Norman Foster & Modern Architecture: Does Foster's High-Tech Architecture Respect the Building Context?

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Abstract

This paper raises questions about High-Tech Architecture of Norman Foster. It asks, to what extent does the building technology he employs respect the context, historically, culturally, politically, and socially? It thus examines the relationship to location and urban fabric and the artistic aspects of his architecture.

The research employs the analysis of a number of Foster's projects, delving deep into the critiques that exist about them. It delves into four categories of his projects through case studies: Firstly, transformation or redesigning buildings. Secondly the use illusionary concepts to reflect the social and political context and urban design. Thirdly, the locations within Nature, but not interact with them, and Finally, designing to serve political and economic agendas.

The case studies are the British Museum's Great Court in London, the Reichstag in Berlin, and Carré d'Art in France. Greater London Authority (GLA) and Willis Faber & Dumas Headquarters in the UK., the Sainsbury Centre for Visual Arts in the United Kingdom, the Sage Gateshead Centre in the UK, and the Scottish Exhibition and Conference Centre in the UK. Hong Kong and Shanghai Bank in China.

The paper reveals how Foster defends his approach to these projects. The findings reveal how Norman Foster deals with the context of buildings and how he justifies his bias toward technology rather than aesthetic values in his architecture.

Keywords: Norman Foster, High-Tech, Architecture. Context.

Introduction

Before we can criticize Norman Foster's architecture, we should first understand the emergence of an architect. According to well-known data, his hometown was Manchester, England. He was fortunate to be conscripted into the Royal Air Force in 1935, and he left it in

1956. According to Quantrill (1999), in 1961, he completed his master's degree in architecture at Yale University in 1963 after graduating from the Manchester University School of Architecture and City Planning. Finally, in 1967, he founded Foster + Partners.

Moreover, it is important for us to know what Norman Foster's architecture is, or at least, in view of the topic, how we can distinguish his style from other architects. Norman Foster's architecture is characterized by structural expressions and transparency, which reflect the use of natural lighting and ventilation through openings in the roof, streamlining by using minimalist glass skin, and using commonplace materials, and high-performance design. In fact, Foster imitated the concept of performance design, which was popularized by Buckminster Fuller, by employing the technologies to their end, such as the two-way circulation of elevators and escalators, which were initially employed at Willis Faber and Dumas, and sky gardens.

As Partners (2023) point out, Foster's works are machine-crafted by using CAD/CAM programs, ranging from automated robotic welders to computerized numerically controlled (CNC) metalworking equipment. Idan et al. (2023) show that he employs methods for dynamic computer modeling to assess how environmental systems affect the buildings, such as computational fluid dynamics, and customized software tools such as SMG and Whitehead's design templates. He employs them as solutions for the collaborative system while working with complex curves, transforming graphical information into a format that can be shared by separate digital systems.

In this context, this paper examines High-Tech Architecture of Norman Foster. Indeed, Norman Foster’s philosophy of using high-tech architecture has been reviewed from the point of view of some critics. It asks, to what extent does the building technology he employs respect the context, historically, culturally, politically, and socially? It also examines the relationship to location and urban fabric and the artistic aspects of his architecture.

Its aim is to throw light into the architecture of Norman Foster and specifically explore the relationship he either establishes or does not establish with the context. The objectives are:

1. To ascertain the design approach adopted by Norman Foster.
2. To reveal the deep seated bias towards technology
3. To ascertain the relationships established with the context: specially Nature.
4. To unearth how he justifies the employment of excessive technology to generate aesthetics, even at the expense of the contextual incompatibilities.

Research Methods

To generate data, this research employs focused probing as a research method. The buildings based on his design are studied and analyzed through case studies, focusing on his four main project categories: first, transforming or reconstructing existing structures, the British Museum’s Great Court in London, the Reichstag in Berlin, and Carré d'Art in France. Second, Foster's structures use imaginary ideas to represent social, political, and urban environments. This is examined through studying the UK's Willis Faber & Dumas Headquarters and the Greater London Authority (GLA). Foster’s projects that do not interact with the surrounding environment Including the Sainsbury Center in the England, the Sage Gateshead Centre in the UK, and the Scottish Exhibition and Conference Centre in the UK are thoroughly examined. Fourth, architectural projects created to achieve political and financial goals, such as the Hong Kong and Shanghai Bank in China are probed into. Finally, this paper outlines Foster's justification for his design strategies.

