CIBSE South West Region

Notes from Edge Debate – 8 September 2011

Debate Title: Cutting Carbon at any Cost

Location: Arup Bristol

Event Chairman	Andy Ford	CIBSE President, Technical Director Mott MacDonald
Presenters:	Mike Roberts	HAP Housing, Ambassador UKGBC
	Bill Bordass	Usable Buildings Trust
	Prof. Doug King	King Shaw Associates
Notes prepared by:	Richard Hill	CIBSE South West, Regional Chairman

Each of the above presenters gave a brief presentation on the subject of 'Cutting Carbon at any Cost'. The presentations were given in the order the presenters are listed above and have been summarised below:

Mike Roberts

- **Attitude**
  As a Society we need to stop kidding ourselves that resources are cheap, plentiful and inexhaustible. We need to face up to waste and inefficiencies and stop whinging about rising costs. Until people stop leaving the lights on and complaining about their energy bills, we will get nowhere.

- **Knowledge**
  We need to let people understand what resources they are using and how much it is costing them-and what they can do about it. (Very closely aligned to Bill's points 2 and 3).

- **Scale**
  We need to get away from the sustainable option being the most costly (and problematic) and position it as the new normal. To do this we need to achieve scale rapidly-how do we achieve this?

Bill Bordass

- Making things simpler and doing them better

- Following through from design and construction into use.

- Understanding the needs of occupants and management and designing control systems to suit.

Doug King

- Buildings are expensive but LZCTs are even more expensive, which is why Government has to subsidise them.
- Carbon will become increasingly expensive, so what will happen when the subsidies run out and the technology needs to be replaced?
- Are the present incentives distracting us from doing what we should be doing: designing and learning from inherently low carbon buildings?
- How do we take a new approach that will enable the industry to learn about what works and what doesn't before it's too late?

Following the presentations the audience were asked to pose questions to the panel (Chairman and Presenters) and the debate was opened. The main points from this debate have been summarised below:

Audience

- Reduction in funding of Carbon Trust has reduced the organisation's ability to support industry.
- Performance of PFI projects is not living up to aspirations in terms of energy targets.
- On the subject of BIM, architects hopeful that the industry can adapt and looking forward to working with 'Building Scientists'.
- Suggestion that there is a lack of understanding in relation to the energy performance of buildings; lighting vs other energy usage?
- Questionable accuracy of building modelling? Shading from trees?

Mike Roberts

- Who is in charge of the design? Architect? Engineer? Lack of common understanding within industry.
- Building Science important but lack of skills in industry.
- Design teams work as separate entities, not always collaboratively.

Prof. Doug King

- Modelling can be very accurate, including modelling of shading provided by trees, it just takes time to do.
- Many models are produced without a full understanding of the building.
- Decarbonisation of buildings should be through technique not technology.

Bill Bordass

- Markets not geared up to support low carbon developments.
- Criticism of Carbon Trust for not creating technical infrastructure to achieve low carbon economy.

Audience

- Building residual energy need: how much can demand be reduced?
- Clarification on costs for Part L and BREEAM Compliance per unit?
- Suggestion that Part L and BREEAM Cost analysis carried out by Cyril Sweet?

- Greater post occupancy evaluation required to learn from good and bad developments.

- Frustration with lobbying: RHI, FIT's. Have we now got what we asked for and are no longer happy with it?

- Research into residual demand of buildings required.

- Define threshold of residual demand. Restrict energy availability by load type?

- Social change required to affect required reduction in carbon.

- Fuel poverty real issue for many. Can't afford the fuel bills and can't afford the efficiency measures required to reduce them. Will the Green Deal resolve this?

- Energy saving measures, such as retrofit of cavity wall insulation, not always understood by installers. This can cause issues like condensation and mould growth where incorrectly applied.

Prof. Doug King

- Agree that insulation installers do not always have sufficient knowledge to assess impact of retrofitting insulation. Each installation is essentially an 'experiment'.
- Solar hot water heating as opposed to FIT's, should be the approach adopted.

Audience

- The management of the design process is the key to the success of any project. Budget restraints / pressures and 'Value Engineering' can dramatically affect building performance.

Andy Ford

- A culture of mutual respect should be developed. All members of design / project team have skills to contribute.

Audience

- Manufacturers working hard to reduce embodied energy in design of products.

- Perceived lack of interest / distancing from energy efficiency / performance of buildings from occupiers as not generally owners of building?

Mike Roberts

- Experience has shown that value of eco-homes not recognised by valuers and mortgage lenders.

Audience

- Eco-homes still not perceived as being 'cool'.

- Energy supply in California based on per capita number.

Bill Bordass

- Ashrae have rolling 5 year programme of update of design guidance. UK Building Regulations currently updated on 3 year programme. Is 3 years too quick to revise guidance / regulation? General consensus was yes.

Audience

- Apparent lack of thinking outside of individual site constraints. Broader 'district' should be considered to realise potential for reduction in carbon.

- Link energy use targets for particular building to access control system to allow assessment of energy use per building per occupant.

- General feeling that tonight's debate whilst interesting and informative was too broad to focus on a particular issue and come up with some firm suggestions or ideas of how this can be addressed.

Mike Roberts

- Strong R&D required into modular system of design as currently we reinvent the wheel each time we design a new building.
- Each time the design team is changed we effectively design a new prototype.
- Too many people involved in procurement process.
- Sharing of knowledge key to making progress.