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INNOVATIONS SEEN IN ARCHITECTURE

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Abstract:

Innovations are seen in every filed but it acts as a complementary unit in architecture. In this paper we see the significant role innovation has played with architecture and also the trend setting it has created. The necessity for innovation has also been discussed. It showcases the trajectory of ideas and thoughts through centuries to the next generation.

Keywords:- **Innovation, Architecture, technology, Software tools, ideas**

INTRODUCTION

Innovation is what our mind makes up that could create a huge impact on several lives. In the realm of architecture, without innovation and new ideas one cannot survive. To me, being innovative helps me stand out yet blend with others. Innovation is not just about bringing up new mind blowing ideas. It is also about how one implements it in the current cut-throat world and adapts to various scenarios. Innovation without technology is impossible. With the help of technology all the crazy ideas which we doubt could be practical can be visually made possible. It makes the job of an architect more comfortable and reduces the amount of time consumed. It makes an architect more efficient and durable. Technology has provided one with various software tools. At present architects from all over the world depend on these tools to make their work trouble-free and simple. 'Sketch Up' is one such software that allows the architect to design and sketch in 3D which generally takes hours and days when done by hand. Another software that helps with sketches is 'Revit'. Its main advantage over 'Sketch Up' is that, it modifies the view, plan and elevation according to the given changes. As architects it is our job to make the client walk through their design. This feature is made possible through the software 'V-Ray'. It basically aims at providing realistic visual of the design taking into account of the texture, light, shadow and other conditions. Being an architect also includes mapping sites both small and large which takes away a lot of valuable time. The software 'Powermapper' allows the architect to map sites in a few minutes. It also as the feature of sharing too. Every design and plan has to be processed before finalizing it. 'Photoshop' acts as a medium to scan and fix ones work. Be it for a section, plan or an elevation it is important to know 'Photoshop'. 'Maya' is an animation software that is perfect for architectural rendering. It adds depth and brings life to the lifeless. One other software that aims in drafting is 'AutoCAD Architecture'. It emphasis the design, its accuracy and is highly efficient for detailed outputs. 'Rhino 3D' is a versatile software that has over 2000 enhancements and can illustrate 1D, 2D and intricate 3D forms too. A similar software is 'Archicad'. It also has the ability to produce both 2D and 3D geometry. It generates the best photo realistic videos and pictures. 'Lumion 3D' is a rendering software with a little bit of social media. One has to create the 3D model separately and render it using this software. It adds vegetation, people and trees thus bringing life to the model.

LITERARY SURVEY

[1]Architectural innovation includes subtle changes that have significant implications. There is a fine line between refining and improving according to architecture. Adding minor changes to existing architecture will capitalize the potential of the said architecture. It needs skills and ingenuity and does not create any significant consequences. While on the other hand using engineering and scientific techniques open a whole set of questions, problem solving techniques, applications and create great consequences to the established firm.[2]Innovation has always been a complementary part of architecture. This has been seen through ages. Renaissance – It was a period of change. Change in political, religious, economic, social and structural all across Europe. It marked the beginning of the modern world and put a stop to tradition medieval times. During this period, art was not seen for its aesthetic value but was rather seen as a medium to display the achievements, powers, social status, and civic pride. Architecture and its great buildings were seen as power to convince people of the greatness of the church. Patron was in control then. They spent lavishly on a grand scale to bring their visual ideas to life. During the fifteenth century the patron were central to all projects. They hired workforce, contractors, building materials and experts. Moreover this was the period of stylistic change as patron from Florence and Venice took over to bring their visual expression to life. It was the time when Gothic arch was rejected in favor of classic roman arches. [3]During the past few years designers used decorations, theory, and intuition as mode of designs. Though these modes are embraced by the designers, at present they strive to push the boundaries far beyond the limited aim of constraints by creating a balance with imagination. This evolution has been mainly due to the compelling economical, social and environmental reasons. For the designs to be innovative one must do vigorous research as it yields fundamental breakthroughs. Design practice is tough, especially change. Thus the most important step during the course is

