

## Workshops at Healthy Buildings 2015

Monday 18<sup>th</sup> May from 15.45 till 17.15

### **Workshop (14) Ventilative Cooling & Annex 62**

Theme: (D) Energy & sustainability

The current trend in building energy efficiency towards nearly zero energy buildings creates a number of new challenges for building design and construction. One of the major challenges is the increased need for cooling in highly insulated and airtight buildings, which is not only required in summer and midseason periods, but can also be needed in winter, particularly in office buildings.

Ventilative cooling is the application of ventilation airflow to reduce the cooling loads in buildings. It utilizes the cooling and thermal perception potential of outdoor air.

Moderators:

Per Heiselberg, Aalborg University, Denmark

Marcel Schweiker, Karlsruhe Institute of Technology, Germany

Paper presentations:

Ivan Pollet , Renson/Ghent University, Belgium:

(460) Residential ventilative cooling in national energy performance regulations: Requirements and impact on energy consumption and overheating.

Rebeca Barbosa, CVUT Czech republic:

(622) The impact of increased airflow rates on indoor temperatures of passive house in The Netherlands.

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### **Workshop (3) IEQ and productivity, an Action Plan for Progress and Influence.**

Theme: (C) Behaviour & environment psychology;

How should we plan to progress and translate the research to commercial influence and outcomes. Specific reference will be given to the much published World Green Building Council publication "Health, Wellbeing and Productivity in Offices: the Next Chapter for Green Building".

Moderators:

Vyt Garnys, CETEC, Australia

Pawel Wargocki, Technical University of Denmark, Denmark

Paper presentation:

Sayana Tsushima, Waseda University Japan:

(420) Indoor environmental quality and workers' productivity in electricity-saving offices...through the experience of the great east japan earthquake in 2011.

Tuesday 19<sup>th</sup> May from 11.00 till 12.30

## **Workshop (15) Chemical pollutants and Health**

Theme: (E) Sources & exposure

Semi-volatile organic compounds (SVOCs) are of concern due to their established or suspected health effects and due to the widespread exposure through different environmental media and pathways.

- 1) B Gaëlle Raffy : Neurotoxic SVOC in house settled dust: contamination and determinants.
- 2) Corinne Mandin: Nationwide estimates of SVOC concentrations in settled dust and suspended particles in French dwellings.
- 3) Corinne Mandin : Health effects of BTEX: are indoor ambient levels a problem, especially endocrine disrupting, and the health ranking of indoor pollutants
- 4) Stelios Kephelopoulos: European product labelling schemes one scheme for all products and countries possible?
- 5) Ineke Thierauf introduction discussion statements.

Moderators:

Corinne Mandin, CSTB, France

Ineke Thierauf, The Netherlands

Paper presentations:

Corinne Mandin, CSTB, France:

(656) Nationwide Estimates of Semi-Volatile Organic Compounds Concentrations in settled dust and suspended particles in French Dwellings.

Barbara Le Bot, Ehesp-School of public health, Rennes, Sorbonne Paris Cité, France:

(494) Neurotoxic semi volatile organic compounds in house settled dust: contamination and determinants. (Presenter: Gaëlle Raffy, EHESP-School of Public Health, France)

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Tuesday 19<sup>th</sup> May from 11.00 till 12.30

**Workshop (2) Improving energy efficiency, IEQ and health**

Theme: (D) Energy & sustainability

Within EU, Energy Performance of Buildings Directive (EPBD) is a major force aiming for reduction of energy consumption in the housing sector. Both new and existing buildings are targeted, promoting Nearly Zero-Energy Buildings (NZEB) and energy retrofits. The directive also aims to develop energy performance certificate (EPC) to become a real, active energy label of houses.

