

Phallic Symbols of the 21st Century

During module 3, the students on the AEES MSc were given a lecture by Ben Able, a Sustainability Engineer working for Hilson Moran, an engineering consultancy who have designed services for 30 St Mary Axe (aka the Gherkin) (Wikipedia 2011) and Bishopsgate Tower (aka the Pinnacle) (Wikipedia 2010a)

At the end of the lecture, the author commented on his unease with the Pinnacle:

“Having lived for 20 years near to where Bishopsgate tower is being built, I can't help but think 'oh God, not another glass phallic symbol going up in that part of London'. Yet Bishopsgate Tower is in one of the poorest boroughs in the UK, so it seems that none of the money that gets poured into these buildings [on Canary Wharf] finds its way to those actually living in Tower Hamlets. I'm wondering if Hilson Moran consider their social responsibilities when putting these buildings up?”

In a world of ever more super-tall buildings (the Council on Tall Buildings and Urban Habitat (CTBUH) now list over 100 buildings reaching over a ¼ Kilometre into the sky (CTBUH 2010)), this paper looks at the environmental and social impact of skyscrapers (as defined by (Wikipedia 2011)). It concludes that this impact is too great, and therefore legislation is required that makes the building of super-tall buildings in the UK difficult. This regulation should favour reuse over rebuild and include tight environmental construction standards as well as design innovations such as designing for deconstruction.

Status Symbols

High buildings have been used as status symbols since the dawn of human history:

“Throughout the history of architecture, there has been a continual quest to build high. The effort to create something awe-inspiring resulted in a variety of architectural forms. At times mankind built Egyptian pyramids, Greek temples, Roman Triumphal arches. These structures shared in command of height symbolizing pre-eminence of man's communion with God, his engineering skill, power, wealth, his superiority above others.” (Naz 2007)

The skyscraper is the modern day icon of superiority that expresses the economic might of global corporations (Law 2008) the great architectural contribution of capitalist society; a glorification of secular capitalism and its values (Thornton 2005). The Gherkin is typical of this quest for prestige and power. Originally built as the London Headquarters for insurance company Swiss Re, it has become one of London's pre-eminent high-rise landmarks. Indeed, the 18 companies that it is now home to are willing to pay up to 15% higher rent than other top-grade London City offices, because they see the tower's powerful and enduring wow factor as a promotional tool (Spring 2008).

The Pinnacle is another super-tall building being built for a financial industry client. Planned to be the tallest building in the European Union, it has since had to be scaled back due to concerns of the Civil Aviation Authority (Skyscraper News 2010). However, once built it will still be the second tallest building in the UK and the second tallest building in the European Union, outside of Moscow (Wikipedia 2010a).

But whilst Douglas calls the Skyscraper a “vivid and flamboyant expressions of the desire to build something fresh, new and forceful” (Douglas 2004), there are those who are less enthusiastic. In a 2001 speech, the HRH Prince of Wales expressed his unease with high-rise buildings:

“Most obviously, it is a building [the skyscraper] whose function is utilitarian and commercial, rather than civic or sacred; a so-called 'statement building'.” (HRH The Prince of Wales 2001)

Much like the author, Prince Charles even went on to label such buildings as “phallic sculptures that say more about an architectural ego than any kind of craftsmanship.” At the time, such controversial comments even received the backing of Paul Hyett, President of the Royal Institute of British Architects (RIBA).

Utilising Space

Could it be that Skyscrapers are a necessary response to the space challenges of modern cities and the need to restrict urban sprawl? Naz argues as much:

“Geographically, the pressures of increased land values, urban accessibility, expanding urban population, globalization of urban economies, and locational preferences of businesses made the skyscraper in the developing world inevitable.” (Naz 2007)

But one could also view the high-rise building as a means for the commercial developer to create wealth from scarce urban land resource. Willis believes this is the case and laments architecture being reduced to the pursuit of profit (Willis 1995). Law says UK land development is distorted because of an economic imbalance across the country as a whole, whereby excessive pressure in London and the South East has led to the unnecessary erection of tall buildings on an artificial premise of commercial necessity (Law 2008).