Findings

Transformed or Redesigned Buildings

Norman Foster, in his architecture of transformation or redesign, does not complete the work in the same style as old buildings, which indicates that he works out of the original context. In the British Museum’s Great Court in London in 2000, (Fig. 1), the transformation of the internal court of the museum into the greatest covered public court in Europe (Moore, 2012). The real issue with the project was to make it famous (Abel, 2007).

Therefore, it becomes clear that the commission of this project to Foster was based on his skills to highlight the building. Foster did not take into account the original design of the courtyard, imposing his style on the original building. The upper parts of the building are modern, with steel structures and glass. The lower parts follow the traditional style, with beige color, stone, and symmetry design (Abel, 2007). On the other hand, Foster's team have stated that a transparent roof would provide generous natural lighting (Quantrill, 1999).

Fig. 1: British Museum's Great Court in London, 2000, internal space
Source: Moore, 2012

It is argued that Foster used the stairs as an attempt to escape from the ground level, where he could not work perfectly. Moore (2012) describes the stair as a double stair and it arises almost nowhere. The ground-level design proves that Foster does not have the skills to design lower parts. According to Moore (2012), the design of the ground level depends on generalities and commonplaces

On the other hand, in Reichstag, New German Parliament in Berlin, 1999, (Figs. 2 and 3), Norman Foster ignored the original context, where it is noted that there is a difference in design style between the old buildings and the new parts. Abel (2007) points out that light structures and modern designs are in new parts of the building, and heavy structures and historic designs are in the old parts. Norman Foster claims that he used the transparent dome as a symbol of transforming from old into new, where the dome was a symbol of the historic element and glass with steel structures as a symbol of new technology (Quantrill, 1999).

However, it is argued that the use of steel and glass structures in this dome denies any historical style, and the architect's attempt to connect the old parts with new parts was not successful. Foster tries to use natural materials as industrial elements, which he can deal with. When he uses natural materials, like stone and concrete, he makes them light and pale (Abel, 2007). Foster focuses only on the zeitgeist without context, where the Reichstag does not express the German body politic but is a presentation of the technological power of new Germany (Abel, 2007). As a symbol of democracy, the building depends on using transparent glass and opening the roof to the public (Abel, 2007). However, the question remains about the internal space of the building.

Fig. 2: Aerial view of the Reichstag, New German Parliament -Berlin 1999
Source: Moore, 2012

Fig. 3: Reichstag, New German Parliament -Berlin 1999, front view
Source: Moore, 2012

In addition, Carré d'Art in Nimes, France, 1984–1993, (Fig.4), the building in the center of Nîmes, opposite the Roman Temple, is known as the Maison Carrée. As Davies (1988) points out, Foster does not use diagonals in the structure to make it look less industrial. In this case, there are questions about steel and glass.

Fig.4: Different views of Maison Carrée and Carré d'Art
Source: Davies, 1988

The building is indeed an attempt to simulate the opposite building (Maison Carrée) by its shape without materials. Foster attempted to simulate its classic neighbor through the square shape and reduce the height of the roof of the new building as low as possible (Brawne, 2003).

Illusionary Concepts

In Greater London Authority (GLA)-City Hall in the UK (1998)–2002, (Fig. 5), Foster's concept was the representation of civic democracy. To reflect this concept, Foster relied on shape, transparent materials, and a smart cooling system (Abel, 2007). It is argued that democratic practice will be through interaction with the public, not by shape. Moreover, the building does not respect the context, where "the hovering egg shape of the building does not relate either to London or to its political role" (Abel, 2007). The evidence of the illusionary concept of interaction with the public is that" the glass material which was used in the building reflects the sky that makes it non-transparent." (Abel, 2007). Another piece of evidence is that "the building form drives out the public rather than invites them, and it is lifted off the ground rather than connected with it." (Abel, 2007).

Thus, as Abel (2007) points out, it is clear that Foster focuses on global thinking about CO2 emissions and ventilation systems rather than the interaction between the public and their representatives. Moreover, the building comes to reflect the concept of change in the pillars of English life rather than the context of London life (Abel, 2007). In addition, "the concept of Reichstag and GLA buildings is the democratic symbol, using glass walls to let the public see their representatives, but they have to hear their representatives, not see them." (Abel, 2007). It is argued that this is illusionary democracy.

