

Analysis of the gherkin in london



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“ The Gherkin” City of London

The City of London is one of the world’s greatest financial and business centres (Kenyon 2011), constantly reinventing itself and its architecture through the quality of new buildings and significant new projects or revisions of older buildings.

“ There is a pattern to London’s architectural geography and each individual building has its place within the overall whole that was established nearly 2000 years ago by the Romans having The Abbey and St Paul’s as two peculiar fixes within the overall dynamic of the metropolis” (Allison, 2009). Following events, such as The Great Fire (1666), post war Rebuilding of City of London, bombing and recession, impact in shaping London to what is it today: one of the most diverse cities, combining ancient and modern, competing with the demand of business and tourism, all taking place in a vibrant atmosphere.

In this context, on a site that was previously occupied by the Baltic Exchange building, a new concept of a building started to shape: “ The Gherkin”. In 1993 an IRA truck full of explosive devastated part of the city and the Baltic Exchange was so badly damaged that was impossible to rebuilt. The intention was that the new building sitting on that piece of land had to incorporate the historic parts in the new structure but that was a challenge for any developer. Instead, negotiations have been made and an architectural design that was so excellent that it couldn’t be refused, was taken on board. Hence, Fosters and the Gherkin.

The Gherkin has become a symbol of London, being recognised all over the world not just for its unique curved shape and prominence in the sky line, but for its technical and environmental innovations. It was built as a result of office space demand at that time in order to highlight that London business sector is one of the most powerful and the return of the concept of the very tall building, due to reduced space for building on the ground (Anthony Sutcliffe, 2006, p205).

Finished in 2004, it was designed by Fosters to be much taller (386m Millenium Tower). After numerous objections, concerning the high of the building and the negative impact on aerial traffic from Heathrow but also about interfering with the sight lines to St Paul Cathedral, was diminished in high, resulting the scaled down version of 180m tall.

So why is the Gherkin an example of modern and sustainable property development?

First, due to the overall form of a cylinder is catalogue as being “environmentally progressive” allowing wind to move around the building using cavities and the space between the double shell skin of glass. The wind is absorbed through the glass façade and transferred to the diagrid so then the air passes inside the building through 6 spiralling light wells and naturally ventilate it. This way air conditioning is used just as a supplementary method and the building uses 50% less energy than any other building of its size. This shape allows wind to flow smoothly around the building, reduce wind load on the structure and also minimize the wind at the slimmer base.

Second, due to the structure composed by diagrid and core the Gherkin is described as sustainable, mainly because there was no need for internal columns to support the structure of the design which meant a lower level of materials used in construction phase of the building. Also in the design process the use of sustainable materials was embraced including Lytag. (find reference).

Third, the materials used to cover the diagrid are utilising the daylight to the maximum potential. The wall of the diagrid is a double wall system. The outer wall is double glazed composed of triangular window pieces, including computer controlled blinds that can open if the temperature is higher than 20 degrees and wind less than 10mph. The inner wall is a sliding glass provided with automated shades that block the majority of heat gain and glare. The 2 layers permit the natural lit of the building as well as controlling the amount of light and warm air. The glazing allows full perimeter views (Allinson, 2009) so no matter where you are located in the building there should be 180 degrees visibility to the surroundings. Another key feature of the building is the caption of light at the top of the atrium that is transferred down the building through the six shafts illuminating naturally and being energy efficient.

In addition temperature and light are controlled by a weather reading software that adjusts the brightness according to how much is needed, and the temperature by closing/opening the window blinds. It is a smart building.

Having all these environmental friendly features incorporated in the design it “ undermines the idea that tall buildings are environmentally irresponsible,

dependent on huge amounts of energy” (Powell 2001). The Gherkin has received recognition for taking sustainability of sky scapers to the next level, being the unanimous favourite of the jury for the Stirling Prize 2004.

Constraints of the building (to find out in London)

How does the building interact with the public realm and how respects the historic sense of identity of the City of London?

The top dome is reclaimed glass from the Baltic exchange and has been used

The girl's skeleton was discovered in 1995 when the Swiss Re building, better known as the gherkin, was being built. For the next 12 years the body was housed at the Museum of London, after its discovery during an excavation. A service was held for the girl at St Botolphs Church after which her remains were reburied near to the gherkin. Taryn Nixon, Managing Director of the Museum of London Archaeology Service, described the reburial as a “ humane gesture”.

“ While we will probably never know precisely who this young Roman Londoner was, it is an elegant and fitting reminder of the City's rich layers of history, for Londoners of today and tomorrow,” she said.

Reference

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