Furthermore, in London the amount of office space offered by the Gherkin and Pinnacle is already available elsewhere. Those two buildings will occupy 516 thousand and 1.4 million square feet of floor space respectively, and yet the Times reported on October 12th 2009 that there was 8.6 million square feet of empty office space in London. So combined they will only consume one quarter of the space already available.

Social Implications

Canary Wharf is now home to many of the UK's tallest buildings. It is a major business district of London and something like 90,000 people work there in some of the world's major banks, media organisations and professional services (Wikipedia 2010b).



Figure 1: Canary Wharf (Source: Wikipedia)

Yet the London borough that is home to Canary Wharf (Tower Hamlets) is also home to some of the poorest inhabitants of London (MacInnes et al. 2010). In an interview for The Guardian, Tower Hamlet's London Assembly member, John Biggs, was asked to comment on the extremes of wealth in a borough that has both a booming business district and high poverty rates:

"I think progress is slow and unsatisfactory. Yes, there's a lot of need and poverty and it's not being adequately addressed. Anyone who aspires to leading the borough has got to have a real hunger for addressing those social and economic injustices." (Hill 2010)

Although it seems things are improving, with 7000 local residents now employed at businesses in Canary Wharf (Wikipedia 2010b), having worked in the area the author believes that the locals more often than not fulfil low paid and low skilled roles, such as cleaning and maintenance. These sorts of jobs are unlikely to make

a huge difference to the poverty gap.

Prince Charles was predictably forthright in his view regarding the social implications of developments like Canary Wharf, arguing that giant buildings have immense public visibility and yet serve only a privatised purpose, contributing no public good and not addressing communal need:

“They [skyscrapers] are less concerned with civic status, community expression or public good, than they are with the benefits and pre-occupations of the businesses that pay for them.” (HRH The Prince of Wales 2001)

Aesthetics

The proliferation of tall glass buildings seems to owe a great deal to the dominant architectural style of modernism which continues to be the watchword for corporate buildings of the 21st Century (Wikipedia 2011). This idealises the machined aesthetic and eliminates unnecessary detail, emphasising sleek lines that nicely convey a slick corporate image. Thus architects have embraced glass as the essential cladding material, because its minimal environmental envelope supports a reductionist approach and still permits a building to have “depth, discovery, mystery and shadow” (Richards & Gilbert 2006). However, one might also argue that this has led to a world made of identikit cities, where the shiny financial centres of Dubai look much like those of Shanghai, Hong Kong, Chicago, New York and increasingly the London district of Canary Wharf.

Postmodernism is a reaction against the austerity of the modernists and architects subscribing to this movement have distanced themselves from the minimalist functional style they see as boring (Wikipedia 2010). 30 St Mary Axe is an example of such a building, because although its glass facade is in keeping with the modernist approach, its shape is certainly not.

But once again HRH Prince of Wales was outspoken on the aesthetic values of the skyscraper whilst addressing RIBA in 2001, when he said that he was offended by these “alien high-rise buildings”. He went on to offer the opinion that they may very well wreck the sensitive balance achieved by harmonious Renaissance, Georgian and Victorian contributions to the European city skyline:

“In their very scale and their functionalist aesthetics they [skyscrapers] simply don't fit within the city and are doomed to long-term failure.” (HRH The Prince of Wales 2001)

Environmental Concerns

Ben Able presented the Gherkin as “The UK's First Environmentally Progressive High Rise Commercial Office Building”, detailing energy efficient schemes such as natural ventilation and lighting. Such systems are supposed to achieve up to 50% energy savings from traditional office buildings (Able 2010). But perhaps the reality is somewhat different, with the building's services department admitting

that 50% savings were a bit over-ambitious. This is because the majority of tenants have opted for all-year round air-conditioning, with Swiss Re being the only company using natural ventilation and no internal partitions to block the air flow (Spring 2008). In the introduction to a 2009 journal of the Council on Tall Buildings and Urban Habitat (CTBUH), which looked specifically at the energy requirements of the Gherkin, the impact of the extra equipment and materials needed to construct such a building were made clear:

“Tall-buildings generally require a greater investment of initial embodied energy per unit gross floor area compared to low-rise buildings.” (CTBUH 2009)

The journal also found that the energy required to repair, maintain and perform 'top-grade' office refurbishments for the building were equivalent to almost a quarter of its lifetime operating energy requirements. Clearly maintaining the prestige and power of the Gherkin comes at an environmental cost too.

