London-Loughborough EPSRC CDT
Centre for Doctoral Training in Energy Demand

Vision and leadership for a sustainable built environment

LoLo/ERBE Annual Colloquium 2019 – a showcase of our research

Thursday 7 November 2019, The Building Centre

Vincent Suite and Lower Ground Floor Foyer

Programme 13:00 – 19:30

13:00	*Registration – tea and coffee, light lunch available* Vincent Suite, Lower Ground Floor
14:00	**Opening address** Professor Robert Lowe, Director, LoLo CDT (Director, UCL Energy Institute, UCL)
14:15	**LoLo highlights from the year** Professor Kevin Lomas, Director, LoLo CDT (Professor of Building Simulation, Loughborough University)
14:30 – 15:00	**Final year student presentations**
14:30	Zack Wang – UCL Energy Institute **Sizing of district heating systems based on smart meter data: Quantifying the aggregated domestic energy demand and demand diversity in the UK**
14:40	Dan Wright – Loughborough University **A socio-technical assessment of the energy saving potential of domestic zonal space heating controls**
14:50	*Coffee, networking*
15:10 – 16:00	**Final year student presentations**
15:10	Harry Kennard – UCL Energy Institute **Thermal Variety and Health: Evidence from the UK Biobank. Using a wrist-worn temperature sensor to understand participant's thermal environment**
15:20	Matthew Li – Loughborough University **Quantifying in-use thermal performance of UK homes**
15:30	Clare Hanmer - UCL Energy Institute **How flexible is UK home heating demand?**
15:40 – 17:00	**Poster Session** (List of projects below)
17:00	**Closing Remarks** Professor Robert Lowe, Director, LoLo CDT

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17:10 *End of main conference*

17:30 – 18:20 **Keynote – LoLo Alumni**
Vincent Suite, Lower Ground Floor

Dr Paula Morgenstern
(Building Performance Manager – BAM Construct UK Ltd)

and **Dr Daniel Quiggin**
(Senior Policy Advisor in the EU Exit, Energy and Climate directorate – BEIS)

What does net zero carbon in operation mean to construction teams?

New buildings must be net zero carbon in operation by 2030 (at the latest) to help address the climate emergency. This challenge will require involvement and contributions from all actors across the building life cycle as well as insights from academia / industry engagement. An important role in avoiding gaps between intended and actual building performance falls to contractors and small supply chain partners who built out low carbon designs.

How do different actors, from investment banks, think tanks and the civil service view the challenges and opportunities of negative emission technologies?

Questions need to be asked as to the validity and risks of relying on negative emissions technologies (NETs), such as bio-energy with carbon capture and storage (BECCS). The timing is pertinent; as countries move towards 'net zero' national targets, and we approach COP26 in 2020, the nationally determined contributions (NDCs) are being revised, as part of the Talanoa Dialogue. In the recent 1.5C IPCC report, 81 of the 90 scenarios investigated all required NETs.

There are growing concerns over the BECCS land requirement range with some suggestions that an equivalent of 210% of India's land, used for food production, would need to be dedicated to growing bio-crops. Furthermore, there are concerns that BECCS may turn out to be a net consumer of energy.

18:20 **Poster Competition Winners**
Professor Kevin Lomas and Professor Robert Lowe Director, LoLo CDT

18:30 – 19:30 **Drinks reception**
Main Gallery Ground Floor

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Poster Session

Ayooluwa Adewole	Adopting Solar PV for Back-up Electricity in Nigerian Residential Estates
Ahmed Ahmed	Forecasting low winter temperatures in dwellings to detect excess winter mortality risks in real-time
Minnie Ashdown	An investigation into the dynamic air exchange characteristics of existing UK dwellings with a focus on dynamical systems.
Rayan Azhari	Investigating the metering configurations in the commercial buildings in the UK
Paul Drury	No escape from the heat? Bedroom temperatures during England's hottest summer
Rami El-Geneidy	Flexineering buildings: design and implementation of control strategies for demand response
Lauren Ferguson	Incorporating socio-economic information into building physics models
Jessica Few	Understanding Ventilation in Occupied Homes
Joseph Forde	A framework towards the delivery of volume zero-carbon homes in the UK
Daniel Franks	Heating patterns in English homes
Gabriele Gessani	Techno-economic assessment of energy systems compatible with sustainable economic growth for non-domestic sector
Anna Gorbatcheva	Analysis and design of a peer-to-peer energy trading system to support local electricity grid balance
Duncan Grassie	An investigation of feedback and feedforward energy efficiency mechanisms from a UK school crowdsourced building stock model
Benjamin Halls	Occupant Behaviour: A data driven modelling approach for occupancy presence in residential buildings
Frances Hollick	Developing a dynamic method of assessing whole house thermal performance: exploring the inclusion of 4 effects
Suneina Jangra	Evaluating the in-situ thermal performance of loft insulation in cold-pitched domestic roofs: determination of R-/U-values and opportunities for minimising heat loss
Seb Junemann	Occupant-driven mitigation strategies for poor indoor air quality in UK homes
Anneka Kang	Opportunities for Communal PVT Heating?
David Kenington	Can energy management be improved within retail and hospitality organisations using opportunities provided by smart meters?
Giorgos Petrou	How hot will it get? Predicting the summer indoor temperatures of English homes
Giulia Ragosa	Governing electricity distribution networks for the low-carbon energy transition in Great Britain
Niki Sahabandu	Closing the UK district heating performance gap: A case study performance assessment using real-operational data
Salman Siddiqui	The integration of heat networks with low-carbon power generation
Benjamin Simpson	Multi-criteria optimization of building design for natural ventilation
Cairan Van Rooyen	Ventilation practices in UK homes in relation to indoor air quality, noise and overheating.
Nicole Watson	Cognitive biases and consumer engagement with local energy in a multiple supplier model: Survey experiments in Britain

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