Fig. 5: Greater London Authority (GLA)-City Hall, exterior shot
Source: Moore, 2012

In Willis Faber & Dumas Headquarters for the insurance firm, Ipswich, UK (1971–75), (Figs. 6 and 7), Abel (2007) says that "although the building has urban features, it doesn't reflect the urban fabric." According to Davies (1988), "The design reflects the context through the external walls, which fit the site boundary, but not in the materials and structure; it is high-tech architecture rather than respecting the context." In this project, Foster dealt with urban design for buildings separately from his context; he doesn't study urban fabric. Abel (2007) says "Where he created an organic shape with a garden roof" and "Moreover, the black glass prevents the view of the inside building during daylight."

It is argued that the black glass gives the impression of a secret and private building, preventing the public from entering it. As Abel, (2007) says "Foster tries to reflect the social equalizing management theory, where he forces blue-collar and white-collar workers to enter from the same door." However, the black glass and the roof garden, which is isolated from the public, contrast with the equalizing concept.

Fig.6: Willis Faber & Dumas Headquarters, front view
Source: Partners, 2023

Fig.7: Willis Faber & Dumas Headquarters, aerial view
Source: Moore, 2012

Projects in the Midst of Nature

It is noted that although some of Foster's projects are located in beautiful Nature, they do not interact with Nature. For example, in the Sainsbury Center for Visual Arts, Norwich, United Kingdom (1974–78), (Fig. 8), Abel (2007) shows that "the building contrasts its surroundings. Where the structural materials do not relate to Norwich". According to Davies, (1988), "the building is a metal box; it does not respect its location; like a piece of furniture. Where its form gives it a machine-like appearance." However, Foster and Partners web site states that "Consequently, the Sainsbury Centre is far more than a traditional gallery that prioritizes artworks separately. Rather, it unifies several related tasks into one spacious, well-lit area" (Moore, 2012).

Fig. 8: Sainsbury Center for Visual Arts
Source: Davies, 1988

On the other side, in the Sage Gateshead (a center for musical training and performances) (UK, 1997–2004, (Fig. 9), although the project concept is to create a place with various and extensive social interactions (Ye, 2018), "the internal space of the building and structure is more convincing than the way by which the building relates to the city." (David, 2007). Similarly, in the Scottish Exhibition and Conference Centre, Glasgow, UK 1997, (Fig. 10). although the building is located amid beautiful Nature, where there is water and green areas, the building is closed rather than opened to Nature.

Fig. 9: The Sage Gateshead, external view
Source: Jencks, 2013

Fig. 10: Glasgow in the UK, external view
Source: Jencks, 2013

Buildings designed for Political and Economic Agendas

"Hongkong and Shanghai Bank Headquarters, China, 1979–1986, (Fig. 11), is a building for the Pacific Century," as Abel described it. It is located in the country that was most obviously announced as a tiger economy (2) as a declaration of economic power in East Asia. Therefore, "the trusses of the building simulate Sylvester Stallone's rippling pectorals." (Abel, 2007), (Fig12). This indicates that Foster worked to highlight the economic power of building. However, according to Abel (2007), "Foster focused on the impact of the building form rather than how it works." As Jencks (2013) says, "In this building, structural efficiency is used for merely utilitarian purposes without aesthetics."

Fig. 11: Hong Kong and Shanghai Bank Headquarters, external view
Source: Moore, 2012

Fig .12: Sylvester Stallone, an American actor
Source: Moore, 2012

Analysis of Case Study Observations

The analysis confirm that "the spirit of Foster's architecture is technology, where he depends on the appearance of innovation in his architecture without making an effort to change anything" (Abel, 2007). As Abel (2007) says, when Foster described the best architecture, he did not mention the context, where he defined it as a synthesis of all elements that independently make a building: the structure, the services, its environment, the relationship with the skyline, and the circulation around it. Abel (2007) also points out that Foster also does not work the lower parts of the building well, like the ground level, which is related to the site, but the upper parts, like the roof, he works them perfectly. Accordingly, Foster does not present convincing skills to deal with a location. In other words, his architecture is not harmonious with Nature, where it is gray, cold, and boring. He makes mistakes when he attempts to make the design more attractive (Abel, 2007). That may refer to a gap in skills to create artistic work. Table 1 shows the results of the analysis of Norman Foster's architecture.

