

Modelling an Optimized Tool (BIM) for a Live Construction Project

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Abstract— The reception of BIM has been moderate and numerous boundaries preventing across the board appropriation of this innovation have been uncovered. There are however no single obstruction that could be tackled exclusively with a specific end goal to empower more broad BIM appropriation. These boundaries are obstructing a wide range of parts of successful selection of BIM. BIM is an apparatus to enhance forms keeping in mind the end goal to achieve certain objectives, not an objective in claim right. In this research work, I examine how BIM has been adopted in a live construction project and how it is advantageous over general methods. The research aims to develop the understanding of the barriers hindering BIM adoption in order to make it more accessible for the AEC-industry.

Key words: B.I.M., Construction, Designing, A.E.C., Live Project, Analysis, Management

I. INTRODUCTION

The real estate and construction industry is one of the world's bigger ventures yet additionally a standout amongst the most divided. The trademark perspective of the business is of a united multidisciplinary gather in a one of a kind venture confronting incredible planning issues. Advances in data and correspondence innovation (ICT) have been advanced as an apparatus to manage these coordination issues keeping in mind the end goal to enhance the ventures generally low efficiency.

Building Information Modeling (BIM) is one of the critical mechanical progressions that design, building and development (An/E/C) industry has seen since 10 years. Be that as it may, it is imperative to comprehend that BIM is much in excess of a suite of programming; it is a procedure of adjusting the innovation to individuals, process, approach and administration.

For the situation ponder, a progression of building information models will be made in the venture, we will mimic the green buildings and break down them. The supportable outline strategies in BIM will be utilized to break down the effects of green buildings, including all parts of lighting, vitality effectiveness, maintainability of materials and other building execution. It is basic to consolidate the outlines and the developments of green innovation, in this manner making a plan more sensible and streamlined, lastly accomplishing the agreement with green buildings. This exploration venture has been intended to re-contextualization of a current procedure of Building information modeling (applying a method in another specific circumstance, testing a model in another setting, demonstrating the pertinence of a model to another circumstance), indicating it works - or that it doesn't - and why and Corroboration and elaboration of a current model (e.g. assessing the impacts of a difference in condition, test appraisal of one part of a model) utilizing BIM programming like Revit, Primavera, Z W CAD, Bentley RCDC and so forth. Reenactments must be directed in research center by brushing BIM with other existing green

plan programming to advance new outline process and green building assessment guidelines.

Seo and Kim (2016) As of late, Building Information Modeling (BIM) has developed as an intriguing issue in the development business. Structural designing required a considerable measure of time and budgetary assets contrasted with compositional building. As BIM was totally connected to structural building, it was conceivable to deal with the calendar and cost previously utilizing 3D and encouraged viable correspondence between different partners. For the use of BIM in structural designing, the creator studied the mindfulness, usage and viability of BIM on different structural building organizations with a specific end goal to infer vital upgrades and broke down new business zones for BIM application. The consequences of the investigation was utilized as a kind of perspective being developed for SOC structural building BIM requesting guide and related standard.

Prathamesh P. Gawade (2016) there are different downsides in ordinary strategy utilized for arranging, booking and checking ventures in Architecture, Engineering, and Construction (AEC) industry which neglects to give an unmistakable perspective of the on-going real work at the undertaking site. Building Information Modeling (BIM) is Single document idea working together different database of the venture at one stage. It is an information storehouse for building plan, development and upkeep information consolidated in one advantageous model to impart to every one of the partners. 3D representations enable clients to see memorable safeguarding and site setting as for the new venture. This paper centers the point of view of an arranging engineer concerning Conventional technique and B I M and gives a strategy to set up a 4D recreated model of a Gr. (Stilt) + sixteenth Floor private building taking fourth measurement as time.

Wojciech (2017) the development business in its heterogeneity has a requirement for better correspondence and process coordination among partners. This absence of coordination was because of hindrances in interoperability in vital, theoretical and innovative viewpoints. Interoperability was the capacity for specialists to impart and trade information, information and learning. The creator recommended that Building Information Modeling (BIM) would assume a crucial part being developed of interoperability in the Architecture, Engineering and Construction (AEC) industry. Considering that boundaries in interoperability can cause challenges in the AEC business, (for example, plan covering, coordination issues and numerous sorts of money related misfortune), the requirement for a particular strategy and instruments to survey the level of development in this field was seen. The creator gave a way to deal with survey interoperability in the AEC space. It depended on the worries proposed by the fundamental interoperability systems, for example, the European Interoperability Framework (EIF). The

interoperability appraisal is then organized utilizing the esteem levels (correspondence, coordination and collaboration) proposed by Grilo and Jardim-Goncalves [1] as development levels. The AEC traits were then designed in a multi-criteria basic leadership structure, AHP (Analytic Hierarchy Process), from which pros gave their conclusion through a survey to decide the apparent level of interoperability. The appraisal and analysis phase of the examination prompted the conclusion that information interoperability was as yet the greatest drawback, so another strategy to evaluate interoperability amongst programming and configurations was depicted as a check test, featuring the principle hindrances in BIM.

