International Conference on Sustainability in Energy and Buildings

Invited Sessions

Title of Session: Assessment and Monitoring The Environmental Performance of Buildings

Name of Chair: Dr John R Littlewood

Description:

The Assessment and Monitoring The Environmental Performance of Buildings (AMEPB) invited stream was first launched at SEB11, in June 2011, at the University de Provence, Marseille, France. AMEPB was a huge success and saw a variety of papers presented from research in collaboration between Universities and industry from across Europen. The papers in the AMEPB stream at SEB11 included research investigating:

- the use of thermography to assess the thermal performance of dwellings during construction;
- low-carbon retrofit of UK Conservation Area dwellings and a review of energy-saving details;
- new concepts of Post Occupancy Evaluation using building information modelling benchmarking techniques;
- preliminary results from the monitoring and assessment of the indoor environment and domestic electricity use in earth sheltered housing;
- modelling and Control of HVAC systems according to energy efficiency and comfort criteria;
- assessment of the environmental performance and energy management for historic churches;
- post Occupancy Evaluation of Decentralised Energy Systems.

Through the summer, autumn and winter of 2011 and into 2012 the global economic situation has deepened. Following the Durban Climate Change Conference in November 2011 there was agreement to push forward with implementation of Kyoto and Cancun agreements in 2012. Thus, there is an ever greater need to minimise and control energy use in buildings and the associated carbon emissions and thus to conserve expenditure on energy costs and reduce the risk of fuel security issues. With this, comes an increased need to find cost effective solutions for renewable energy generation. Furthermore, the move towards low to zero finite resource use and low to zero carbon emissions and thus, low and zero carbon or carbon neutral buildings, continues; albeit at a slower pace due to the current economic scenario. In addition, there is an increased focus on retrofitting existing buildings with low carbon measures and the sustainable refurbishment, repair and adaptation of these buildings; to minimise energy use and carbon emissions and spiralling energy costs.

Due to the issues above and the continued rise in 'sustainable' developments there is an increasing need to assess and monitor how effective sustainable, low carbon and zero carbon design, construction, operation and retrofit strategies of buildings, and whether controls and components have been and will be maximising environmental performance, minimising carbon use and allowing occupant comfort at affordable costs. In addition, to assessing and monitoring energy generation and renewable energy systems.

The aim of the AMEPB session at SEB12 will provide the opportunity for researchers (including masters and doctoral students), designers, developers, clients, industry personnel and other interested parties to present and review theoretical and applied work in the *'The assessment and*

monitoring of the environmental performance of buildings'. Thus, the proposed themes within this session will include.

Themes

- Comparison of design, construction strategies and details and calculated carbon emissions with performance and carbon emissions in use, to include physical and / or social assessment;
- Validation of design and environmental assessment tools and modelling with performance in use - through physical and / or social assessment;
- Evaluation of design and construction details, approaches and processes to maximise environmental performance, health and well-being and minimise carbon emissions;
- Comparison and illustration of methods for assessing and monitoring the environmental performance of new and existing buildings, including retrofitting, to include physical and / or social assessment;
- Case studies:
  - Assessment and or monitoring the environmental performance of new and existing buildings;
  - Assessment and or monitoring the environmental performance of components in new and existing buildings, including retrofitting;
  - Presentation and discussion of all building types and uses;
  - Presentation and discussion of assessing all renewable energy systems;
  - Presentation and discussion of any technology for *'The assessment and monitoring of the environmental performance of buildings';*
- Post occupancy evaluation;
- Education and training;
- Development and enhancement of existing assessment and monitoring methods, to include physical and / or social assessment;
- Comparison of methodologies and regulations in one country or between countries;
- Any other applied research related to *'The assessment and monitoring of the environmental performance of buildings';*
- Triple bottom line analysis.

Paper deadlines

Submission of Full Papers for Review:	**1st May 2012;**
Notification of Acceptance and / or reviewers comments:	**1st June 2012;**
Upload of Final Camera-Ready Publication Files:	**1st July 2012.**

Website URL (if any):

A new page will be created on the EBERE at Cardiff Metropolitan University website:
similar to this website: http://www.wirad.ac.uk/research-themes/ecological-built-environment/seb2011/

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