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Sustainability and the Growth of Architecture

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Abstract:

At the end of this paper, one would be able to understand how innovation is a key factor to surviving in the field of architecture. This paper gives knowledge about the various technology in use. It also talks about how sustainability is the backbone of architecture. To understand the relevance of these innovations, an approach aimed at identifying the possible impact on design and construction is required.

Keywords :- **Sustainability, Technology, dynamic field, prototypes, creativity**

INTRODUCTION

Innovation is a very common word, but often overusedand misinterpreted . It is now seen as more of anecessity rather than as an idea. It's an advancementthat people find helpful as well as beautiful at the sametime. In order to achieve the goal of innovationarchitects must be able to cooperate within their style,the feedbacks of their customers. If an architect isadamant to change the conventional method ofconstruction, it could welcome his/her extinction in thefield. Innovation is often confused with contemporaryin fact they're exactly the opposite. In this mad ratrace, innovation is the only way by which you canreach the finish line and even go a bit further. Architecture isone of the most innovative fields out there, and the scope for progress is wide ranging. With the help of technology one is able to venture out in the world of design and creativity. For example, 3D representation of prototypes has helped immensely in eliminating errors. AutoCAD has also helped this field to prosper well. Thus we are able to establish thattechnology and innovation works hand in hand to uplift architecture as a whole.

LITERARY SURVEY

Innovation is the organised way of change that may solve the fundamental problems in the fields of architecture and creativity. Innovation is the essence of positive progress. With the evolution of more and more ideas, quality of work becomes the key factor to success. Innovations should emerge with a promising scope for investment. New ideas should undergo thorough evaluation. A concept should be able to develop from its initial stage in such a way that it produces an output. (2)Innovation in the public sector is the need of the hour. New concepts need to be implemented in order to create a better response from society. The public themselves have to participate and become entrepreneurs. There are certain barriers to innovation. Some include lack of proper leadership, insufficient data, limited knowledge etc. In order to overcome these barriers there has to be a policy framework. (3) Architectural innovations help in rearranging a certain product in such a way that its core element or design remains the same but at the same its efficiency is improved. Architectural knowledge helps in deciding which arrangement of elements works better. Thus, architectural knowledge and architectural innovation go hand in hand. Architects are also able to experience the changes in performances each time. (4) Technology management researches on the complicated connections between innovations in technology and competition of the firm. The overall structure of a product is one of the main aspects that determines the competitor level of the firms in a particular industry. This is also one of the main reasons why people take a great interest on this

particular research. Many of these studies takes on an industry's point of view and it is related to the firms defending themselves from technological attacks from the outside world. (5) The difference between architectural design and scientific method is that the former deals with how it is done while the latter is about how things are. Innovation and creativity takes new ideas and methods in designing. Innovation comes in the choice of building materials as well. There's a wide variety of shape, design, texture to choose from thus resulting in various new ideas.Some examples of newly innovated materials inclube glass fibre, carbon fibre etc. Architecture is a dynamic field and hence new concepts and suggestions are always welcome. (6) Recently architecture, engineering and construction industry is facing challenges due to the aftermath difficulties, resulting in technological and institutional modifications. Such industries are adopting new and fast growing concepts such as Building Information Modelling (BIM), sustainability, collaboration and related technologies. Absence of sufficiently trained BIM personnel is a significant difficulty obstructing the use and adoption of the technology in the industry. (7) 3-D representations of models are able to show diverse layers of the project. This innovation was able to create a pathway for more and more innovations. When construction occurs based on 2-D models, there are chances of error. Thus, the innovative idea of 3D representation has eliminated the possibility of errors. With the help of 3D representation architects have been able to adopt new construction practices. There has been a number of 3D softwares that have been adopted in the past few years and they have offered a lot of benefits. (8) Architecture should be promoted from both technological as well as business aspects. In order to understands its reliability, more and more prototypes should be made. Prototypes help in testing the feasibility of the main project. The internet has played a vital role in the progress of architecture. VNET Control architecture comprises of PIPs, VNPs, VNOs, SPs. Every segment manages its resources it sees fit. (9) Sustainable architecture is as important as innovative architecture. To incorporate sustainability within architecture new and diverse

