

Held at the Institution of Civil Engineers on 10<sup>th</sup> February 2003

Jan Hellings, Construction Industry Council, Director FaberMaunsell – Gave a brief introduction to the evening and stressed that the presentations would be brief in order to give more space for the debate. He gave apologies for Paul Finch who was unable to make the debate.

Paul Velluet, Assistan Regional Director English Heritage

Tall buildings may be sustainable, or they may not be. For English Heritage (EH) the starting point in thinking about sustainability is understanding the historic environment. This can be an irreplaceable advantage providing a crucial economic and social resource.

EH think of sustainability, not just in terms of performance, but also in cultural terms. Survival of assets as well as well as individual developments.

Also 1960s listed tall buildings, and how to enhance their performance, for example Millbank Tower.

EH is not against tall buildings following a location policy. They are currently launching a guidance paper with CABI on their policy on tall buildings.

Challenges view that tall buildings are intrinsically sustainable, or any more so than low or medium rise.

The Mayor's London Plan is about usage and availability of land – high density can be achieved without height.

EH supported Meryll Lynch and Swiss Re, would like to see a performance comparison to prove whether tall buildings out perform lower rise.

Will Pank, FaberMaunsell

Produced a report in association with environmentalist Herbert Girardet for the Corporation of London entitled 'Tall Buildings and Sustainability'.

Is sustainable construction happening in common practice? No, not yet!

New buildings tend to perform better than existing stock.

London Plan – trying to develop city within existing city limits.

Not trying to turn London into Manhattan, but trying to cluster tall buildings around existing transportation hubs.

In London 57% of material consumption is in construction

Repetitive nature of building frame allows saving

City Point – reused, re-clad and re-designed

Need both flexibility and future adaptability

Holloway Circus Tower example – 50% of embodied energy is in the floor plate.

Precast concrete planks on steel beams more sustainable than traditional approach

Majority of energy in buildings is in operation rather than construction

In tall buildings, heating and hot water use the most energy – intelligent facades, natural ventilation

Tall buildings should take advantage of unobscured skies and use more natural daylight.

Sustainability needs a triple bottom line approach. Commitment from client, designers, constructors and operators.

Tall buildings are less constrained by street layouts so orientation can be used to capture the sun and wind. e.g. Bill Dunster's Flower Tower or PVs integrated into the façade

No truly sustainable buildings in London, we have a very poor record on energy usage

## Notes of Edge debate No. 16: Are Tall Buildings Sustainable?

Examples abroad:

Commerzbank – highly developed building management system. 4-storey winter gardens up tower, heated by Frankfurt's heat and power scheme. Client believed if building increased productivity by 1% it would pay for itself.

Ken Yeang's eco-towers in Malaysia.....

Archie Galloway, Corporation of London

The City is the world's largest international business centre. Currently doing a study of the clustering of commercial activity.

The Corporation look for flexibility and by implication longevity – ability to remove redundant equipment, modernise, change use

Sponsored Combined Heat and Power serving Corporation's property

Connection with public transport

Construction methods/ timing – demolition in particular for residents and workers

Discussion

Q Why is the Planning Committee's first concern flexibility, why not the developer's?

A Don't want any white elephants

Power, prestige, status and aesthetics are bigger drivers than value or sustainability

Tall buildings are inefficient due to small floor plates broken vertically

Higher building – more cost, but increased profit for consultants

Post 9/11:

Fire escapes based on phased evacuations, no good in terrorist attack

Increased wind speeds at ground level

Terrorism threats targeted towards high prestige buildings

Climate change – will increase wind speeds

Increased cost of maintenance

Who gains and who pays for tall buildings

Total Urban Area Efficiency:

Need to consider wider urban area

Australian study compared city density with energy use. Highest energy in low density cities like Perth, lowest energy use in places like Hong Kong where the energy use of actual buildings is quite high, but offset by reduced transportation energy.

The German examples presented actually let too much light into the buildings causing practical problems such as glare.

Photovoltaic panels work well in the horizontal plane (not just in the horizontal).

The important issues are the long-term, regional sustainable development issues – not the sustainability of individual buildings.

In response to an earlier comment – air-conditioning systems in medium-rise buildings are as great a terrorist target risk as those in high-rise buildings.

The impact of 9/11 will have a knock-on regulatory impact on the cost of tall buildings.

Re-emphasised the need for objective comparisons of the sustainability impact of different building types, e.g. comparison of high and medium rise.

The iconic status of tall buildings is a big driver.

## Notes of Edge debate No. 16: Are Tall Buildings Sustainable?

Before the Second World War, the City employed 470k workers compared to around 300k today and that the transport infrastructure was adequate then.

He remarked that public transport investment and improvement had let the Capital down. Although he conceded that the City was relatively well served with underground stations and bus routes.

He restated the need for CrossRail.

Question – the motion was are tall buildings sustainable – not are they desirable! There is a necessity for dense cities and although there are additional sustainability costs for building and operating tall buildings, these costs are offset by savings resulting from reduced travel costs (studies have not been undertaken to quantify/prove this). We should talk about the 'real' issues and not be fashion driven.

Question – the discussion and examples have focussed on tall commercial buildings, one of the key aspects of sustainable development is social and therefore we should address the provision of affordable residential housing for key-workers in large cities.

Question – how tall is tall; the definition of 'tall' has not been defined! The lack of knowledge about sustainability and tall buildings is staggering! Should we build tall buildings in clusters around transport termini that have sufficient capacity? We need to look at the impacts of transport, relative to construction costs. It's not just the city that should be concerned about tall buildings – we all have our pensions invested in such buildings!

Question – the panel have not addressed sustainable, mixed-use development – this is key to implementing sustainability of cities. We need to think how we are going to achieve high density mixed development – all successful high-density cities have high-density residential developments.

We need to stimulate a greater market in high-rise residential housing.

Need to address mixed use development and suggested that compact cities need not mean high-rise cities. He stated that, in general, high-rise housing in the capital was for the rich.

MORI survey about who would want to live in the SkyHouses. He spoke of the 2000 units in the Barbican which were now all sold. He welcomed further tall residential developments in or near to the city and reinforced the importance of flexibility of use in tall buildings. He concluded that although remote and home working had been tried, people still need to come together to do business.

The Chairman briefly concluded by saying that sustainable cities are about sustainable mixed-use development and in answer to the motion, the answer was possibly!