Table 1: Analysis of Norman Foster's architecture
Source: Authors

Transformed or Redesigned Buildings		
Buildings	**Norman Foster's claims**	**Critics' Opinions**
The British Museum's Great Court in London, 2000	Making the building famous (Abel, 2007).	The upper parts of the building are modern, with steel and glass structures. The bottoms are traditional in style, with a beige, stone, and tonal design (Abel, 2007).
		The use of the staircase as an attempt to escape from the ground floor, where Moore described the stair as a double stair, arises almost nowhere (Moore, 2012).
		Ground-level design proves that Foster does not have the skills to design lower parts. The design of the ground level depends on generalities and commonplaces (Moore, 2012).
Reichstag,New German Parliament -Berlin 1999	Using the transparent dome as a symbol of transforming from old into new, where the dome was a symbol of the historic element and glass with steel structures as a symbol of new technology (Quantrill, 1999).	Light structures and modern designs are in the new parts of the building, and heavy structures and historical designs are in the old parts (Abel, 2007).
		When he uses natural materials such as stone and concrete, he makes them light and dull (Abel, 2007).

	As a symbol of democracy, the building depends on using transparent glass and opening the roof to the public (Abel, 2007).	What about the internal space of a building? (Abel, 2007).
		Foster focuses only on the zeitgeist without context, where the Reichstag is not a representation of the German political body but a display of the technological power of the new Germany (Abel, 2007).
Carré d'Art in Nimes, France, 1984–1993	Foster does not use diagonals in the structure to make it look less industrial (Davies, 1988).	What about steel and glass? (Davies, 1988).
	Foster attempted to simulate its classic neighbor through the square shape and reduce the height of the roof of the new building as low as possible (Brawne, 2003).	What about the materials? (Brawne, 2003).
Illusionary Concepts		
Buildings	**Norman Foster's claims**	**Critics' Opinions**
Greater London Authority (GLA)-City Hall in the UK (1998)–2002	Foster's concept was the representation of civic democracy. To reflect this concept, Foster relied on shape, transparent materials, and a smart cooling system (Abel, 2007).	I think the practice of democracy will be through the interaction with the public, not by shape (Abel, 2007).
		Foster focuses on global thinking about CO2 emissions and ventilation systems rather than the interaction between the public and their representatives (Abel, 2007).
		"The hovering egg shape of the building does not relate either to London or to its political role" (Abel, 2007).
		The building is meant to reflect the concept of change in the pillars of English life rather than the context of London life (Abel, 2007).
	Using a glass wall to let the public see their representatives (Abel, 2007).	But they have to hear their representative, not see them." (Abel, 2007).
		"The building form drives out the public rather than invites them, and it is lifted off the ground rather than connected with it." (Abel, 2007).
		The evidence of the illusory concept of interaction with the public is that" the glass material that was used in the building reflects the sky, which makes it non-transparent." (Abel, 2007).
Willis Faber & Dumas Headquarters, Ipswich, UK(1971)	The building has urban features, "where he created an organic shape with a garden roof" (Abel, 2007). Moreover, "the design reflects the context through the external walls, which fit fits to the site boundary (Davies, 1988).	"The design does not reflect the context in the materials and structure; it is high-tech architecture rather than respecting the context." (Davies, 1988)
		The building doesn't reflect the urban fabric." (Abel, 2007)
	Foster tries to reflect the social equalizing management theory, where he forces blue-	"The black glass prevents people from seeing inside buildings during daylight." (Abel, 2007)

