

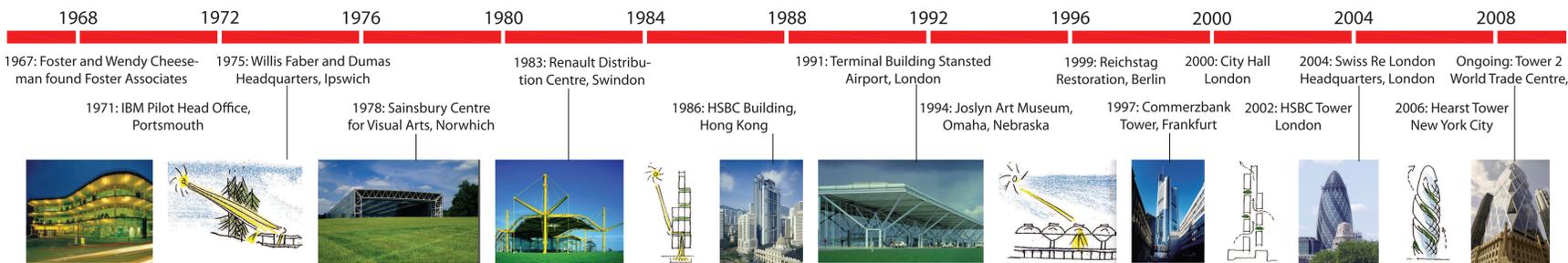
Norman Foster

Sustainable design approach
Transparency and accessibility of the democratic process

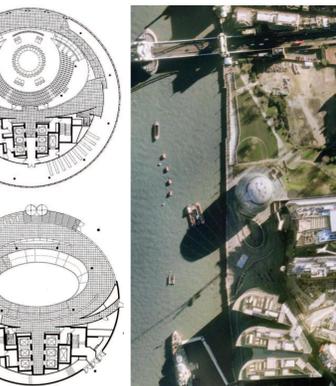
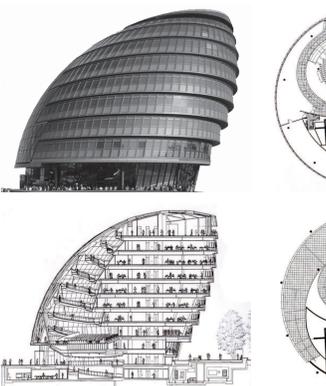
Methode & Analysis

Herm Ruesink 1375121
Marjolein van der Ploeg 1367854
Arnoud Herder 1397869

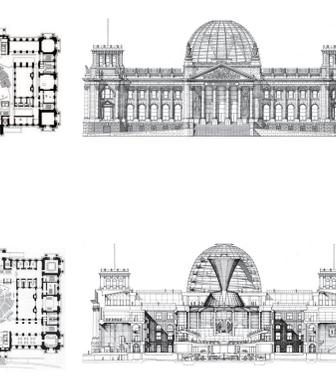
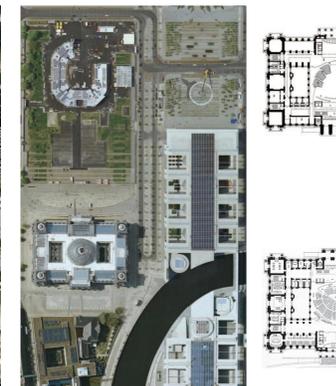
OEUVRE AND PRESENCE OF THE THEMES



