Edge Debate, ICE, 10 June 2010 Is the focus on carbon distracting us from saving carbon?

Is a concentration on carbon the best way to reduce carbon emissions from the building stock?

Bill Bordass

the **USABLE BUILDINGS TRUST** www.usablebuildings.co.uk

Where I am coming from

I AM CONVINCED THAT:

- Climate change is happening, and is largely man-made.
- We are close to tipping points, where planetary dynamics will take over.
- The West is living way beyond its means, we must make rapid and radical changes.
- We need to make carbon savings fast, it is the cumulative emissions that count.
- We must avoid displacement activities, and focus on what really needs doing.
- Global agreements will take time, we need to show the way nationally.

I FEAR THAT CURRENT UK POLICIES:

- Lack a coherent science base for addressing energy use in buildings.
- Are creating bureaucracy, confusion and complication.
- Are too high-cost, high-maintenance ... and high carbon.
- Will reap many unintended consequences.

I'll concentrate on what we can do for buildings in use: new and existing

All new buildings become existing ones as soon as they are handed over.





- UK fossil fuel usage lights 4 Buncefields a day.
- The 150,000 tonnes of oil stored at Buncefield is about the same as the Louisiana oil leak so far.
- It would be great to track carbon rigorously from source to end user >>



NOTE: Oil leak estimate based on 20,000 barrels per day. The figure may be higher.

But where do we start? We mustn't look through blinkers

OTHER IMPORTANT POLICY OBJECTIVES:

- Energy security
- Biodiversity
- Pollution and degradation
- Cost-effectiveness, particularly now.
- A better, more robust building stock.
- Social objectives, including healthier indoor environments.

SHORT, MEDIUM AND LONG-TERM PLANS:

Plans are useless, but planning is indispensable DWIGHT D EISENHOWER

We need to think broadly, while making decisions as easy as possible for the players involved at the point of decision. *First the broader context, then energy, then carbon.*

The Credibility Gap: We couldn't

deliver low-energy and carbon performance reliably in the 1990s. We're still finding it difficult.



Data from the winner of a Green Building of the Year Award



SOURCE: data from S Curwell et al, The Green Building Challenge in the UK, Building Research & Information 27 (4/5) 286 (1999).

Carbon counting is not stable and never will be entirely, it varies with context

6

FOR UK ELECTRICITY (kgCO₂/kWh delivered)

- Projected level in the late 1990s used for 2010-12 policy analysis.
 0.42
- Building regs 2006 value for energy used 0.422
- ... and for savings by on-site generation 0.586 (so it's better to make it than to save it!!)

0.54

- Actual UK average 2006
- Marginal effect of an 1 kW change in daytime electricity use in winter (Orchard, 2006) 0.928

NB: figures include upstream emissions, but only CO₂, not other gases. Other countries can have very different carbon factors.

Carbon counting is not stable and never will be entirely, it varies with context

FOR UK ELECTRICITY (kgCO₂/kWh delivered)

- Projected level in the late 1990s used for 2010-12 policy analysis. *Planning for a renewable future?* >> 0.42
- Building regs 2006 value for energy used 0.422
- ... and for savings by on-site generation 0.586 (so it's better to make it than to save it!!)
- Actual UK average 2006 *Sharing it all out today?* >> 0.54
- Marginal effect of an 1 kW change in daytime electricity use <u>Want to decarbonise the economy?</u> >> 0.928

NB: figures include upstream emissions, but only CO₂, not other gases. Other countries can have very different carbon factors. The metric can drive the outcome How do we avoid unintended consequences?

SOME EXAMPLES THAT HAVE ALREADY EMERGED:

- Green tokens, e.g. visible but ineffective renewables.
- Zero-sum games, e.g. collaring scarce low-C fuels.
- Carbon dumping, e.g. outsourcing server rooms.
- Dash to biomass.

Getting the leverage

- Engage people
- Reduce demand
- Increase efficiency
- Avoid waste
- Decarbonise supplies
- Get results by doing things simply, cheaply ... and well!

Our building performance studies show **unmanageable complication is the enemy of good performance**. So why are we **making things more complicated in the name of sustainability?**

PREVENTION IS BETTER THAN CURE:

Low-carbon energy is a scarce resource not to be squandered.

In the short term, we need to focus on reducing energy requirements as quickly as possible; and the carbon will look after itself.

Take one zero off your budget and creativity begins. Take two zeros off and you have sustainability ...

JAIME LERNER, former Mayor of Curitiba, Brazil

www.usablebuildings.co.uk