

		FULCRUMCONSULTING
		Over-cladding FORUM
OVER-CLADDING FORUM – RECORD OF DEBATE		
Topic	Over-cladding of pre-2000 buildings	
Date	8 th June 2006	
The vote	<p>With the threat of global warming looming, is it time to take drastic action to curb our carbon emissions and wrap up our old 'leaky' buildings? Gus Alexander, in charming style, set the stage for a debate that went far beyond cladding opportunities.</p> <p>The audience gave a resounding 'no' to this motion. 44 against, 10 for and 16 abstentions. Even with valiant arguments the final vote showed little shift with only 13 for the motion. Alternative solutions won the day.</p>	

The following attended the debate:

Andrew Chadwick	Chadwick International	Sunand Prasad	Penoyre and Prasad
Andrew Marsden	Willis	Tim Attwood	Alan Conisbee & Associates
Andy Pearson	Building Services Journal	Tim Harris	Expedition Engineering
Alan Calcott	CAT	Gary Rawlings	Make Architects
Barry Edwards	Bristol Zoo Gardens		Gus Alexander
Bruce Blackhall	Fitzroy Robinson Ltd	Elanor Warwick	CABE
Chris Grasby	Ryder HKS	Paul Ruysevelt	ESD
Clare Payne	Willis	Will Stevens	Whitby Bird Facades
Dave Worthington	ESD	Bill Gething	Feilden Clegg Bradley
David Furse-Roberts		Andy Ford	Fulcrum Consulting
Duncan Bainbridge	Austin Smith Lord	Brian Mark	Fulcrum Consulting
Georgina Manson	Boswell Mitchell & Johnston	Richard Shennan	Fulcrum Consulting
Graeme Rapley	Woods Bagot	Peter Mark	Fulcrum Consulting
Hannah Routh	Energy for Sustainable Development	Saud Muhsinovic	Fulcrum Consulting
Hari Bell	Bell Phillips Architects	Kevin Bishop	Fulcrum Consulting
Harry Townley	Balfour Beatty	Clare Wildfire	Fulcrum Consulting
Helen Gamble	Boswell Mitchell & Johnston	Peter Nissen	Fulcrum Consulting
Ian Caldwell	King's College London	Clare Manley	Fulcrum Consulting
Ingrid Stevenson	Chadwick International	Victoria Caesar	Fulcrum Consulting
Ivan Rodriguez	DSSR	Danielle Harvey	Fulcrum Consulting
Jane Alexander		Sandy Sian	Fulcrum Consulting
Josie Winch	Josie Winch Architects	Chris Puttick	Fulcrum Consulting
Kirsty Staff	Willis	Nick Boid	Fulcrum Consulting
Malcolm Hardacre	McBains Cooper	Nick Barker	Fulcrum Consulting
Mike Warner	CBRE	Greg Byrne	Fulcrum Consulting
Norman King	Austin Smith Lord	Dave Selvage	Fulcrum Consulting
Phil Ogle	Oxley Conservation	Chani Leahong	Fulcrum Consulting
Roxanna Adam	SRO	Tessa Parnell	Fulcrum Consulting
Samantha Hunter	Woods Bagot	Dean Viapree	Fulcrum Consulting
Simon R Tilleard	Natural History Museum	Andrew Steele	Fulcrum Consulting
		Tom Randall	Fulcrum Consulting
		Graham McAslan	Fulcrum Consulting
		Andrew Thomson	Fulcrum Consulting
		Kenny Allan	Fulcrum Consulting
		Martin Rockport	Fulcrum Consulting
		Dave Glanville	Fulcrum Consulting
		Susie Diamond	Fulcrum Consulting
		Daniel Birks	Fulcrum Consulting
		Andrew Wilson	Fulcrum Consulting
		Xaranzana Fueyo	Fulcrum Consulting
		Gwen Mark	

The case for "this forum believes that all pre-2000 buildings should be over-clad by 2050"

Speakers:

Paul Ruyssevelt, Energy for Sustainable Development

Will Stevens, Whitby Bird Facades

Elanor Warwick, CABE

- Pre 2002 buildings have almost twice the CO₂ emissions of post 2002 buildings.–In 1981 a typical 80 square meter council house would require 5.4 tonnes of CO₂ p.a. (3- space heating, 1.4 water heating and 1 for lights & appliances). Now in 2006 this is reduced to 2.9 tonnes of CO₂ p.a. (1 space heating, 0.7 water heating and 1.2 for lights & appliances). The same is true of air conditioned offices –In 1995 a typical office would have 6 tonnes of CO₂ p.a. (1.52 space heating, 1.42 space cooling 0.07 water heating and 3 for lights & appliances). Now in 2006 this is reduced to 3.3 tonnes of CO₂ p.a. 0.60 space heating, 0.73 space cooling 0.07 water heating and 1.8 for lights & appliances).
- By 2050 we will have 25million houses pre 2002 and 8million houses post 2002. The speed of replacement of housing stock means that the new building stock is going to have very little effect on the overall CO₂ emissions
- Cavity filling, loft insulation and new boilers won't deliver the necessary CO₂ reduction to hit the 2050 target. What needs to be done is external over cladding of facades, internal performance enhancements and replacement of worst performing parts ie windows. This is possible, practical, sensible, reasonable, incremental and inevitable
- In commercial buildings cladding life is 20-30 years and in residential buildings cladding life is currently up to 100 years
- Cladding could be viewed as a positive opportunity to improve the public realm –For every heritage building where cladding may not be suitable, there are 100's where it would be an advantage City point botanic house has been given additional light. Grimshaws stock exchange building is an example of a duckling into a swan.
- Cladding a building can mean re-use, re-invention and re-branding
- Mass housing is where the majority of the work should be done and its time to come up with a 20th century form of mock-Tudor cladding.- Over cladding with new and interesting materials opens up many possibilities:
 - Flat roofs can become green roofs with the added benefit of amelioration of the heat island effect.- Green walls are also a possibility as in Paradise Park.
 - PV's can be included in the cladding with the dual function of electrical generation
 - Can have images of trees projected across building facades
 - Can stimulate the market in high tensile new materials- Open up a DIY market for home cover kit- anything from chintz to Berbery
- Over-cladding is an excellent temporary solution-It will protect buildings and reduce carbon footprint until our bad energy-guzzling habits have been put right.

The case against "all pre-2000 buildings being over-clad by 2050"

Speakers:

Richard Shennan, Director, Fulcrum Consulting

Gary Rawlings, Make Architects

Bill Gething, Feilden Clegg Bradley

- External insulation relates to floor-space not carbon emissions.
- Cladding is not enough! - We actually need to reduce our emissions by 20% on everything.

We need more holistic solutions and change the way we live our lives. It comes down to every individual eating local produce, cutting commuting & foreign holidays and generally reducing consumptions. Housing accounts for 28% of CO₂ emissions but it is food miles & globalisation that cause the problem.

- There are practical difficulties with cladding and there's always the heritage issue...
- There are alternative solutions capable of reducing CO₂ emissions in existing building stock without destroying their visual splendour.
 - New buildings can be purpose-designed to act as a heat source for existing buildings with a net annual heat demand. They can collect heat through passive solar gain, human activity or waste heat from essential commercial activity and this heat can be stored using ATES (Aquifer Thermal Energy Storage) or UTES (Underground Thermal Energy Storage) to be used when required.
 - Many cities demonstrate simultaneous heat demand from some buildings and heat excess in others. This opens vast opportunities for the employment of urban heat networks and ATES. Further opportunities arise by looking for heat balance over a year demonstrated by IF Technology in Holland at Eindhoven University. In Britain 'The Carbon Masterplan Project' is underway. This is the application of ATES using concepts of Victorian engineering at the South Kensington Cultural and Academic Estate. This project will provide large scale saving across the estate, an estimated 197,294 MWhrs per annum equating to 55,500 tonnes of CO₂ per annum or £8 million energy bills per annum. Vastly more than can be achieved by cladding our venerable cultural centres!
 - Reducing waste heat from power stations by linking to heating networks in new and old buildings.
 - Internal insulation. –Not as efficient but visually more acceptable
 - Adapting to a different level of comfort. Parker Morris in 1961 was designing for living spaces at 18 °C with kitchen & circulation space at 16 °C
 - Retreating into houses- Designing heating systems such as the Japanese brazier where heat is delivered directly where it's needed.
- We need to develop an alternative framework for trade– A Carbon Quota. This will address the central issue of CO₂ emissions. Its equitable, provides a choice and creates a market for carbon. This trading will promote innovation which is what is needed.

Interesting points of discussion from the audience:

Overcladding

- ❖ Although the Englishmen's house is his castle he can probably be bribed so it may be possible to develop an over-cladding programme.
- ❖ Over-cladding involves using large amounts of material to reduce someone's carbon footprint.
- ❖ We are not on track to meet the renewable target. –Over-cladding will buy us time
- ❖ Insulating the façade is a good tool in the armoury, 'The shrubbery on our buildings'.

Alternate solutions

- ❖ We need more solutions to producing alternate power then we don't need to worry.
- ❖ Technological solutions, ethics & generation of energy all need to be tackled together- Its not one or the other.
- ❖ We need to separate out concepts- heat and electrical power generation. –We should do everything that we can in all realms.
- ❖ In rural areas there are large areas of land that can capture & divert heat into dwellings.
- ❖ Tackling the carbon footprint is a matter of educating the public –if people demand it then we shall find ways of providing it. However its worrying seeing the number of patio heaters and air conditioning units being sold at DIY centres.
- ❖ Carbon trading. The open market is the best way. However will this mean death to the poor through hypothermia?-Rising energy prices will hit the poorest the hardest, not the most energy flagrant.
- ❖ In Britain the most sustainable insulation is wool. Why not use it efficiently and increase the level of over-cladding on people rather than buildings.