forms of technologies need to be used. Sustainable architecture is now seen as more of necessary concept. Design and development work in different paths to implement their environmental visions. In the case of building design, energy efficiency should be ranked first. The emphasis on energy efficiency has led to more and more innovations such as translucent insulation, double skin walls etc. (10) Component is a definite product that personifies an important design concept. The development of a successful knowledge requires two types of knowledge. First, it requires knowledge and understanding about each o the important design concept and the way in which the concepts are applied in a particular concept. Second, it requires knowledge regarding architecture or about the ways in which the parts are brought and connected together into a logical whole. The difference between both the knowledges are the source of insight into the path in which innovations differ from each other.

FINDINGS
After reading this paper, one can understand that sustainability is a vital requirement for the growth of architecture. Often creativity is confused with innovation. This misconception has caused the downfall of many architectural firms and companies. Even though innovation is important, energy efficiency is equally necessary. Creating prototypes helps in understanding the negative or positive outcomes and thus saves time and resources. Technology has helped to not only widen our knowledge about design but also about building materials. 3D representation with the help of advanced softwares also brings out extraordinary outcomes.

RECOMMENDATIONS AND CONCLUSION
This paper is a must read for every aspiring architect who believes that innovation is the pathway to success. This paper also explores the various possibilities. Sustainability works well in this fast growing field. The given information helps any reader to understand that innovation doesn't mean changing the entire system altogether. It simply means adding certain elements which are feasible as well as aesthetically pleasing. Architecture is one of the

most unique fields that helps to work in peripheral fields as well.

REFERENCES

1) Dundon, E. (2002). The seeds of innovation.American Management Association.

2)Bason, C., Hollanders, H., Hidalgo, C., Kattel, R., Korella, G., Leitner, C., ...&Oravec, J. (2013). Powering European public sector innovation: Towards a new architecture. Report of the expert group on public sector innovation, European Comission.

3) Baldwin, C. Y., & Clark, K. B. (2006). Architectural innovation and dynamic competition: The smaller "footprint" strategy. Harvard Business School, Boston, MA.

4)Fixson, S. K., & Park, J. K. (2008). The power of integrality: Linkages between product architecture, innovation, and industry structure. Research Policy, 37(8), 1296-1316.

5) Henderson, R. M., & Clark, K. B. (1990). Architectural innovation: The reconfiguration of existing product technologies and the failure of established firms. Administrative science quarterly, 9-30.

6) Becerik-Gerber, B., Gerber, D. J., & Ku, K. (2011). The pace of technological innovation in architecture, engineering, and construction education: integrating recent trends into the curricula. Journal of Information Technology in Construction (ITcon), 16(24), 411-432.

7) Boland Jr, R. J., Lyytinen, K., &Yoo, Y. (2007). Wakes of innovation in project networks: The case of digital 3-D representations in architecture, engineering, and construction.Organization science, 18(4), 631-647.

8) Schaffrath, G., Werle, C., Papadimitriou, P., Feldmann, A., Bless, R., Greenhalgh, A., ...&Mathy, L. (2009, August). Network virtualization architecture: Proposal and initial prototype. In Proceedings of the 1st ACM workshop on Virtualized infrastructure systems and architectures (pp. 63-72).ACM.

9) Guy, S., & Farmer, G. (2001). Reinterpreting sustainable architecture: the place of technology.Journal of Architectural Education, 54(3), 140-148.

10) Henderson, R. M., & Clark, K. B. (1990). Architectural innovation: The reconfiguration of existing product technologies and the failure of established firms. Administrative science quarterly, 9-30.

11) Dinesh, P., &Karthikeyan, J. (2016). The study on effectiveness of ict tools among students in varied schools to improve their listening skills. *Man in India, 96*(9), 2729-2734.

12) Karthikeyan, J., & Peng, S. (2015). Role of hanban in taking china closer to the world-an educationalist understanding of its function in india. *International Journal of Applied Business and Economic Research, 13*(2), 519-525.

13) Karthikeyan, J., &Rajasekaran, W. C. Role of English teachers in enhancing research thoughts among the Engineering students in the ESL classroom. *Trends and Innovation in Language Teaching*, 93.