Integration for whole life building performance

Session programme

14-15 APRIL
HERIOT-WATT UNIVERSITY EDINBURGH

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# Day one – morning

**08:45 – Registration and refreshments**

**09:30 Room A**

**Tim Dwyer, Symposium Chair**  
**Welcome: Representative from Heriot-Watt University**  
**Opening address: John Field, CIBSE President Elect and Native-Hue Ltd**

**9:45 Room A  Session 1**

Integral Design to improve communication and sub-solution generation in building design collaboration  
Wim Zeiler, University of Technology Eindhoven, Netherlands

**10:10 – Parallel sessions**

| Room A | **Session 2 – Integrating technology to ‘close the loop’**  
Chair: Cathie Simpson, CIBSE Vice President, Building Simulation Ltd  
The role of crowd-sourced data in improving the accuracy of energy use forecasts  
Judit Kimpian, AHR  
Practical use of CO₂ sensors for early life cycle energy and comfort performance  
Sarah Noye, Imperial College London | Room B | **Session 3 – Solutions for a real world**  
Chair: Karen Jackson, Hurley Palmer Flatt  
Development of calibrated operational models of existing buildings for real-time decision support and performance optimisation  
Daniel Coakley, Integrated Environmental Solutions (IES) Ltd.  
An investigation of cooling unit performance on the London underground train network  
Graeme Maidment, London South Bank University | Room C | **Session 4 – Collaborating to succeed**  
Chair: Tim Rook, BESA  
Using SysML as a collaboration tool in MEP engineering  
Michael Wigington, Imperial College London and J Dunton Associates Ltd  
Reducing data centre risk and energy consumption through stakeholder collaboration  
Sophia Flucker, Operational Intelligence Ltd | *

| The use of low cost infrared cameras for checking thermal insulation and other building services applications  
Colin Pearson, BSRIA | Real-world validation of climate-based daylight metrics: mission impossible?  
John Mardaljevic, Loughborough University  
Case Study: Investigation into the Possible Benefits of Joint Resistance-Based Thermal Modelling  
Liam Commins, London South Bank University | Domestic overheating – an integrated approach from designer to occupant  
William Wright, BRE  
Zero energy retail – a breathing building for Costa Coffee  
Owen Connick, Breathing Buildings |
11:50 Room A  Session 5 – Symposium sponsor address  Chris Goggin, Rinnai UK

11:55 Room A  Session 6 – Compendiary presentations Chair: Phil Jones, Chair CIBSE Energy Performance Group, Building Energy Solutions

Evaluation of passive cooling design technologies in residential building in mauritius
Najiah Kaudeer, Scene Ries Consult Ltd, Mauritius

Using Passivhaus methodology to eliminate the performance gap in large scale non-domestic UK buildings – the growing evidence Jonathan Hines, Architype

Acoustic insulation for mechanical spaces, reducing noise and vibration caused by MEP services Mete Oguc, Acrefine Engineering Services Ltd.

A prototype environmental control strategy using a user-centred approach for residential facilities
Maral Rahmani, University of Southern California

12:20 – Lunch and posters

Day one – afternoon

13:20 – Parallel sessions

Room A  Session 7 – BIM for real projects
Chair: Charlotte Mercer, Cundall

Digital masterbuilders: modernising communication between designers and constructors
Edward Godden, Ingleton Wood LLP

BIM for integrated design, construction, commissioning, operation and maintenance
Barry Wormald, THINK BIM

Identifying use cases and data requirements for BIM based energy management processes
Hendro Wicaksono, Karlsruhe Institute of Technology, Germany

Application of NRM3 in asset data classification In BIM: A Case Study Report
Dolapo Oluteye, University College London

Room B  Session 8 – Enhancement through assessment
Chair: John Field, CIBSE President Elect and Native-Hue Ltd.