Moderators:

Ulla Haverinen-Shaughnessy, National Institute for Health and Welfare, Finland

Matthias Braubach, World Health Organization, Germany

Invited presentations:

Pawel Wargocki, Effective source control and ventilation strategies for better IEQ

Ulla Haverinen-Shaughnessy, Finland: Insulate project and other research

Linn Johnsen, European Commission Directorate General for Energy Efficiency,

Brussels: EPBD recast and its effects on indoor environmental quality and health

Tuesday 19<sup>th</sup> May from 11.00 till 12.30

**Workshop (8) Supporting biorhythm with the Circadian House concept**

Theme: (F) Physical response & physiology

How should a residential house be designed, if the health and well-being of the inhabitants were the primary design criteria? Can the design of a building support the basic human circadian rhythm? Can the design promote a healthy and active lifestyle? How can we push towards sustainable and energy efficient constructions, without neglecting the health and well-being of the occupants?

Moderators:

Kartsen Duer, Danish Building Research Institute, Denmark

Koen Steemers, University of Cambridge, United Kingdom

Invited Presentations:

Koen Steemers, An Architect's understanding of how circadian principles can be applied in the design of houses.

Myriam Aries, Eindhoven University of Technology, Home design that bridges human behavior and needs with daylight

Fergus Nicol, Oxford Brooks University, The relation between thermal comfort, variability and contact to nature

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Tuesday 19<sup>th</sup> May from 11.00 till 12.30

**Workshop (16) What is IEQ without acoustics?**

Theme: (C) Behaviour & environment psychology

Acoustics is an important issue in buildings. Research shows that poor acoustics ranks high in questionnaire. Good acoustics prevents irritation and provides good communication concentration. Acoustics is an ommissible part of healthy buildings

Moderators:

Carsten Svensson, Ecophon, Sweden

Ep Marinus, The Netherlands

Paper presentations:

Nigel Oseland, Workplace Unlimited, United Kingdom:

(651) Psychoacoustic and people-centred approach (Presenter: Paige Hodsman)

Martijn Vercammen, Peutz, The Netherlands:

(652) Concrete core activation and suspended ceilings: designing for comfort, energy efficiency and good acoustics

Colin Campbell, Saint-Gobain Ecophon AB, Sweden

(655) The challenge of meeting both acoustic and thermal comfort in 21st century school (Presenter: Guus Klamerek, Ecophon, The Netherlands)

Tuesday 19<sup>th</sup> May from 13.30 till 15.00

## **Workshop (4) Improving IAQ with air cleaners?**

Theme: (E) Source & Exposure

Air cleaning systems are a popular solution for reducing pollutant concentration in many indoor environments. Different air cleaning technologies are continuously being introduced to the market and their availability often precedes scientific information on their impact on indoor environments.

### Moderators

Alireza Afshari, Aalborg University, Denmark

Marco Hofman, ISSO, The Netherlands

### Paper/invited presentations

Jinhan Mo, Tsinghua University, China:

Evidence of health benefits of air cleaning by biomarkers in healthy adults

Alireza Afshari, Aalborg University, Denmark:

(547) Long Term Performance of Particulate Air-filter in an Office Environment

Stepán Lorencik, Eindhoven University of Technology, the Netherlands:

(539) Indoor Air Quality Improvement by Photocatalytic Oxidation

Jeffrey Siegel, University of Toronto, Canada:

Are we trading off energy and health with air cleaners?

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Tuesday 19<sup>th</sup> May from 13.30 till 15.00

## **Workshop (5) Healthy and energy-efficient school buildings**

Theme: (D) Energy & sustainability

Healthy and energy-efficient school buildings should combine a good indoor environment (light, acoustics, thermal comfort, air quality) with low energy use. When designing healthy and energy-efficient school buildings, conflicting choices arise from the different indoor environment quality (IEQ) factors and from indoor environment quality requirements and energy-efficiency. The co-operation in the design team, budget and planning also play a role.

In this workshop, we would like to focus on the design process of school buildings as well as the use of school buildings: How can the design team deliver a healthy and energy-efficient school building within the limits of the available budget and time? How can we maintain a healthy and energy-efficient school building during its lifetime.

