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

Vision and leadership for a sustainable built environment

LoLo Annual Colloquium 2018 – a showcase of our research

Thursday 8 November 2018, 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	Catherine Willan – UCL Energy Institute **Life in the gap: How does a construction team respond to targets for energy and Carbon use?**
14:40	Ben Roberts – Loughborough University **Summertime overheating in UK homes: can occupants keep cool without using air-conditioning?**
14:50	*Coffee, networking*
15:20 – 16:00	**Final year student presentations**
15:20	Matej Gustin – Loughborough University **Prediction of Internal Temperatures during Hot Summer Conditions with Time Series Forecasting Models**
15:30	Frances Hollick – UCL Energy Institute **Developing a dynamic method to assess whole house thermal performance requiring minimal inputs**
15:40 – 17:00	**Poster Session** (List of projects below)
17:00	**Closing Remarks** Professor Robert Lowe, Director, LoLo CDT
17:10	*End of main conference*

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17:30 – 18:20 **Keynote**

Vincent Suite, Lower Ground Floor

Paul Deane – *MaREI Centre, Environmental Research Institute, University College Cork*

Opportunities and challenges in decarbonising heat

Climate change is unequivocally underway due to the burning of fossil fuels, manufacturing and intensive agriculture. Decarbonising the energy system requires radical changes to how we generate and utilise electricity, heat and transport posing significant technical, political and societal challenges. Addressing climate change also provides many opportunities for cleaner air, reduced illnesses and improved energy security.

The challenges associated with climate change mitigation are sometimes oversimplified, but pretending it is easy just makes it harder. One of the main simplifications is that the solution is to maximise efficiency, decarbonise electricity and electrify everything. Most least cost decarbonisation analyses indicate that electricity will grow from 20% of energy use currently to 30% – 40% by 2050. Some recent studies point to a possible increase to 60% of energy end use.

This presentation will explore options for decarbonising heat encompass demand reduction measures, energy efficiency measures (new building regulations and retrofitting), and decarbonising thermal energy supply (electrification plus decarbonisating electricity, renewable gas, hydrogen, etc.). It will highlight a number of key challenges and opportunities.

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
Charalampos Angelopoulos	Design and control of mixed-mode cooling and ventilation in low energy residential buildings
Minnie Ashdown	Airtightness testing in the UK during the introduction of regulatory testing: an inferential approach
Rayan Azhari	Energy performance evaluation of the TfL Headquarters in Stratford, London
Kostas Chasapis	Early-Stage Design Decision-Making for Community Energy Schemes
Rami El-Geneidy	Delivery of Contracted Energy Flexibility from Communities
Lauren Ferguson	The Effect of an Energy-Efficient Retrofit on Childhood Exposure to Indoor $PM_{2.5}$
Jessica Few	Studying Ventilation in Occupied Case Study Dwellings with Trickle Vents
Joseph Forde	Multi-objective optimization of Passivhaus buildings in a UK social housing context
Daniel Franks	Fuel Poverty; changing the definition, the groups suffering and influencing factors.
Duncan Grassie	An investigation of feedback & feedforward energy efficiency mechanisms from a UK school crowdsourced stock model
Naomi Grint	Hygrothermal characterisation of solid brick walls and the impacts of internal wall insulation
Clare Hanmer	How flexible is home heating demand?
Suneina Jangra	Evaluating the in-situ thermal performance of loft insulation in residential buildings: 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	Investigating the reduction of domestic heating emissions brought about by 1 PVT series system used to power a row of terraced houses
David Kenington	Innovating with smart meters to improve energy management in retail and hospitality
Harry Kennard	Observational evidence for the variation in experienced temperature
Matthew Li	Measuring whole building thermal performance in occupied homes
Anthony Marsh	How hot is too hot? Overheating in student accommoda4on
Nathan Moriarty	Heat Pump DSR Potential for Imbalance Payment Mitigation
Murat Mustafa	Natural Ventilation Effectiveness in Single and Multi-Storey Residential Buildings
Giorgos Petrou	Modelling assumptions and how they impact overheating compliance.
Salman Siddiqui	Efficient Integration of Heat Networks with Low-Carbon Power Generation
Benjamin Simpson	Predicting Ventilation Effectiveness for Natural Ventilation
Luke Taft	Perceptions of Thermal Comfort in an Office During a Heatwave
Zack Wang	Heat pumps with district heating for the UK's domestic heating sector
Stephen Watson	Increased electricity demand from heat pumps, taking user behaviour into account
Daniel Wright	Zonal Controls: A home heating revolution?

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