



CARBON BITES

From the CIBSE ENERGY PERFORMANCE GROUP

In pursuit of optimal building performance: B-bem & Post Occupancy Evaluation

There has been a substantial increase in the building-performance-related research conducted both in academia and industry. The ultimate goal is simple; to ensure a healthy and comfortable indoor microclimate over the building's lifetime, which is delivered in an efficient way.

Undoubtedly the last few years has brought positive changes both among design teams, who think more about providing energy efficient designs that work, and among end-users, who are more aware of factors affecting their indoor environments. However, there is still a lot that has to be done. In order to set optimal standards and to continue confronting and modifying the existing systems/ strategies, there is a need for an interactive dialogue between specialists across the academia and industry.

The effective information exchange between the two would accelerate the progress and would make the pursuit of optimal standards much easier. From the perspective of industrial specialists, this corresponds to providing feedback from post occupancy evaluation (POE), which is the assessment of building performance post-construction and creating a feedback loop to enable the evidence-based design. From the perspective of academics, this corresponds to using the actual results to enhance simulations, which later can be used to inform the design.

One initiative to accelerate change is B-bem (Bayesian Energy Management). This is a part of Energy Efficient Cities Initiative developed in the University of Cambridge to find better ways to manage energy use. More details on the project can be found here: <http://www.eeci.cam.ac.uk/research/b-bem>

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Key Issues

- Comparing results of simulation with actual data
- Improving models/simulations based on experimental validation
- Ensuring dialogue between academic and industrial specialists
- Ensuring that academic and industrial specialists work towards common goals & they have efficient information channels to exchange information/experiences
- Identifying problems but also successes
- Ensuring use of feedback to optimise operation
- Ensuring efficient use of feedback to improve design & construction
- Ensuring that occupants understand building operation and learn how to minimise energy use (optimise performance)
- POE challenge – creating 'a cost-effective, commercially viable and 'light touch', post-occupancy evaluation service for the domestic service'
- Engaging end-users – creating user-friendly guides + tutorials

LINKS

- https://www.designingbuildings.co.uk/wiki/Building_performance_evaluation_v_post-occupancy_evaluation
- <http://www.maxfordham.com/people/tom-mcneil>
- <https://www.architecture.com/knowledge-and-resources/resources-landing-page/post-occupancy-evaluation#available-resources>

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