Energy Efficiency as a Key Factor of Sustainable Campus Management

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5 Key areas

- Teaching
- Research
- Own buildings
- Health and well being
- Wider community

Teaching: Inspiring Sustainability

Aim: To develop staff and students to become responsible 'global' citizens in the face of the environmental challenges ahead of them.

Objectives

- To develop innovative, inter-disciplinary undergraduate and post-graduate courses to tackle the issue of sustainable development in a holistic manner.
- To develop themes and competencies in sustainability running through undergraduate and postgraduate courses.
- Sustainability to be included as part of the induction process for all staff and part of the welcome for all new students.
- Sustainability courses to be offered to staff as 'continuing professional development' (CPD).

Research: Thinking Sustainability

Aim: To develop groundbreaking and interdisciplinary research that advances knowledge on sustainability, and establishes DMU as a leader in this sector.

Objectives

- To create a forum or 'community of practice' for researchers to meet and share ideas.
- To develop research that transcends disciplines and attract high level PhD students.
- To secure significant new funding for future research projects and collaborations.
- To develop the profile of the DMU, nationally and internationally as an exemplar for sustainable development

Built Environment: Being Sustainability

Aim: To reduce our environmental impact on the environment and be an exemplar of best practice

Objectives

- To establish a comprehensive environmental management system, to include ambitious targets for energy savings and efficient resource use.
- To improve our waste management and recycling facilities with the goal of increasing the amount of waste recycled and reduce the waste going to landfill.
- Devise a robust methodology for measuring and monitoring our environmental performance and carbon emissions and implement an ambitious carbon reduction strategy.
- Develop and promote a purchasing policy that will take into account the sustainability of products and services in order to reduce harm to the environment.
- To ensure that where practicable all developments take into account sustainable construction principles and avoid the use of environmentally damaging substances, materials and processes.
- Promote the university's green travel plan to reduce the total number of journeys made.

Health and Well-Being: Living Sustainability

Aim: To ensure DMU is a healthy, creative and inspiring 'space' to study and work.

Objectives

- Collaborate with the university's green travel plan to encourage the use of public transport and actively promote walking and cycling.
- Encourage the development of green spaces and biodiversity to enhance the wellbeing of those who use the campus, and promote the visibility of the sustainability strategy.
- To develop an integrated approach to promote the health and wellbeing of staff.
- To develop an integrated approach with student services and the NUS to ensure the well-being of students.

Community Engagement: Leading Sustainability

Aim: To establish DMU as a beacon of best practice, a centre of research excellence for sustainability and an ambassador locally, regionally and beyond.

Objectives

- To raise the profile of DMU within Leicester City and increase its reputation within the region, for example, through our role in the Leicester Strategic Partnership.
- To emerge as a hub for research on sustainability within the city and the East Midlands.
- To support the local and regional economy through training, skills development and resources for business, government and industry.
- To explore the wider global impacts of our operations, for example fair trade and ethical investment.

