Computers in architecture

Design, Architecture

Supervisor] Computers in architecture Introduction: The past few years has seen an increase in the use of digital tools in almost every field and line of work. Architecture is no different from any of these fields. Digital technology has greatly aided architectures in modeling and easily creating prototypes that require little or no physical resources to be used. Initially architects used digital and technological tools as aid to their work. That perception significantly changed in the past decade or so. Architects turned to computers to obtain architectural designs that were completely dependent on digital technology(Bermudez).

One such architect who turned to the use of digital technology for his architectural designs was Thom Mayne. Thom Mayne is a very famous name in the architectural industry and is particularly famous for designing buildings such as University of Toronto Graduate House, Morse Courthouse and San Francisco Federal Building (UCLA). This paper would look at the new building of Cooper Union designed by Thom Mayne as examples to show how technology facilitates creativity within the architectural design of a building(UCLA).

Creativity and technology:

Innovation in design:

The building provides V-shaped columns that are aligned with the sidewalk that provide a support to the entire building. Moreover, the vacant spaces within these columns make perfect spot for students to hang out or enjoy with their friends and interact with people passing by the building. The lobby that one finds himself or herself upon entrance is completely made of glass(Ouroussoff). The idea behind the use of such columns is to allow

students to expose themselves to the urban lifestyle that the city of New York has to offer. In addition the transparent lobby provides the architect's perspective on truth and how it must be shared with everyone(Ouroussoff).

Location of the building (Archdaily)

Exterior:

One of the greatest examples that one can see in Thom Mayne's works regarding the use of technology to enable creativity is The Cooper Union. The building in itself represents the past stories and futuristic development of the city of New York that has lost much and is striving to build a bright future. Although the building might seem crude and at times the crude aspects are never smoothed over(Ouroussoff). However this crudeness amongst his buildings is what makes Mayne's work unique from the rest. Moreover, the curve integrated within the building make the technological aspects of the building prominent. The curve basically softens the view for those entering the building into the transparent lobby(Ouroussoff).

It is quite evident that the overall design of the building's curve was created using the architectural software 3ds max. The graphic representation of the building's curve provided through the software enabled the architect to make changes within the design of the curve and monitor the effect of those changes on the overall design of the building(Ouroussoff).

The curve within the design of the building is basically the original representation of the design that was viewed in the model shown by the software. The model shown on the software basically aided the architect in determining the exact shape of the curve and how the curve is perceived by those who view the building(Ouroussoff).

Interior:

The most prominent part of the building’s interior is the staircase that is 20 feet wide and moves in a manner towards the top of the building. As the steps keep moving up vertically towards the roof top the width of the staircase keeps getting narrower and narrower. This feature of the staircase provides the perception that the staircase which an individual is climbing is quite long whereas it is just the design that provides this perception. Moreover the glass window at the top of these stairs allows the light to illuminate the entire stairwell and the lobby at the bottom of these strengths. This in turn also illuminates the lobby that has been completely covered with glass(Ouroussoff).

As mentioned above the lobby made of glass panels undertakes provision of a view from the top levels showing a great view of the world outside the building and shows every activity that is taking place within the building. These panels not only add to the beauty of the building but also make an excellent use of natural light within the building’s lobby(Ouroussoff).

The design of the staircase clearly shows that it was completed using a digital design tool that made it seem attractive and practical at the same time. Moreover the glass lobby provided was simulated using simulation software to observe the effect it had on the overall entrance of the building(Ouroussoff).

Horizontal cross section of the building (Archdaily)

Practicality of the building:

In a number of occasions there were some architectural aspects of the

building that did not seem practical and had to be redesigned. Computer aided design software helped the architect of the building compromise on the design while ensuring that practicality of the structure was also maintained(The Economist).

Conclusion:

Before the invention of super powered computers and simulation and design programs architects had to rely on their skills and on their knowledge of construction to create large structures that were to last for years to come. The creation of commercial computers changed this perception. Architects started using computers as machines to aid them in the complex calculations that were needed to follow for designing projects. The further development of simulation software further saw the increase in usage and computers didn’t just become an architect’s aid but became their necessity. Thom Mayne one of the greatest and most creative architects of modern times made use of technological tools in the development of his building for The Cooper Union University. The University building has a number of internal and external features that represent different perspectives that bring creativeness within the tall structure. These creative features have been made possible due to the technological tools that helped the architect during the design phase. The simulation allowed the architect to make changes to the design without actually building a prototype and obtaining the results of those changes almost immediately.

Works Cited

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