Skyscrapers also require energy consuming services that low-rise buildings do not; for example, elevators, and systems for pumping water to the upper floors. They pose other environmental challenges too. Roaf et al. devote a whole chapter to the problems with high-rise glass facades, such as sealed high-rise environments necessitating mechanical ventilation, which in turn leads to ever higher energy demands, poor air quality and 'sick building' syndrome. Then there's daylighting and privacy issues (Sue Roaf et al. 2009). There are detrimental urban impacts such as wind downdrafts and overshadowing. They have low external surface to floor space ratio, meaning there's less potential for solar arrays. Finally, there are end-of-life issues; every year, 72.5 million tonnes of construction and demolition waste is generated in the UK, so designing for deconstruction in order to recapture much of the embodied energy of that waste is key in reducing the impact (Morgan 2006). But recovering materials from a building reaching up 110 stories is much more challenging than doing the same from a two-storey development.

Conclusion

As powerful conveyors of the economic might of global corporations, skyscrapers are clearly fit for purpose. However, this paper has found many problems with buildings like the Gherkin and the Pinnacle. In a historic city like London, with its predominately low to medium-rise skyline, super-tall buildings have a detrimental effect on the harmonious balance of the city. They also have negligible (no) social benefit. Ben Able argued for the efficiency of scale when questioned about energy performance, but in fact it appears the opposite is true; scale is inefficient because of the complications introduced. In fact, high-rise buildings have such a large environmental impact, their construction cannot be justified in a world suffering from the threat of uncontrollable climate change.

In his lecture on sustainable construction during module 1, Jonathan Essex concluded that the primary means of reducing the building industry's environmental impact is to maintain, reuse and refurbish existing infrastructure

(Essex 2010). Essentially his argument was that we need to build less and reuse more. Perhaps then the biggest mark against the Gherkin and the Pinnacle is that they are simply unnecessary in a city where their office space was already available.

The answer then must be to make the building of new super-tall skyscrapers in the UK extremely problematic through legislation. Such regulation should favour reuse rather than rebuild. The aesthetic and social implications of new buildings have to be considered; do they conserve the historic value of the existing built environment and serve a communal purpose? Strong environmental construction standards are needed, such as the US Green Building's (USGBC) LEED (Leading in Energy and Environment) certification process. This considers site sustainability, water efficiency, energy and atmosphere, materials and resources, indoor environmental quality and innovation in the design process (U.S. Green Building Council 2010). Such innovation should include designing for deconstruction, so that the embodied energy of construction materials can be recovered (Morgan 2006). Perhaps through strong legislative considerations our built environment could become sustainable. High-rise skyscrapers are not.

This paper did not consider residential high-rise buildings and their social implications. 9/11 also brought into stark reality the safety of such buildings, but this paper did not have scope to discuss that issue. And despite its limitations, the Gherkin is a remarkable building; whilst discussing this paper a friend of the authors commented on the beauty of it and he is not alone in such opinion. Indeed, tourists flock there and one can find references on many tourist information websites (see for example (Tourist Information UK 2011)). An interesting topic of research might be the impact on tourism of such modern buildings and others like it. People clearly like the Gherkin as a working environment too. Linda Felmingham, administrator at City law firm Hunton & Williams who have offices there, commented, "We've been in the building three years now, and I still love working there" (Spring 2008) Why is that? What can be learnt from the building that can be reused in our existing building stock? And talking of reuse; this paper had not the space to discuss the realities of that; so an active area of research might be how to make our Victorian building stock comfortable and energy efficient? Another area only briefly mentioned was the types of jobs fulfilled by the 7000 local residents employed at Canary Wharf. From his own experience, the author believed them to be low paid, but the truth of that would be worth researching.

Since HRH Prince of Wales had much to contribute to this paper, it will end with one of his concluding comments in his speech to RIBA in 2001:

"There are some truly terrifying predictions that billions will be living in high-rise towers within the next few decades, nearly all in the developing world, and unless those responsible choose to learn from recent experience, both good, but also bad, then the consequences for the longer term may haunt many generations to come." (HRH The Prince of Wales 2001)

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