Norman Foster

Sustainable design approach

Transparency and accessibility of the democratic process

1968: Foster and Wendy Chap- 
morgan Found Associates
1971: Willy Brandt House, 
German Chancellery, Berlin
1972: Sainsbury Centre 
for Visual Art, Notingham
1976: 1983: Renzo Piano, 
Distribut 
ion Centre, Swindon
1980: Merano, South Tyrol, 
Italy
Kong
1991: Terminal Building, San 
Francisco, California
1996: Reichstag 
Renovation, Berlin
1999: City Hall, London
2000: Swiss Re London
2002: HSBC Tower, London
2004: Heathrow Tower, New 
York City

CITY HALL, LONDON, ENGLAND

THE REICHSTAG, BERLIN, GERMANY

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Sustainable design approach

The building should demonstrate the potential of a sustainable, non-polluting public building. The building combines sustainable energy resources with an innovative heat distribution system. Cooling and heating are accounted for through geothermal heating / cooling distributed through the building structural members. The water used by this system is reused as flushing water for the toilets.

Ventilation should combine minimum heat loss and power usage while creating an excellent interior climate.

The building is naturally ventilated through a system integrated in the climate facade.

The building shape should allow for maximum volume and minimum heat loss area. The building shape is a multi-volume design. Because of this, the surface of the building envelope is only 60% of that of a rectangular building with the same volume.

The building shape should be optimised with regard to solar heat admittance. The shape of the building is derived from a geometrically modified sphere, designed to minimise the surface area exposed to direct sunlight.

The building shape is an important factor for the thermal properties of the building. A spherical shape minimises the surface area exposed to direct sunlight, resulting in lower heat loss and a more comfortable interior climate.

Conclusion

Sustainability is a starting point that Norman Foster has been using in the design process of many buildings throughout his career. Although it may seem that high-tech looks are itself the starting point of many of his archi-
tectures, the architectural buildings prove that a sustainable design approach can have a great influence on a building appearance. Both buildings are the result of extensive research and how minimal energy usage and pollution can be achieved.

It was interesting to find that the design of London City Hall’s completely different form is a consequence of the combination of various factors. The building is designed to be as energy-efficient as possible, and the materials used are carefully selected to ensure minimum environmental impact.

With regard to the transparency of the democratic process, it can be said that both buildings offer a very similar solution to the problem; the spiral walkway. Indeed Foster used his earlier project in Berlin as an example when designing the London City Hall. Both buildings also make a transparent appearance through the extensive use of glass. Although transparency is a returning theme in Foster’s architecture, the Reichstag and the City Hall are the only buildings that accommodate a spiralling walkway of this kind.

Norman Foster

Norman Foster was born in a working-class family in Manchester in 1935. When he was a teenager he started to get interested in architecture, especially the work of Le Corbusier and Frank Lloyd Wright. After his national service for the Royal Air Force he started studying architecture at Manchester University at the age of 21. After graduating in 1960 he won a Henry Fellowship to Yale University, where he gained a Master’s Degree in Architecture. He founded Foster and Partners Limited in 1967, which is now a worldwide practice, employing over 1,000 people. Over the past four decades the company has worked on a wide range of work, from urban masterplanning, public infrastructure, airports, civic and cultural buildings, offices and workplaces to private houses and product design.

He won numerous prices amongst which the British Architectural Prize in 1996. In 1999 he was granted a Knighthood in the Queen’s Birthday Honours, and in 1999 he was awarded a Liebherr Prize, becoming Lord Foster of Thames Bank. He is a member of the American Academy of Arts and Sciences.

Foster’s use of technology was therefore a first option for a theme. As the buildings demonstrate, Foster’s approach to architecture offers, seems to be missing in Foster’s architectural buildings, proof that a sustainable design approach can be achieved.

The glass dome should transport light into the building. The sunlight coming through the glass dome hits the cone and is then distributed into the building.

The building should have a transparent appearance to its surroundings to symbolise the transparency of the democratic process. To reach this, the dome and the entrance are mainly made out of glass.