'action'. Breaking down the challenges into smaller pieces will help us find many possibilities which we might have not thought of. The evolution will create only a small change, but that change could be serious and powerful. [4]Now a days the products produced are very modern. This statement is due to the fact that industries and companies go for structures with higher specialization in the competition of the market. But firms have turned this the other way round by producing products of less modularity as in with more tradition and more efficient and long term dimensions. Thus innovation alone is not important in a field like architecture. Innovation with a tinge of authenticity is important too. [5]Emerging aspect of architecture is platforms. They act as building blocks and help in rewriting industrial innovation. Here it is defined that platforms are constraining linkages that support variety and evolution of a system. Inside firms, across supply chains, or industries these platforms have created a huge impact. Collaboration of platform designs also provides strategically placed landscape and also increases its potential. [6]Over the last few years internet has evolved into a whole new dimension thus providing insurmountable number or opportunities to its users. It has made the task of organizing, interaction with customers, making of the product, productivity, and opportunities very near. It has helped the system architects to create designs that prioritize economic goals. This poses challenges as well as empowerment to both law and public policies. The society contains lot of constraints, some include – prices, laws, norms, natural and technical environment. By internet architecture has introduced designs governing modularity, layering. It has also helped in understanding the components potential and its applications. [7]Currently the fields of architecture and engineering undergo rapid changes due to the ever growing technologies. Especially BIM which is building information modeling, and sustainability. While some architects have shifted or adapted to this fast paced world the others have not. It seen that there is a clash when

the architecture pursuing students enter into this world. Thus at an elementary level itself the gap between academics and practice must be closed. [8]Regarding sustainability, there no such thing as sustainable architecture. It's just architecture. A building should be sustainable and self sufficient. We see a wide range of buildings with huge technological improvements but each portraying a 'green' design in its own way. The success of more sustainable buildings can be achieved by debating over a range of possibilities, as environmental concerns are relative to time and area. A logical solution may be contradictory to another problem but it does not make it any less sustainable.[9]The use of 3D representations in building projects of Frank Gehry produced many innovations. Some being, new technique for modeling smoke evacuation, water proof shingling system, soundproof plaster system, etc. The untraditional way of Gehry to use 3D technology was frowned upon by many architects of that period but their way of 3D representation improved the communication among them also coordinated their work. Making the forms digitalized will make way for innovation at the boundaries itself. The output through such innovations is not linear and bland but rather contains diverse patterns painted with vibrant colors and technologies. [10]Smart cities represent innovation seen in the overall aspect of a city. It comprises of management, technology and policies and various strategies undertaken to prevent various risks. It is a common belief that a city far more advanced in technology is a smart city. This a misconception. Advanced technologies lead to complexity. Thus it important to think beyond about management and policies. Along with this the components of the city must also be considered. The uniqueness interconnects these technologies management and policies.

FINDINGS

Innovation is born out of necessity. This is not case in the field of architecture. It has been seen that innovation as acted as an stepping stone in the realm of architecture. It has proved one significant point throughout, which is – a course of action is always required for a change. It has produced many merits such as aesthetic appeal, reduction in costs, sustainability of the structure, improvement in structural designing and uplift of architecture and architects too. Internet and different software tools are the future way of designing. The 3D representation of the building is fast and helps in collaborations and gives better understanding to clients. Moreover it can be understood that technology is not sufficient for innovation. A structure or construction must have sustainability, management, and ability to adapt to economical and environmental constraints to be innovative. It can also be noted that innovation is not just about creating something new; it can also be something small as renovating a area to bring out its potential and beauty.

RECOMMENDATIONS AND CONCLUSION

Students must be motivated to develop core knowledge and their applications. From the study it can seen that technology and internet form the main stream of architecture. So from the elementary level itself students must have an understanding of the various tools available and their applications too. This promotes efficient thinkers and future innovators. One must not destroy something to create something. In architecture old must be rejuvenated while the new must be reminiscence of the past. There is a story behind every innovation and this story must be expressed through architecture. Innovation as no limit. For now software's may be the future but a few years later it might be something new. Be ready to change, innovate and adapt.

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