, 2014: 35th AIVC conference in Poznań, Poland' and 'March 18-19, 2014: AIVC workshop on Quality of Methods for Measuring Ventilation and Air Infiltration in...', 'Key Publications' with a link to 'TN 67: Building airtightness: a...', and 'Securing the quality of ventilation...'. Each section has a 'MORE' button.

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# Air Infiltration and Ventilation Centre

## 34<sup>th</sup> AIVC Conference, 2013: Summaries of ventilative cooling and airtightness tracks

Over 160 persons attended the joint 34<sup>th</sup> AIVC, 3<sup>rd</sup> TightVent, 1<sup>st</sup> venticool and 2<sup>nd</sup> Cool Roofs' Conference held in Athens, Greece on 25-26 September, 2013. The conference focused on research, technologies, policies and market transformation to employ in an optimal way proper mitigation and adaptation techniques with the aim to reduce the energy consumption of buildings and improve the urban microclimate. Furthermore, focus was set on the energy impact of ventilation and air infiltration while ensuring good indoor air quality and thermal comfort, as well as converging work on smart materials to reduce the carbon footprint of the building sector.

Ventilative cooling was one of the major themes since the potential of this technique is more and more considered to reduce the cooling energy demand in summer or mid-season conditions, depending on outdoor climate, building design and internal loads. The ventilative cooling track of the conference consisted of 4 sessions with 27 presentations covering the following topics:

- Ventilation for summer comfort – energy impacts
- Experience with ventilative and passive cooling
- Ventilation and cooling strategies
- Ventilative cooling in standards and regulations—Challenges for Annex 62

Building and ductwork airtightness was another major theme of the conference. The airtightness track of the conference consisted of 4 sessions with 16 presentations covering the following topics:

- Collection and analysis of field data
- Quality of ventilation systems
- Methods for characterising airtightness – Durability
- Ventilation and airtightness nearly zero-energy buildings

The papers available at

[venticool.eu/wp-content/uploads/2013/12/VC-summary\\_VF-2.pdf](http://venticool.eu/wp-content/uploads/2013/12/VC-summary_VF-2.pdf)

and

[tightvent.eu/wpcontent/uploads/2013/12/Airtightness-summary\\_V02.pdf](http://tightvent.eu/wpcontent/uploads/2013/12/Airtightness-summary_V02.pdf)

give a bird's eye view of trends and conclusions that appeared in the presentations and discussions in the ventilative cooling and airtightness tracks of the conference.

## Opening & Closing session highlights at the 34<sup>th</sup> AIVC conference

During the opening session of the joint 34<sup>th</sup> AIVC conference in Athens, **Peter Wouters, Manager of INIVE EEIG**, presented a historic perspective of ventilation and air infiltration in buildings starting from 1973 and moving up to today with a time step of 10 years and looking ahead in the future. The presentation highlighted the first oil crisis in 1973 and its impacts on energy conservation policies and programs in that period (e.g. a lot of attention on airtightness – AIC – Air Infiltration Centre). It stressed the growing role of international collaboration in the 80's and the key role of e.g. AIVC to increase knowledge on air infiltration and ventilation, other key initiatives such as the Healthy Buildings or IBPSA conferences, augmented in the 90's by ISIAQ and EPIC conferences and a number of large international projects. Peter Wouters also acknowledged the political support with the creation of the IPCC in 1988, the Kyoto protocol in 1997, and (in Europe) the European Energy

Performance of Buildings Directive in 2002 and its 2010 recast. This has led to major changes in the building design and solutions that must take into account indoor environmental quality together with economic constraints. There is still much work to be done to generalize NZEBs with almost no learning curve. Fortunately, international collaboration can surely help developing and disseminating guidance for training, legislation, etc...

Download the full summary of Peter Wouters' presentation here:

<http://goo.gl/0hNQck>

The closing session of the conference included a presentation by **Francis Allard, professor at the University of La Rochelle**, in France. The presentation focused on Energy Performance and Indoor Climate covering the main progress and perspectives in the last 20 years in the fields of: modelling tools, materials and components, the indoor environment quality concept, integration of environmental challenges, evolution of the regulation frame and accompanying initiatives. The presentation also highlighted the main characteristics of the Building Energy and Environmental System namely as multi-scale in space and time, multi-factorial, multi-performance objective (energy, IAQ ...), multi-disciplinary and multi-purpose (application point of view). The speaker acknowledged the huge steps and efforts made during the last 20 years in research and development and the support by strong policies. The speaker stressed the need for the continuation of the development of models, new metrics, technology developments from components to systems and an occupant centered conceptual evolution.