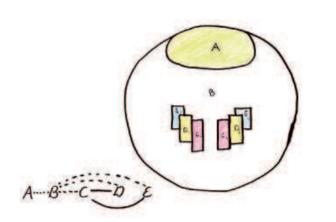
CITY HALL, LONDON, ENGLAND



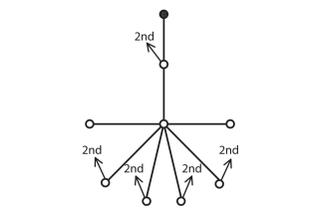
THE REICHSTAG, BERLIN, GERMANY



SPATIAL RELATIONS



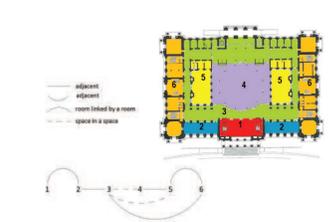
TOPOLOGY



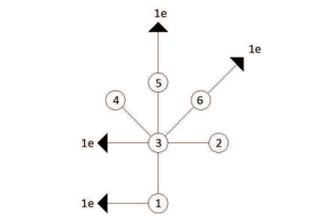
PARTI



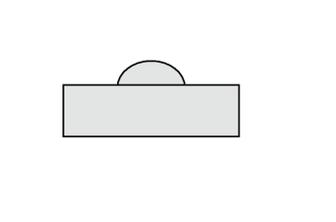
SPATIAL RELATIONS



TOPOLOGY



PARTI



PERFORMANCE

Transparency and accessibility of the democratic process

The public should be able to witness the activities of the local authority. This is realised through a spiral walkway running above the boardroom.

The building should have a transparent appearance to its surroundings to symbolise the transparency of the democratic progress. To reach this, the entire facade is clad with glass.

Sustainable design approach

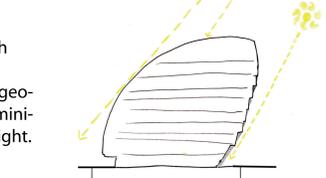
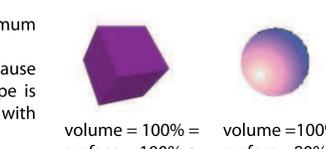
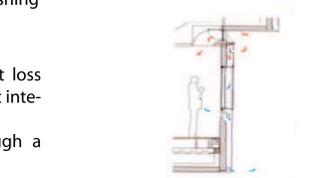
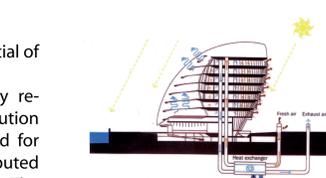
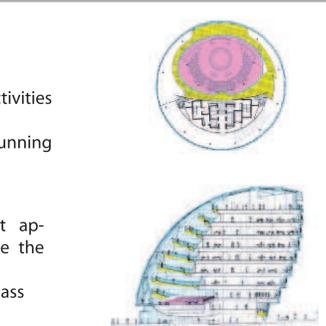
The building should demonstrate the potential of a sustainable, non-polluting public building. The building combines sustainable energy resources with an innovative heat distribution system. Cooling and heating are accounted for through geothermal heating/cooling distributed through the buildings structural 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 modified globe. Because of this, the surface of the building envelope is only 80% 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 minimize the surface area exposed to direct sunlight.

OPERATION



FORM



PERFORMANCE

Transparency and accessibility of the democratic progress

The public should be able to witness the activities of the local authority. This is realised through a spiral walkway running through the dome, above the parliament.

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

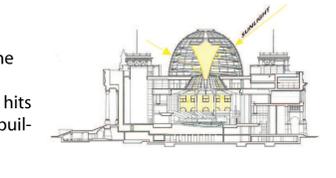
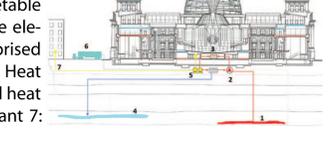
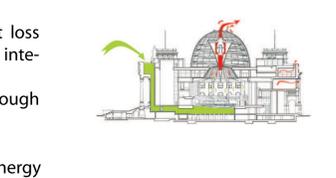
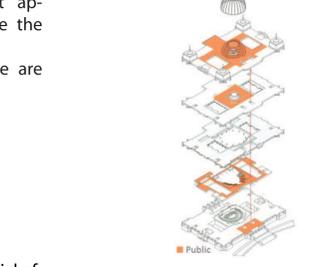
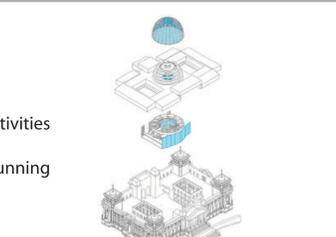
Sustainable design approach

The building should demonstrate the potential of a sustainable, non-polluting public building. Ventilation should combine minimum heat loss and power usage while creating an excellent interior climate. The building is mechanically ventilated through the glass dome.