Following steps are followed in a sequence to complete the research study is as follows:

- 1) First step is to investigate the site, measurements and clearance should be done.
- 2) Second step is to draw a planning of the area considering vastu shastra orientation and government norms so that it can easily be accepted for building permission using CAD (Autocad)/
- 3) Third step is to export the autocad plan to Revit software for creating a 3-dimensional plan consist of walls, doors, window, elevation, interior and details of the proposed live project.
- 4) After developing interior, exterior etc in revit now we need to export the drawing to Staad pro for load analysis as per Indian Standards and designing as per I.S. 456:2000.
- 5) Now we need structural detailing drawing for which we will export staad file to RCDC in which we will get the working structural detailing drawings of columns, beams, slab, stairs.
- 6) Further we will export the data to M.S. excel for quantity surveying as per B.O.Q. provided.
- 7) Lastly we will schedule the running project in primavera to decrease the risk of late finish and to justify the requirement of resource allocation.

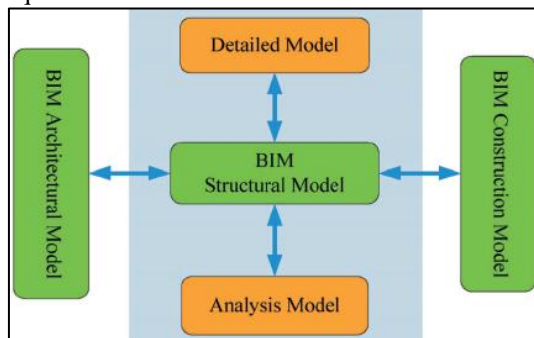


Fig. 1: BIM Implementation

II. DESIGNING WITH OBJECTS

The understanding of obligations and expectations in the arrangement of work, the group started deal with the outline and particular process. As for the plan, all individuals from the group displayed the task in 3D. Both nonspecific and producer objects were utilized on the undertaking. Cases of where nonspecific items were utilized included building administrations segments where the general framework was being indicated by execution. For instance, for the ventilation

framework, the general framework execution was firmly indicated – yet simply the kind of item that should serve these frameworks was determined. As the item determination was left to the Contractor, nonspecific protests, for example, the divider mounted hub fan were utilized for the ventilation framework.

Having institutionalized BIM protests as far as naming tradition, grouping and the property sets inside the articles were viewed as fundamental to the undertaking group and the temporary worker.

A. Well Structured Specifications

The greater part of the fundamental controls utilized Created for the venture determinations. Having a steady determination structure and configuration over the greater part of the controls made consistency for the group, and furthermore for the Contractor who at that point utilizes these details.

The particulars were a blend of execution and full details. For the engineering, a case of an execution particular was the cycle shield, where the Contractor had the duty of submitting reasonable proposition in view of a toughness prerequisite for given years and proper comprehensive outline contemplations. A case of a full particular was the secluded roof framework, where every item determined was from a particular producer's item run

B. Co-Ordinating Model with Specification

Obviously on BIM ventures, the plan models were composed at customary interims to stay away from conflicts between the design and the building. What's more, the models and the determinations were likewise organized.

In this examination we connected every last errand of the work in various stations precisely like arranging, planning, specifying, planning for a legitimate way that working with this device turns out to be extremely useful in executing the venture.

The execution of BIM can give incredible advantages, this change in any case; require a significant difference in the customary methods for working. The fundamental BIM idea of a solitary incorporated model for the entire venture life-cycle should be created in a cooperative setting where various task members can contribute. At the same time proficient multidisciplinary venture bunches bolstered by BIM require change in the parts of the customers, draftsmen and temporary workers, and new legally binding connections and a redesigned cooperative process must be made.

III. CONCLUSION

In this research work following conclusion can be drawn as follow:

Results shows that BIM tool can make easy flow of working plans from one tool to another making project editing easy and reliable.

It can be concluded that BIM helps in making project in amange and proper sequence making project management easy and accurate.

It has been contended that the part who should drive the advancement towards BIM is open customers. Task proprietors are for the most part the on-screen character in the

venture in the best position to put weight on other undertaking members to take after the new procedures required. By and large, open customers additionally have both a long haul point of view in their activities and additionally numerous continuous ventures. This empowers them to profit by encounters in prior tasks. It can likewise be contended that these open on-screen characters have a duty to make their encounters open, for the advantage of the entire business, as higher profitability in the AEC-business has financial advantages.

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