Download the full summary of Francis Allard's presentation here:

<http://goo.gl/B8MrUS>





## 34<sup>th</sup> AIVC Conference, 2013: Best paper, best poster awards

Paper and poster awards were given during the closing session of the joint 34<sup>th</sup> AIVC, 3<sup>rd</sup> TightVent, 1<sup>st</sup> venticool and 2<sup>nd</sup> Cool Roofs' Conference held in Athens, Greece on 25-26 September, 2013.

### 1. Best paper award:

> **Title:** 'Toward Designing Strategies for Urban heat island Mitigation based on Multiscale Flow considerations'

**Authors:** Marina K.-A. Neophytou<sup>1</sup>, Eleonora Tryphonos<sup>1</sup>, Paris Fokaides<sup>1</sup>, Mats Sandberg<sup>2</sup>, Ekaterina Batchvarova<sup>3</sup>, Harindra J.S. Fernando<sup>4</sup>, Jos Lelieveld<sup>5,6</sup>, Georgios Zittis<sup>5</sup>

**Affiliations:** <sup>1</sup> Environmental Fluid Mechanics Laboratory, Department of Civil and Environmental Engineering, University of Cyprus, <sup>2</sup> KTH Research School, University of Gavle, <sup>3</sup> National Hydrometeorological Institute, Bulgaria, <sup>4</sup> Department of Civil & Environmental Engineering and Earth Sciences, University of Notre Dame, USA, <sup>5</sup> Energy, Environment and Water Research Center, The Cyprus Institute, <sup>6</sup> Max Planck Institute for Chemistry, Mainz

### 2. Best poster awards:

> **Title:** 'Effect of ageing processes and atmospheric agents on solar reflectivity of clay roofing tiles'

**Authors:** Chiara Ferrari<sup>1,2</sup>, Ali Gholizadeh Touchaei<sup>2</sup>, Mohamad Sleiman<sup>3</sup>, Antonio Libbra<sup>1</sup>, Alberto Muscio<sup>1</sup>, Cristina Siligardi<sup>1</sup>, Hashem Akbari<sup>2</sup>

**Affiliations:** <sup>1</sup> Dept. of Engineering "Enzo Ferrari" University of Modena and Reggio Emilia, <sup>2</sup> Heat Island Group, Building, Civil and Environmental Engineering Department Concordia University,

<sup>3</sup> Heat Island Group, Lawrence Berkeley National Laboratory

> **Title:** 'Preferred air velocity and local cooling effect of desk fans in warm environments'

**Authors:** Angela Simone<sup>1</sup> and Bjarne W. Olesen<sup>1</sup>

**Affiliation:** <sup>1</sup> International Center for Indoor Environment and Energy, Department of Civil Engineering at Technical University of Denmark

> **Title:** 'Considering the Attica Example: Hotel location as a determinant factor of tourist carbon footprint'

**Authors:** Stella Panayioti Pieri<sup>1</sup>, Panayiotis Kouyias<sup>1</sup>, Vasiliki Milioni<sup>1</sup>, Athanasios Stamos<sup>1</sup>, Ioannis Tzouvadakis<sup>1</sup>

**Affiliations:** <sup>1</sup> National Technical University of Athens

Download the pdf here:  
<http://goo.gl/Kf9Bz1>

## New publications

On 18-19 March 2013, an international workshop was organized in Brussels to discuss existing approaches to secure the quality of residential ventilation systems in various countries. The edited proceedings of the workshop: 'Securing the quality of ventilation systems in residential buildings: existing approaches in various countries' are now available for download at: <http://goo.gl/CN1WI2>

## March 18-19, 2014: AIVC workshop on Quality of Methods for Measuring Ventilation and Air Infiltration in Buildings

INIVE, on behalf of the AIVC, TightVent (Building and Ductwork Airtightness Platform); and venticool (the European platform for ventilative cooling, [www.venticool.eu](http://www.venticool.eu)) organizes a 1, 5-day

workshop on: Quality of methods for measuring ventilation and air infiltration in buildings. The workshop will primarily address field measurement of airflow rates, air exchange rates, air velocities, and pressures. Discussions and presentations may also include laboratory measurements as well as methods for measuring air temperature, air humidity, contaminants, energy use and power related to ventilation and infiltration in buildings. The methods will address natural, hybrid or mechanical ventilation, including ventilative cooling. Speakers will also give background information on readily-available measurement techniques.

