

uSIM Preliminary Programme

FRIDAY 30 November

Registration & Welcome 08.30-09.00

Opening Keynote 09.00-09.30 Dr. Don McLean CEO IES Ltd.

Paper

Session 1 (09.30 - 10.20) Stakeholder Engagement in Energy Design

26 REGIONAL MODELLING OF DOMESTIC ENERGY CONSUMPTION USING STAKEHOLDER GENERATED VISIONS AS SCENARIOS *Simon Lannon, Heledd Iorwerth, Malcolm Eames, Miriam Hunt*

27 A KNOWLEDGE AND COMMUNICATION PLATFORM INTEGRATING A BUILT ENVIRONMENT TOOL TO FOSTER COMMUNITY DIALOGUE ON THE TRANSITION TO A LOW CARBON ENERGY SYSTEM *Giulia Barbano, Mike Oates*

Session 2 (10.20-11.30) Urban Microclimate

33 TOWARDS PERFORMANCE BASED VALIDATION OF THE U.S. CLIMATIC ZONING BASED ON THE ASHRAE STANDARD 90.1-2013 *A. Walsh, D. Cóstola, and L.C.Labaki*

13 PREDICTING LOCAL WIND PRESSURE COEFFICIENTS FOR OBSTRUCTED BUILDINGS USING MACHINE LEARNING TECHNIQUES *Ioanna Vrachimi, Daniel Costola*

3 URBAN CLIMATE – IMPACT ON ENERGY CONSUMPTION AND THERMAL COMFORT OF BUILDINGS *Urs Grossenbacher*

COFFEE

Session 3 (11.50-12.40) Generating Data for Urban Energy Modelling

4 A PROBABILISTIC APPROACH TO ALLOCATE MISSING BUILDING PARAMETERS WITHIN DISTRICT ENERGY SIMULATIONS *Ina De Jaeger, Jesus Lago, Dirk Saelens*

24 COMMUNITY-SCALE HOUSEHOLD ACTIVITY MODELLING USING TIME USE DATA *Yohei Yamaguchi, Yuka Kambayashi, Takeshi Okada, Ayako Taniguchi-Matsuoka, Yoshiyuki Shimoda*

11 COMMUNITY SCALE DYNAMIC BUILDING SIMULATIONS USING PROBABILISTIC BEHAVIOURAL PATTERNS *Peter McCallum David Jenkins Andrew Peacock*

LUNCH & IES Demonstration Event

Session 4 (13.10-14.20) Design and Optimisation

8 INNOVATIVE DESIGN TOOLS FOR REFURBISHING OF BUILDINGS AT BUILDING AND DISTRICT LEVEL

22 A NEW APPROACH PROPOSED TO EVALUATE THE COST OPTIMAL AND NEARLY ZERO ENERGY LEVELS OF BUILDINGS AND DISTRICT ENERGY SYSTEMS TOGETHER IN SETTLEMENTS

Session 5 (14.20-15.30) Stock Modelling Tools and Techniques

32 DEVELOPING HIGH-RESOLUTION BOTTOM-UP BUILDING STOCK MODELS USING AERIAL IMAGES AND DYNAMIC SIMULATION *J.Byres, I. Vrachimi, D.Cóstola*

31 BUILDING ARCHETYPES IN URBAN ENERGY MODELS. A COMPARATIVE CASE STUDY BETWEEN DETERMINISTIC AND STATISTICAL METHODS IN ANDORRA. *María Paula Guillaumet, Patricia Borges, Martí Rosas-Casals, Oriol Travesset-Baro*

29 OPEN SCIENCE BUILDING STOCK MODELLING: AN EXAMPLE USING GBXML, OPENBUILDING AND ENERGYPLUS *Steven K Firth, Bianca Howard, Jonathan A Wright*

COFFEE

Session 6 (15.50-17.00) Flexibility and Responsive Demand

28 REVIEW OF TECHNIQUES TO ENABLE COMMUNITY-SCALE DEMAND RESPONSE STRATEGY DESIGN *Rami El Geneidy, Bianca Howard*

25 SOURCES OF ENERGY FLEXIBILITY IN DISTRICT HEATING NETWORKS: BUILDING THERMAL INERTIA VERSUS THERMAL ENERGY STORAGE IN THE NETWORK PIPES *Annelies Vandermeulen, Glenn Reynders, Bram van der Heijde, Dirk Vanhoudt, Robbe Salenbien, Dirk Saelens, Lieve Helsen*

30 MODELLING THE ABILITY OF UK HOUSING TO PROVIDE RESPONSIVE DEMAND UNDER DIFFERENT HEATING OPERATING STRATEGIES *John Allison, Andrew Cowie, Graeme Flett, Jon Hand, Graeme Hawker, Nick Kelly*

Closing Keynote (17.00-17.30) Prof. Joe Clarke IBPSA Fellow.

19.00 Conference Dinner