Moderators:

Chrit Cox, Nelissen ingenieursbureau, the Netherlands

Marianne Stranger, VITO, Belgium

Paper presentations:

Chrit Cox, Nelissen ingenieursbureau, the Netherlands:

(468) Designing healthy and energy-efficient school buildings: coping with conflicting requirements

Marianne Stranger, VITO, Belgium:

(550) Improving school indoor air quality

João Cavaleiro Rufo, INEGI, Portugal:

(385) Indoor air quality in primary schools: preliminary results of the ARIA Project

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Wednesday 20<sup>th</sup> May from 11.00 till 12.30

**Workshop (11) Health effects of insulation materials and sealants**

Theme: (E) Sources & exposure

This workshop will focus on health aspects of various insulation materials. The question will be addressed what steps stakeholders (science, industry, governments, consumers) can take to prevent health risks from insulation and building materials.

Moderators:

Rik Bogers, National Institute for Public Health and the Environment, The Netherlands

Miranda Mesman, National Institute for Public Health and the Environment, The Netherlands

Paper presentations:

Boris Lazarov, VITO, Belgium:

(586) The optimisation of a new low volume air sampling method for the determination of flame retardants

Marie Frederiksen, Danish Building Research Institute, Denmark:

(511) Laboratory tests of in situ methods of PCB extraction from contaminated building materials

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Wednesday 20<sup>th</sup> May from 11.00 till 12.30 in Auditorium 12/2

**Workshop (6) European IAQ standardization & EN 15251**

Theme: (B) Politics, policy & law

EN15251 specifies how design criteria can be established and used for dimensioning of systems. The standard how to establish and the main parameters to be used as input for building energy calculation and long term evaluation of the indoor environment. Finally the standard identifies parameters to be used for monitoring and displaying of the indoor environment as recommended in the Energy Performance of Buildings Directive.

Moderators:

Jarek Kurnitski, Tallinn University of Technology, Estonia

Bjarne Olesen, Technical University of Denmark, Denmark

Paper/invited presentations:

Jaap Hogeling, ISSO, the Netherlands:

Christopher Muller, Purafil, Inc., USA:

(602) Energy Conservation and Improved IAQ with Existing Ventilation Standards

Wednesday 20<sup>th</sup> May from 11.00 till 12.30

### **Workshop (12) IEQ in housing for aging adults**

Theme: (F) Physical response & physiology

Aged population is growing in most affluent societies of the western world, increasing in absolute and relative terms. This has a major impact on the delivery of health care, including acute and emergency services.

Moderators:

Helianthe Kort, Eindhoven University of Technology, The Netherlands

João Paulo Teixeira PhD, ISPUP-Porto University, Portugal

Papers/invited presentations:

Helianthe Kort, Eindhoven University of Technology, The Netherlands:

Teaser about IEQ and aging adults

Emelieke Huisman, Hogeschool Utrecht, the Netherlands :

(520) Visual discomfort measurements of healthcare professionals in nursing homes

Ana Mendes, National Institute of Health Dr. Ricardo Jorge, Portugal ((Presenter:

JoãoTeixeira, ISPUP- Porto University, Portugal)

(402) Elderly care centers indoor environments and health

Eline Vermeulen, BBA Binnenmilieu, the Netherlands:

(645) A new and improved living environment for elderly with dementia

Wednesday 20<sup>th</sup> May from 11.00 till 12.30

### **Workshop (1) Healthy building with the Active House vision**

Theme: (A) Design & technology

Active House is a vision that aims for healthy buildings. The vision has the goal to improve the indoor climate and has developed specifications to help building owners to decide what levels to reach for in the performance of their building. But knowing what to aim for and how to do it is not enough. With what arguments can building owners or tenants invest in their building to make it into a healthy building? There has been research done for specific subjects within a better indoor environment that give positive results

Moderators:

Atto Harsta, Aldus Bouwinnovatie, the Netherlands

Kurt Emil Eriksen, Velux, Denmark

Paper presentation:

Jelle Laverge, Ghent University, Belgium

(492) Sleeping in an active house: the occupant's experience

Wednesday 20<sup>th</sup> May from 13.30 till 15.00

### **Workshop (7) Indoor PM<sub>2,5</sub> Measurement and evaluation**

Theme: (A) Design & technology

Fine particles in the indoor air are a major health concern. In a report published in the CAFÉ program in 2005 it is estimated 3.7 million years of life is lost annually inside the European Union due to particle pollution. This amount is equivalent to 348 000 premature deaths.