More information on the programme and speakers will be soon available at our website: [www.aivc.org](http://www.aivc.org)

## IEECB 2014 Conference, Frankfurt, Germany, 2-3 April 2014

The 8<sup>th</sup> International Conference on Improving Energy Efficiency in Commercial Buildings (IEECB'14) jointly organised by Messe Frankfurt and the European Commission DG JRC in conjunction with the Building Performance Congress will take place on 2 and 3 April 2014 in Frankfurt, Germany. The wide scope of topics covered include: smart building and low energy buildings, (Nearly) Net Zero Energy Buildings, equipment and systems (lighting, HVAC auxiliary equipment, ICT & office equipment, miscellaneous equipment, BEMS, electricity on-site production, renewable energies, etc.) and the latest advances in energy efficiency programmes, regulation & policies for public and private sector commercial buildings.

For more information visit the conference website at: [iet.jrc.ec.europa.eu/energyefficiency/upcoming-events](http://iet.jrc.ec.europa.eu/energyefficiency/upcoming-events)



## Air Infiltration and Ventilation Centre

### Indoor Air 2014 Conference, Hong Kong, China, July 7-12, 2014

Indoor Air 2014 is the official conference of the International Society for Indoor Air Quality and Climate, ISIAQ. The triennial conference first began in 1978 to promote the science of IAQ and climate; it was held in Copenhagen, Denmark. The last Indoor Air 2011 conference was held in Austin, Texas.

Indoor Air 2014 is co-organised by The University of Hong Kong, Hong Kong University of Science and Technology, Hong Kong Polytechnic University and City University of Hong Kong. The event will be held on July 7-12, 2014 In Hong Kong, China and is co-sponsored by the AIVC.

For more information visit the conference website: [www.indoorair2014.org](http://www.indoorair2014.org)

### September 24-25, 2014: 35<sup>th</sup> AIVC conference, Poznań, Poland

The 35<sup>th</sup> AIVC conference: 'Ventilation and airtightness in transforming the building stock to high performance' will be held in the city of Poznań, Poland together with the 4<sup>th</sup> TightVent and the 2<sup>nd</sup> venticool conferences in September 24-25, 2014.

The conference is organised by:

- the International Network on Ventilation and Energy Performance (INIVE) on behalf of the Air Infiltration and Ventilation Centre (AIVC), TightVent Europe (the Building and Ductwork Airtightness Platform), venticool (the international platform for ventilative cooling); and
- the Poznań University of Technology.

Important dates:

- Receipt of abstracts: 15 March 2014
- Confirmation of acceptance: 1 May 2014
- Submission of papers: 30 June 2014

Visit the conference website  
[www.aivc2014conference.org](http://www.aivc2014conference.org)  
for programme and registration 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*

**Greece:** Mat Santamouris, *NKUA University of Athens*

**Italy:** Lorenzo Pagliano, *Politecnico di Milano*

**Japan:** Shigeki Nishizawa, *NILIM* • Takao Sawachi, *Building Research Institute*

**Netherlands:** Kees De Schipper, *VLA* • Wouter Borsboom, *TNO*

**New Zealand:** Manfred Plagmann, *BRANZ*

**Norway:** Peter Schild, *SINTEF Byggforsk*

**Poland:** Tomasz Mróz, *Poznan University of Technology* • Andrzej Górka, *Poznan University of Technology*

**Republic of Korea:** Yun Gyu Lee, *Korea Institute of Construction Technology* • Jae-Weon Jeong, *Hanyang University*

**Sweden:** Carl-Eric Hagentoft, *Chalmers University of Technology* • Paula Wahlgren, *Chalmers University of Technology*

**USA:** Andrew Persily, *NIST* • Max Sherman, *LBNL*

#### Operating agent

INIVE EEIG, [www.inive.org](http://www.inive.org), [info@aivc.org](mailto:info@aivc.org)  
Peter Wouters, *operating agent* • Rémi Carrié, *senior consultant* • Maria Kapsalaki, *consultant* • Samuel Caillou • Stéphane Degauquier

#### AIVC board guests

Francis Allard • Morad Atif • José Maria Campos • Willem de Gids • Laszlo Fulop • Maria Kolokotroni • Zoltan Magyar • Hiroshi Yoshino

#### Representatives of organisations

Andreas Eckmanns, IEA EBC, [www.iea-ebc.org](http://www.iea-ebc.org)  
Jaap Hogeling, REHVA, [www.rehva.eu](http://www.rehva.eu)  
Jan Hensen, IBPSA, [www.ibpsa.org](http://www.ibpsa.org)  
Martin Liddament, IJV, [www.ijvent.org.uk](http://www.ijvent.org.uk)

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