Engaging with building users

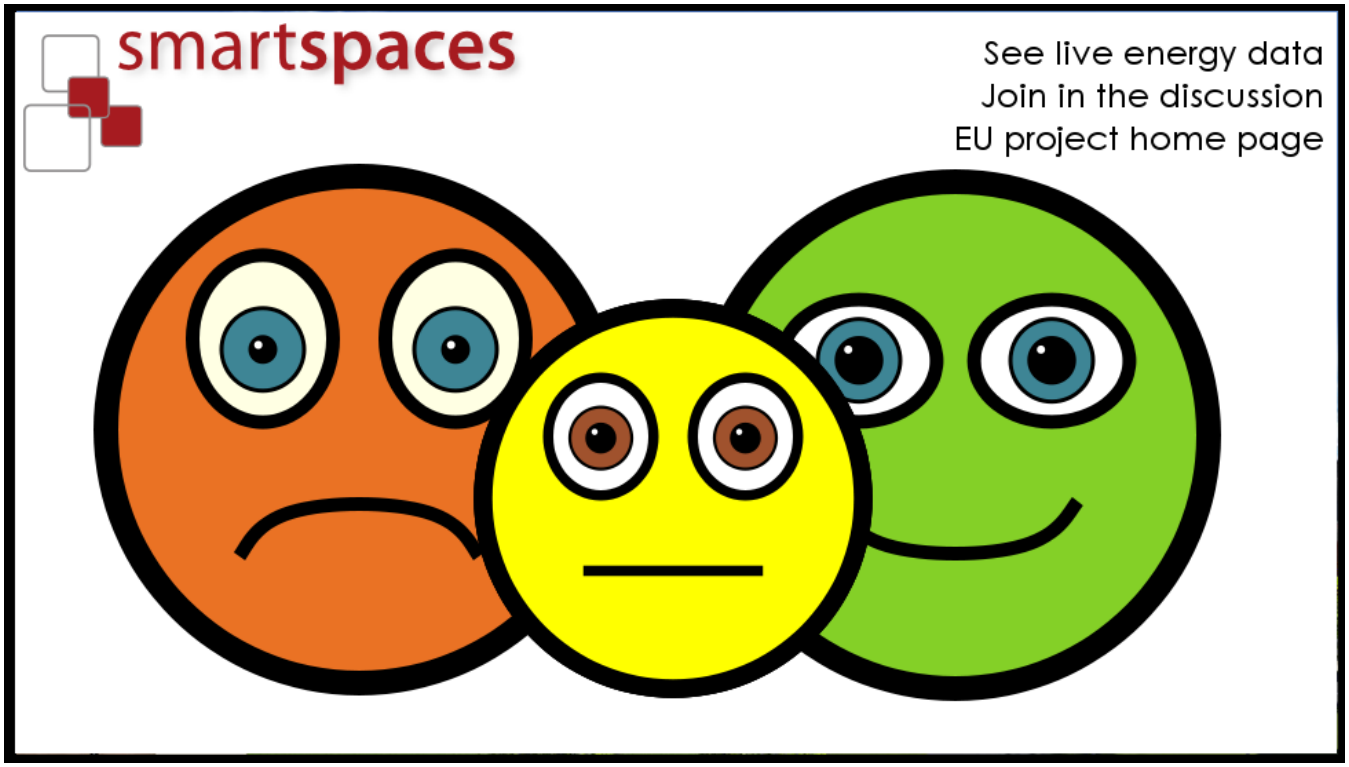
- www.smartspaces.dmu.ac.uk

Engaging with European students

- http://saves.nus.org.uk/

www.smartspaces.dmu.ac.uk

- Using ICT to influence energy behaviour in public buildings
- 20 Leicester City Council buildings and 5 De Montfort University buildings