Impact of carbon reduction plans on building energy in US mega cities
Benjamin Skelton, cycloneENERGYgroup

NABERS: Everybody needs good NABERS
Ian Van Eerden, Northrop Consulting Engineers Pty Ltd and Paul Angus, Erbas

Achieving what NABERS achieves – A lessons learned approach for the implementation of nabers in the UK
Samantha Carlsson, Hoare Lea

Design for performance: a scheme to guarantee new build energy performance
Robert Cohen, Verco

Room C  Session 9 – Perfecting practice
Chair: Andrew Saville, CIBSE Board Member, Armville Consultancy

Learning Together: Preparing collaborative professionals for future practice in the built environment industry
Alex MacLaren, Heriot-Watt University and Sarah Birchall, BSRIA

Why many engineers are doing less early stage HVAC sizing analysis and why it’s important
Andrew Corney, Sefaira

Procurement routes and building performance
Julie Godefroy, Hoare Lea

3D business plan
Satheesh Jacob, Ramboll UK Ltd and Stephen Appleton, Ramboll UK Ltd
| Room A | Session 10 – Interrogating systems performance  
Chair: Laura Dunlop, WIBSE Chair, GLD Technical Consulting  
Occupant satisfaction signatures: Longitudinal studies of changing comfort perceptions in two non-domestic buildings  
Roderic Bunn, BSRIA and UCL  
Analysis of high resolution terminal unit performance data  
Mike Darby, Demand Logic  
How well are your renewable energy systems actually performing?  
Alasdair Donn, Willmott Dixon Energy Services  
Cost effectiveness of heat meters within communal or district heating schemes  
Andrew Cripps, AECOM |
| Room B | Session 11 – Reaching beyond standards  
Chair: David Fitzpatrick, CIBSE Patrons, Wedge Group Galvanizing Ltd  
The accuracy of thermal comfort zone, ASHRAE standard 55-2013  
Dimitris Theodossopoulos, University of Derby  
Think outside the box: ‘Churn’ and the Environmental Impact of Office Fit-Out Retrofit  
Theodora Tsolaki, Heriot-Watt University  
Retrofitting existing housing stock: The role of professional advice in supporting householders and installers - lessons for the future  
Sadhbh Ni Hogain, Haringey Council  
Architectural education for green building design  
Julia Mundo, Benemerita Universidad Autonoma de Puebla, Mexico |
| Room C | Session 12 – Delivering solutions with intelligent analysis  
Chair: Chris Jones, CIBSE HCNW Chair  
Uncertainty, BIM and whole life environmental impacts of building services  
Mike Medas, AECOM  
Operational performance targets in a daylighting design process of a green international airport terminal in the tropics  
Siti Norzaini Zainal Abidin, International Islamic University Malaysia and Shireen Kasim, International Islamic University Malaysia  
Flow simulation of property-scale rainwater systems  
Achala Wickramasinghe, Heriot-Watt University  
Office displacement ventilation using computational fluid dynamics as a design tool  
Vasilis Maroulas, Arup |

17:00 Room A  Session 13 – Debate - Putting our head above the parapet is impossible with the present industry structure  
Chair: Richard Rooley, Project Management Partnership Ltd

18:00 – Day one close  
Coaches to Edinburgh Castle leave at 18:15 from Gait 1

19:15 – Informal buffet reception and tour of the Crown Jewels at Edinburgh Castle – all delegates welcome

19:30 – Opening remarks by Nick Mead, CIBSE President and NMa
### Day two – morning

