

Comprehensive Application Analysis of BIM Technology in the Process of Construction Engineering

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Abstract:Comprehensive application analysis of BIM technology in the process of construction engineering is the focus of this manuscript. The building parameter model based on BIM technology can dynamically simulate and demonstrate the construction site, and managers can intuitively observe the changes of various details and parameters during the general dynamic model demonstration process. Hence, the proper usage will be essential. Entering the information and Internet era, the application of BIM technology in project construction quality will continue to deepen with the development of various high-tech, and then, the combination is also considered. Through the discussion, we find the suitable integration methods.

Keywords: Construction engineering; BIM technology; application analysis ; general process

1. INTRODUCTION

Building information technology has the advantages of the visualization, integration, and also parameterization, and has gradually replaced traditional CAD technology because it can be applied in different stages of prefabricated projects. In the assembled building design, prefabrication and also assembly construction, the parameters need to be coordinated and the construction plan needs to be optimized by adjusting the BIM model. Therefore, it is said that the characteristics of assembly building and BIM technology are very suitable, so the active application of building information modeling technology in modern assembly building.

In order to realize the standardized and orderly management of construction projects, the in-depth optimization design of project construction should be then combined with the application of general BIM technology in engineering. The application of BIM technology in the construction industry reflects the further development of the informatization of production activities in the construction industry through the rational study and application of BIM technology.

Employees can optimize the prefabricated components more efficiently and also scientifically, and improve the quality of prefabricated component construction projects. Such problems can be largely prevented by improving information exchange and sharing in assembly engineering through BIM technology. For example, employees can share basic 3D models of BIM technology in different work departments to further provide developers, builders and also managers with more timely data support. Compared with traditional buildings, prefabricated buildings have more in-depth design links, which play a link between design and component production.

Traditional construction drawings only contain information in the design stage, without the disassembly and specific dimensions of related components, and component factories cannot use other components. To directly guide production, it is necessary to further deepen the design of the construction drawings to meet the requirements of guiding production and on-site construction. Therefore, in the actual construction process, the construction construction machinery must use BIM technology as the core data to establish a 3D model that

repair the basic situation and problems of the construction site, investigate and analyze the different construction process and link of possible problems and factors, according to the model and specific parameters According to the model and specific parameters, find out the error between the design and actual construction, and in the figure 1, BIM parts are demonstrated.



Figure. 1 The BIM Parts Demonstration

2. THE PROPOSED METHODOLOGY

2.1 The BIM Technology Principles

BIM technology has been well widely used in our country's construction industry, especially in many core aspects such as structure, architecture, hydropower, and also comprehensive architecture design. The main features of the BIM technology, which is also the general most important features of the BIM technology include visualization, coordination, simulation, optimization, and mapability.

The most important features of the BIM technology include visualization, coordination, simulation, optimization, and also mapability. The BIM applications can be studied from the list of the core aspects.

- (1) Based on the BIM database, engineering modeling, project progress analysis, engineering material calculation and also engineering project cost management can be carried out at any time.
- (2) Convert the general previous design drawings from a two-dimensional information model to a core three-dimensional visualization model, providing designers with convenient working conditions, allowing them to find design defects in a short time, and then take effective measures to improve them.
- (3) During the construction process, it is then possible to fully analyze the engineering geological conditions in different

periods and the causes of their formation, and develop unique architectural solutions for various engineering and geological conditions, which can then greatly improve the core work efficiency and also design quality of prefabricated buildings, which is very important. We can use the BIM technology to analyze relevant problems, accident causes and possible negative impacts, for the development of targeted preventive control plans that can be implemented more effectively which will help reduce the possibility of various security threats and their possible negative impacts.

Using BIM technology in the construction process can then directly control the construction of the main nodes of the project through the three-dimensional model, improve the rationality and efficiency of on-site construction equipment and technology use, and reduce the risk of errors.

2.2 The BIM Technology in the Process of Construction Engineering

The building parameter model based on BIM technology can dynamically simulate and demonstrate the construction site, and managers can intuitively observe the changes of various details and parameters during the general dynamic model demonstration process. Construction safety construction management strategy not only pays attention to the general construction of the safety management system, but also pays attention to safety education, which can not only provide the effective basis for construction safety management, but also improve the safety awareness of construction personnel.

Then, we provide listed aspects.

(1) The periodicity of engineering projects and the complexity of the construction environment lead to many variable factors. Operators often change their working environments, and the mobility of the construction projects and construction teams requires project organization and management to be highly adaptable and flexible for safe production.

(2) At present, cost overruns in construction are mostly caused by inadequate management of other links, such as increased costs due to safety accidents.

(3) "Green building" is a building management concept based on social harmony and also resource conservation. The construction unit should establish the awareness of green environmental protection, and then combine modern advanced technical means, summarize and also integrate the resource requirements of each stage of project construction, closely focus on the principle of sustainable resource utilization, and promote the gradual improvement of green management of the project construction projects.

We compare and analyze the planned construction period in the BIM model with the actual construction progress on site, and adjust the construction plan in time for any deviations. From the perspective of the management body, the traditional construction safety management by the special safety management personnel, there are great limitations, weakening as the main position of construction workers in construction safety management is weakened. To create a new paradigm of construction safety management with full participation.

To create a new paradigm of construction safety management with full participation, strengthen the general autonomous management role of construction workers in the construction safety management. To sum up, BIM technology has been widely promoted and applied in green building construction management, which solves many problems in green building

construction management and makes the implementation of green technology more feasible.

3. CONCLUSIONS

Comprehensive application analysis of BIM technology in the process of the construction engineering is the focus of this manuscript. The data information platform built based on BIM technology can not only model according to project parameters, but also classify and archive various information materials in the construction process, hence, this paper gives the novel ideas on the applications of the BIM technology that will help to construct the efficient scenarios.

4. REFERENCES

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