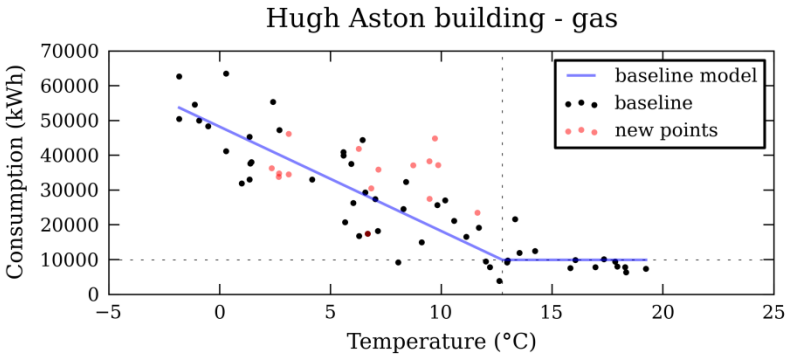


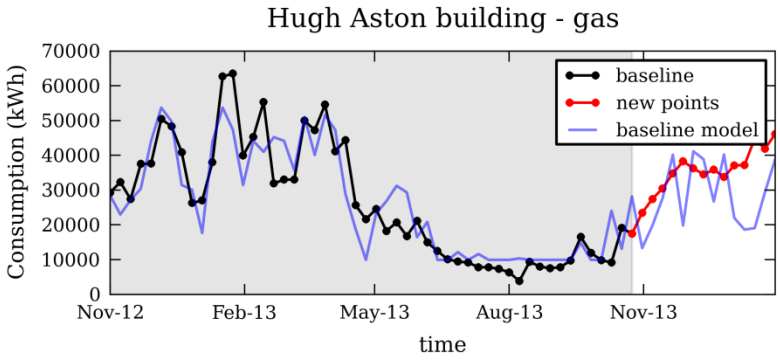
Leicester

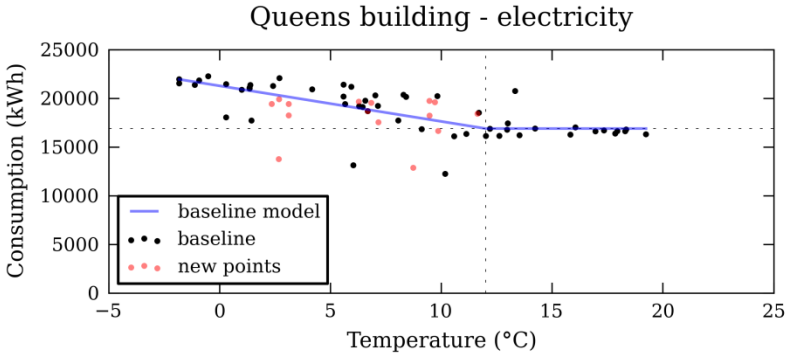
- 5 x university
- 7 x leisure centres
- 7 x schools
- 2 x community
- 1 x concert hall
- 1 x museum
- 1 x office
- 1 x library

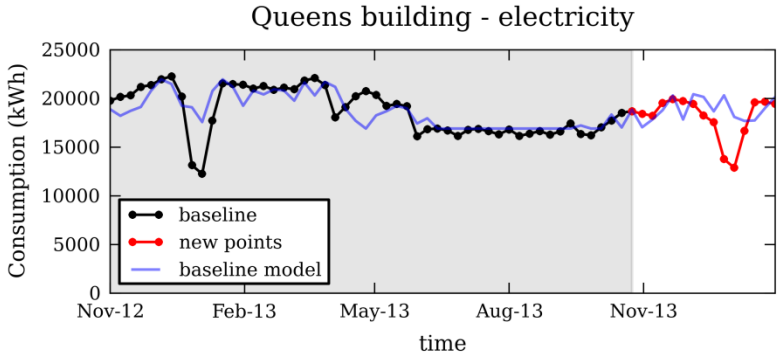
- Existing metering network provides data to energy professionals
- smart**spaces** will make these data available to all building users
- Aim is to facilitate a change in culture and achieve carbon savings