	collar and white-collar workers to enter from the same door." (Abel, 2007)	The roof garden is isolated from the public, and I think that contrasts with the equalizing concept (Abel, 2007).
Projects in Nature		
Buildings	**Norman Foster's claims**	**Critics' Opinions**
Sainsbury Center for Visual Arts, Norwich, United Kingdom (1974–78)	The project is located in beautiful nature (Abel, 2007).	"The building is a metal box; it does not respect its location. Like a piece of furniture. Where its form gives it a machine-like appearance." (Davies, 1988)
	The Sainsbury Centre is considerably more than just an ordinary gallery that prioritizes artworks separately. It does, instead, combine several related tasks into one spacious, well-lit area (Moore, 2012).	"The building contrasts with its surroundings. Where the structural materials do not relate to Norwich." (Abel, 2007)
The Sage Gateshead (UK, 1997–2004, (Fig. 9)	The project concept is to create a place with various and extensive social interactions (Ye, 2018).	"The internal space of the building and structure are more convincing than the way in which the building relates to the city." (David , 2007)
Glasgow, UK 1997	The building is located amid beautiful nature, where there is water and a green area (David, 2007).	The building is closed rather than opened to nature (David , 2007).
Buildings designed for political and economic agendas		
Buildings	**Norman Foster's claims**	**Critics' Opinions**
Hongkong and Shanghai Bank Headquarters, China, 1979–1986	The building is located in the country that was most obviously announced as a tiger economy." (Partners, 2023). As a declaration of economic power in East Asia. Therefore, "the trusses of the building simulate Sylvester Stallone's rippling pectorals." (Abel, 2007)	"Foster focused on the impact of the building form rather than how it worked." (Abel, 2007)
		"In this building, structural efficiency is used for merely utilitarian purposes without aesthetics." (Jencks, 2013)

Discussion

Above analysis shows that Fosters architecture, as shown in the case studies, does not respect the context but is focused on technology even at the expense of the contexts in which they exist. While the buildings are eye catching and attractive, they fall short of dealing with the central issues of architecture.

Indeed, from another perspective, according to the Foster and Partner website, Foster's architectural designs have consistently emphasized sustainability. In order to continue leading the sustainable architecture, Foster takes the environment into full consideration, from the embodied energy in composites to life-cycle energy efficiency. Throughout numerous of his designs, Foster is a pioneer in the field of renewable energy, which have demonstrated substantial drops in carbon emissions and pollutants. Collaborating with industry, Foster has offered major advancements in solar energy harvesting panel systems and wind generators with unprecedented efficiency (Noble 2003). That refers to "high-tech architecture that focuses on the Modern Movement idea of the "Zeitgeist," where the architecture should express "the spirit of our age" which is technology" (Jencks, 2013). Moreover, "Foster defends the use of high-quality materials, claiming that the longer the building lasts, the greater the investment in its embodied energy will be"(David, 2007).

Conclusions

Norman Foster's architecture is described by the limitless application of new technologies in the building construction, and their technological tools, for example, solar cells, is a type of contemporary decoration. Norman Foster wants to integrate technology with architecture. This strengthens the effect of his architecture regarding factors both utilitarian and aesthetic. Thus, the "intelligent building concept" emerges. Wherein the design of construction and installations is a complete system (Sezer, 2009). That is obvious in many of his projects, such as the Commerzbank, Commerzbank that is the first modern skyscraper that uses natural ventilation and lighting with standards that exceed even Germany's regulations (mlj, 2022). And the newly constructed Greater London Authority (GLA) headquarter, which is a symbol of green credentials (Partners, 2023).

However, it is evident that this advanced architectural technology in Foster architecture overshadowed important aspects of architecture, which are, as mentioned above, the respect of the architectural context, the respect of the location and urban fabric, and the artistic and aesthetic values in architecture., it is evident that this advanced architectural technology in Foster architecture overshadowed important aspects of architecture, which are, as mentioned above, the respect of the architectural context, the respect of the location and urban fabric, and the artistic and aesthetic values in architecture. After studying some of his projects, it becomes clear that Foster's architecture glorifies the zeitgeist idea of technology, by contrast, it ignores the location of the building, Foster's architecture integrates the building and environment, conversely it separates the building from its urban fabric, some of Foster's architecture serves economic or political agendas, rather than serve the public interests, Foster's architecture imposes the technology and industrial materials to the building, ignoring the cultural and historical context for the city, Foster's architecture respects building users and provides all comforts to them, by contrast it is not interact with the people out of the building, Foster's architecture has poor artistic values, and also in Foster's architecture a great efforts are made for the form, and little efforts for the function.

Accordingly, this paper concludes that several of Norman Foster's works do not respect the context, historically, culturally, and socially. In fact, they do not respect the location and urban fabric of these buildings, and there is a lack in artistic and aesthetic values in his architecture.

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