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<th>Time</th>
<th>Session</th>
<th>Chair</th>
<th>Location</th>
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<tr>
<td>08:30 –</td>
<td>Registration and refreshments</td>
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<tr>
<td>09:00 Room A</td>
<td><strong>Session 14 – UK Centre for Moisture in Buildings</strong></td>
<td>Nick Mead, CIBSE President and NMa</td>
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<td>09:15 –</td>
<td><strong>Parallel sessions</strong></td>
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<td>Room A</td>
<td><strong>Session 15 – Building energy renovation and retrofit</strong></td>
<td>George Adams, Past CIBSE President, SPIE UK</td>
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<td>Core bundles of technologies to achieve deep energy retrofit with major building renovation projects</td>
<td>Alexander Zhivov</td>
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<td>Advanced business and financial models for Deep Energy Retrofit (DER)</td>
<td>Rüdiger Lohse</td>
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<td>Deep energy retrofit of buildings in Europe and the USA. – analysis of case studies</td>
<td>Ove Mørck, Cenergia Energy Consultants, Denmark</td>
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<td>An analysis of energy efficient retrofit strategies for office buildings in China</td>
<td>Runming Yao, University Of Reading</td>
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<td>10:55</td>
<td>Refreshments and posters</td>
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<td>11:20 Room A</td>
<td><strong>Session 17 – Forecasting performance and cost</strong></td>
<td>Stuart MacPherson, CIBSE Honorary Treasurer, Irons Foulner</td>
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<td>Semantically enriched BIM life cycle assessment to enhance buildings’ environmental performance</td>
<td>Yair Schwartz, University College London</td>
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<td>Integration of life cycle assessment tools in the design process of low-carbon buildings</td>
<td>Sahar Mirzaie, Heriot-Watt University</td>
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<td>How operational data is used to test assumptions in the SAP methodology</td>
<td>John Henderson, BRE</td>
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<td>Life cycle cost of mechanical and electrical services</td>
<td>Haniyeh Mohammadpourkarbasi, Beverly Clifton Morris (BCM)</td>
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<td><strong>Session 16 – Integrating comfort and energy efficiency</strong></td>
<td>Derek Clements Croome, Reading University</td>
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<td>Energy efficient district heating in practice – the importance of achieving low return temperatures</td>
<td>Martin Crane, Carbon Alternatives Ltd</td>
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<td>An investigation into the effects of workplace designs upon occupant well-being, satisfaction and performance</td>
<td>Gary Middlehurst, University of Reading</td>
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<td>Evaluating the performance of the mixed-mode ventilation strategy at Horizon House</td>
<td>Ashley Bateson, Hoare Lea</td>
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<td>Quantifying performance potentials of advanced facades</td>
<td>Stephen Selkowitz, Lawrence Berkeley National Laboratory</td>
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<td><strong>Session 18 – Resilient Cities</strong></td>
<td>Susie Diamond, CIBSE Future Cities Group, Inkling LLP</td>
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<td>Aspects of energy use by UK air conditioning</td>
<td>Roger Hitchin</td>
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<td>Adapting to improved thermal envelopes with 2-pipe fan coil systems in London</td>
<td>Dinachi Onuzo, AECOM</td>
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<td>Comparative analysis of traditional vs. sustainable chilled water plant design in Saudi Arabia</td>
<td>Syed Mustafa Ali, Al-Hamdan Consulting Office</td>
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<td>Heat pipes for enhanced dehumidification</td>
<td>Richard Meskimmon, S &amp; P Coil Products Limited</td>
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Day two – afternoon

14:00 Room A – Session 19 – Unleashing opportunities with future thinking
Chair: Lynne Jack, Heriot-Watt University

An operational lifetime assessment of the carbon performance of gas fired CHP led district heating
Stuart Allison, Arup

Opportunities for surface water source heat pumps in the UK and an Introduction to the CIBSE/HPA/GSHPA Code of Practice
Phil Jones, Building Energy Solutions

Sublime chaos and complexity in construction. Each profession and trade as a divergent attractor
Richard Rooley, Project Management Partnership Ltd

One Planet, One environment, one chance. A Study
George Adams, SPIE UK

15:40 Break area – Conference close, prize presentation and drinks reception
Chair: Hywel Davies, CIBSE Technical Director

16:20 – (approximately) Day two close
The CIBSE Conference and Exhibition are focused on the efficient design, construction, maintenance and operation of buildings and the systems that support them.

Featuring:

- Award winning aspirational case studies from the 2016 CIBSE Building Performance Award winners
- Speakers highlighting and debating the issues faced by the building supply chain
- Exhibitors showcasing the latest innovations and solutions for improved building performance

Why Attend?

- Learn from the most innovative and influential built environment professionals
- Discover effective solutions to deliver building performance
- Keep informed about changes to legislation and the most critical issues facing the built environment
- Advance your career by receiving over 10 hours of CPD over the two days
- Raise your profile, meet and network with like-minded industry professionals
- Refreshed inspirational programme with new speakers, debates, and best practice
Get the recognition you deserve.

Bringing together the CIBSE ASHRAE Graduate of the Year award and the CIBSE Employer of the Year award, YEA 2016 aims to recognise and reward the innovative thinking, hard work and skills of graduate engineers, whilst also showcasing and championing employers - large and small - who are truly committed to developing and encouraging young talent.

Visit www.cibse.org/yea for more information and to enter.