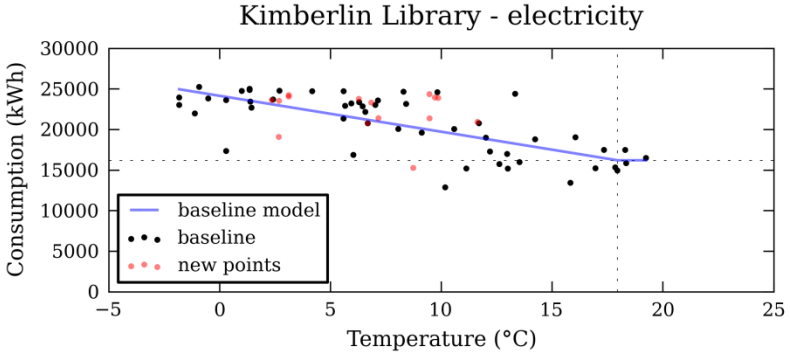
Energy Prediction

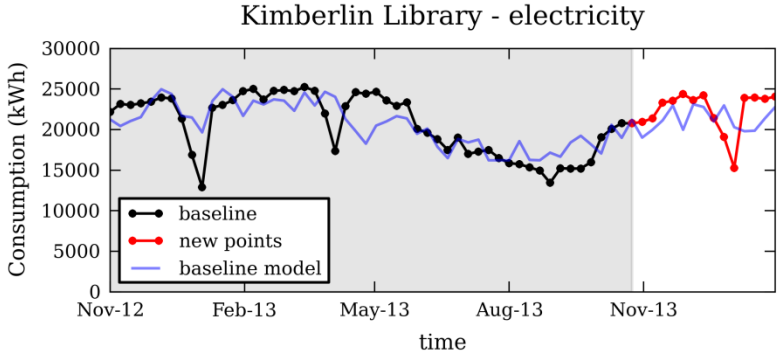






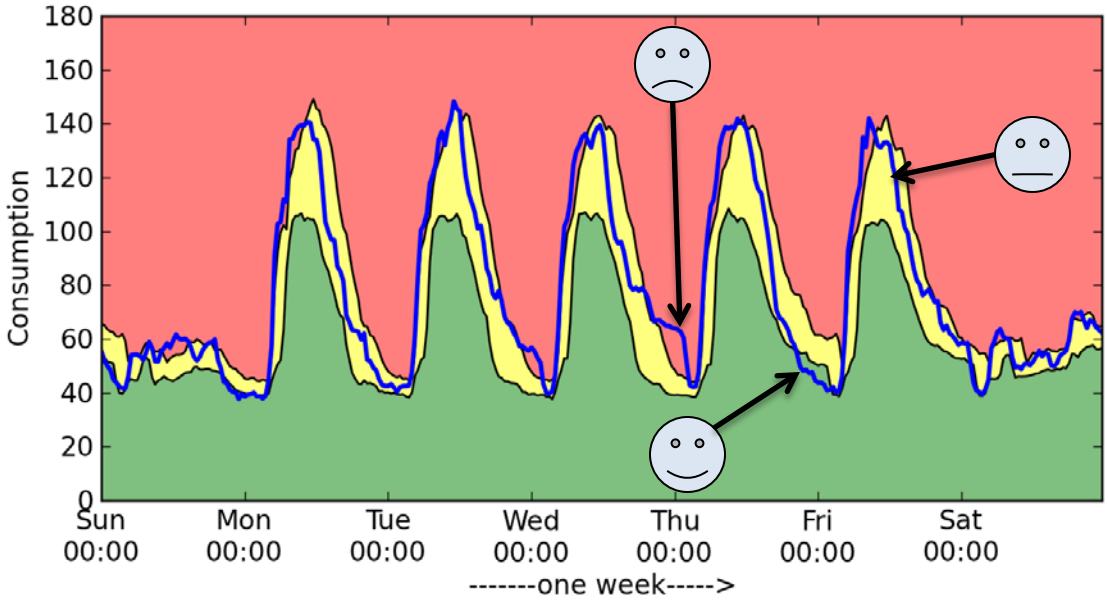






Quantifying Energy Performance

- A building is happy when consumption is in the green zone
- A building is neutral when consumption is in the yellow zone
- A building is sad when consumption is in the red zone



www.smartspaces.dmu.ac.uk

- Data in smiley faces and graphs
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- On line discussion forum for buildings users to share knowledge and information

Most important successful element of your improvement?

- Support from the top. Commitment from Vice Chancellor

What obstacles / barriers did you have to overcome?

- Lack of understanding, interest, knowledge, awareness, lack of priority

Who or what internal and external factors triggered the process? Did these persons / factors change over time?

- External – relevant HEFCE (funding) and govt policy framework
- Internal –professional support and capacity amongst academics and professional services staff
- Cope with changes to personnel

Significance of the technical, economic, management- related and social factors?
Did they change over time?

- Technology improving (half hourly meters to sensors and computational power)
- University subject (ESD)
- Multi and inter disciplinary working
- Need to adapt to changing priorities
- Measurement and benchmarking

Technical, organisational and behavioural energy efficiency measures?

- Clear policies
- Voluntary “champions”. Annual awards ceremonies
- Link to national (NUS) initiatives
- Partnership working

Did the community play a role? Please outline the role of administration

- Student community
  - Campaigns
- Comparison with other universities

What role did participation play within your process? Did your sustainability strategy work more top down or bottom up?

- Top down, middle out and bottom up
- Quality knowledge and experience is needed
- Participation that integrates energy into day to day operational issues.