The building combines several sustainable energy resources. Cooling and heating is accounted for through geothermal heating/cooling. A vegetable oil plant provides for electricity. In detail, the elements of which the climate system is comprised are: 1: Geothermal heating warm aquifer 2: Heat pump 3: Heating 4: Cool aquifer 5: Combined heat and power plant 6: Refined vegetable oil plant 7: Electrical power

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

OPERATION



FORM



BIOGRAPHY, CONTEXT & THEME SELECTION

Norman Foster

Norman Foster was born to 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 1961 he won a Henry Fellowship to Yale University, where he gained a Master's Degree in Architecture.

He founded Foster & Partners in London in 1967, which is now a world-wide practice, employing over 500 people. Over the past four decades the company has been responsible for a wide range of work, from urban masterplans, public infrastructure, airports, civic and cultural buildings, offices and workplaces to private houses and product design.

Current and recent work includes the largest construction project in the world, Beijing Airport, Millau Viaduct in France, the Swiss Re tower and the Great Court at the British Museum in London, an entire University Campus for Petronas in Malaysia and the Hearst Headquarters tower in New York.

He won numerous prizes amongst which the Pritzker Architecture Prize in 1999. In 1990 he was granted a Knighthood in the Queen's Birthday Honours, and in 1999 was honoured with a Life Peerage, becoming Lord Foster of Thames Bank

Theme selection

One of the first things that came to our minds is the fact that Norman Foster seems to have the tendency to use high-tech constructions. The method Foster uses to integrate innovative technology in his buildings however was less clear. Foster's use of technology was therefore a first option for a theme. While analysing London City Hall we found that a lot of the design was the product of the desire to build a low energy building. When we found that a similar concept lies beneath the restoration of the Reichstag, we opted for "Sustainable design approach" as our first theme. Our second theme is the result of our curiosity as to why Foster put a spiral walkway in both buildings. These spiral staircases are main features in both buildings and determine the appearance of the building to a great extent.

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 a high-tech look in itself is the starting point of many of his architecture, the analysed buildings prove that a sustainable design approach can have a great influence on a building's appearance. Both buildings are the result of extensive research as to how minimal energy usage and pollution can be achieved.

It was interesting to find that the shape of London City Hall is completely derived of climate considerations: The sphere reduces the heat loss surface of the building, and is modified to achieve the most favourable shape with regard to solar heat gain. The dome on the Reichstag however refers back to the dome that was present before the building was set on fire in 1933. The air current generated by the glass dome is used to ventilate the building. The cone in the middle of the dome is designed to reflect natural light into the building. Cooling and heating in both buildings are accounted for through geothermal heating and cooling. In the City Hall the heat is distributed through the building's structural members. The water used by this system is reused to flush the toilets. The Reichstag houses a refined vegetable oil

REFLECTION AND CONCLUSION

generator to provide for the building's energy needs. One major possibility that sustainable architecture offers, seems to be missing in Foster's designs: the use of sustainable materials. Although both the Reichstag and London City Hall are great examples of what can be achieved in the field of low energy buildings, the employed materials such as steel, concrete and glass are of more conventional character.

With regard to the transparency of the democratic process, it can be said that both buildings offer a very similar solution to this theme; the spiral walkway. Indeed Foster used his earlier project in Berlin as an example when designing the London City Hall. Both buildings also realise 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 spiral walkway of this kind.