The exposure to fine particles indoors can be significantly reduced by air cleaners and filtration of supply air.

Moderators

Piet Jacobs, TNO, The Netherlands

Jorma Säteri, Helsinki Metropolia University of Applied Sciences, Finland

Paper presentations:

Piet Jacobs, TNO, The Netherlands:

(541) PM<sub>2,5</sub> measurement protocol for offices

Jorma Säteri, Helsinki Metropolia University of Applied Sciences, Finland:

(574) Indoor PM<sub>2.5</sub> air quality index

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Wednesday 20<sup>th</sup> May from 13.30 till 15.00

### **Workshop (10) The future of IEQ sciences**

Theme (B): Politics, policy & law

IEQ sciences in Europe are becoming more and more energy and engineering. Engineers often forget about the people that spend their time indoors. Some of us sometimes wonder why we are still working on heating and ventilation if no one is paying attention to health, comfort and productivity. Not only in research, but also as a consultant.

This discussion on the future of IEQ has been done quite often in restaurants, bars and other places where we usually meet after conference day is over. We think it's time to discuss this topic in a more serious environment.

Moderators:

Froukje van Dijken, BBA Binnenmilieu, The Netherlands

Barbara Kolarik, Danish Building Research Institute, Denmark

Paper presentations:

Ben Bronsema, Bronconsult, the Netherlands:

(390) Earth, Wind & Fire - Natural Air-conditioning

Eduardo Oliveira Fernandes, Porto University, Portugal:

(426) Monitoring and auditing of indoor air quality in European buildings: status and perspectives

Wednesday 20<sup>th</sup> May from 13.30 till 15.00

**Workshop (9) IEQ related litigation increase**

Theme: (B) Politics, policy & law

Within Europe the number of law suits related to indoor environmental quality and health & comfort is steadily growing. Traditionally IEQ problems were often solved without the involvement of lawyers and judges. But nowadays conflicts between end-users of buildings and their designers and developers all too often end up in court, with substantial financial damages involved.

Moderators:

Sue Roaf, Heriot-Watt University, United Kingdom

Atze Boerstra, BBA Binnenmilieu, The Netherlands

Paper presentations:

Paula Sassi, Oxford Brookes University, United Kingdom:

(653) Indoor environment quality: legislation and regulations implementation in the United Kingdom

Paul Touhy, University of Strathclyde, United Kingdom:

(654) IEQ Performance Gaps: Failure modes, litigation risks, and the need for quality.

Runa Hellwig, National University of Singapore, Singapore:

(649) Laws, regulations and their interpretation: The case of high indoor temperatures in Germany

Wednesday 20<sup>th</sup> May from 13.30 till 15.00:

**Workshop (13) Micro-organisms (Sloan Symposium)**

Theme: (E) Sources & exposure

The intent of the Sloan Symposium is to focus on the challenges practitioners face in using and interpreting molecular methods to characterize the indoor microbiome. The Sloan Symposium begins with Pitkaranta's plenary lecture, followed by two technical sessions with invited presentations, then the proposed workshop. The technical session presentations will cover a range of topics to lay the ground work for applying the science to practice. The workshop, open to all conference attendees, will solicit input from the audience on the challenges practitioners face (or perceive to exist) for applying and interpreting the results of molecular methods to indoor microbiome studies.

Moderators:

Hal Levin, Building Research Group, Santa Cruz, California, USA

Martin Täubel, National Institute for Health and Welfare, Finland

Mark Hernandez, University of Colorado Boulder, USA