Discussion on Application of Road Project Cost Management Based on Bim Vision

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Abstract: As an effective technical means, BIM technology can not only realize intelligent management in engineering projects, but also can reasonably avoid the problems and deficiencies of traditional project management, which is an important technical means in the project management process in the future. The specific application of technology in the management of modern construction engineering projects, strengthening the application analysis of BIM technology from different perspectives such as project quality, schedule and cost, with the support of three-dimensional models and information technology means, it can be carried out for the management of modern construction engineering projects. Laying the foundation.

1. Introduction

The BIM technology, usually, uses the basic building information as a template, and then uses BIM to carry out a substantial analysis of the information data, thereby formulating a more complete project information and controlling its functions. Then according to the relevant information platform, Put the data information on the platform for sharing, and clarify the basic concepts of the project in detail, and then carry out relevant reference analysis on the cycle of the entire building. In the actual stage of the project, the standards in the BIM system need to be The content can be updated, extracted, and inserted, so that the judgment of the information can be more accurate and shared. According to its own responsibility and the validity of the concept, it can refer to and judge the cycle of the entire building and all the content.

2. Application of Bim Technology in Engineering Cost Management

2.1 Application of Bim Technology in the Database

At this stage, from the perspective of China's building construction, the parameters and data of building construction can be comprehensively sorted after the application of BIM technology, and the more The basic data information is collected to form a more complete BIM database. In the same way as the traditional database establishment method, this database establishment method can effectively expand the scope of data collection information, and the accuracy of data collection is also Effective improvement. However, the data information in the BIM database has a certain dynamic nature. Therefore, if there is an unexpected situation during the construction of the building, the relevant management personnel need to make appropriate and reasonable data information in the BIM database. Adjustment.

2.2 The Application of Bim Technology in the Project Plan

During the construction of the building, the relevant technical construction personnel need to understand the BIM technology in detail. With the help of the BIM technology, the time difference between the various projects during the construction process and Comprehensive analysis of engineering differences, so as to formulate a scientific overall construction plan. In addition, related managers of building construction can also use BIM technology to carry out detailed analysis of price factors such as construction material prices in the database, Then, based on the actual price of the market, a building construction plan that meets the needs of the market is formulated. Based on this, during the construction process, by using BIM technology, combined with the situation of building-related prices in the market, a scientific analysis is performed, and at the same time Pay attention to the price situation in the market and formulate a scientific and accurate construction plan. The use of this method can improve the accuracy of the construction cost to a certain extent, and can also accurately control the cost of building construction, thereby improving the economic benefits of the construction unit.

3. Application of Bim Technology in Engineering Cost Management

3.1 Investment Decision Stage

In the investment decision stage, BIM can use the simulation and visibility advantages of BIM technology to effectively analyze engineering projects and provide scientific reference for investment decision. During the investment decision stage, construction enterprises can The computer virtual platform is used to display the three-dimensional simulation effect of construction engineering, and to compare and display with other similar engineering projects simultaneously to provide accurate reference data for the management of its construction cost. During the investment decision-making process, it is also possible to use BIM technology to project Refinement of the quantity, not only the calculation of the entire project engineering budget, but also the calculation of the engineering budget for each stage of the construction project, to provide a certain basis for the cost management of engineering companies.

3.2 Bidding Stage

After the investment decision is completed, it is necessary to enter the bidding stage. Using BIM technology, the cost personnel only need to adjust the calculation rules in BIM software according to the local engineering quantity calculation rules. The system will accurately and quickly calculate the engineering quantity Information. The automatic calculation method based on BIM frees the cost personnel from the tedious calculation of the amount of work, which greatly improves the work efficiency. At the same time, the calculation of the amount of work is free from human error factors, and the list can be compiled quickly and accurately. Control price. According to the BIM model provided by the design unit, the construction or bidding agency can retrieve the quantity information in a short time, and compile an accurate quantity list based on the specific characteristics of the project, effectively avoiding missing items and calculation errors. Create favorable conditions for the successful bidding work. The proposed bidding unit can also correspond to the quantity information and the component space position according to the BIM model in the bidding document, understand the proposed project more comprehensively, and quickly approve the quantity list to obtain more More time to develop a bidding strategy correctly.

3.3 Project Design Stage

The bidding stage is completed, and the engineering cost management in the design stage is mainly based on the depth of the design plan and the completeness of the data. The engineering cost in the design stage accounts for about 70% of the total project, so it must be Strengthen the cost management work in the design phase.

(1) The cost estimate in the design phase. Traditional CAD drawing not only has a large workload, but also compiles with adjustment coefficients in the face of incomplete information and information. Impact. The application of BIM technology can be modified by technicians based on the BIM model to improve the accuracy of the investment budget in the design process.

(2) The budget preparation under BIM technology can more intuitively facilitate the design unit and investors to view the design solution. Relying on the function of BIM self-check, the model reduces the error of the design scheme, thereby effectively reducing the waste of funds due to the mistake of the design drawings, optimizing the design scheme, and increasing the degree of automation of project cost management.

In construction engineering management, you also often encounter difficult situations such as

design changes, and design changes can be described as a stressful and difficult task in the management process. If design changes occur, we can use BIM technology Enter the content that needs to be changed into the relevant model in the software, and obtain the situation that the amount of engineering changes automatically through the change of the model, which avoids many problems. After the design change, actively change the situation and the engineering caused by the change in the amount of engineering The cost situation is communicated with the designer. This will also help us better understand the changes in the design of the entire project and the changes in the cost of the project. After controlling the design changes, it will affect various aspects, and control the cost of the construction project and the project cost. Management to avoid rework.

3.4 Construction Phase

The construction phase is the most important part of project cost management. In the construction cost management of the construction phase, the main purpose is to control the project cost within the rated range of the planned investment. The BIM model can be used to achieve effective construction data. Integration, you can also implement collision detection, timely find possible problems in the project, and have a positive effect on problem solving, avoiding the increase of costs caused by repeated adjustment of the scheme. With the help of the BIM system, you can also calculate and Master, and can take measures to limit the collection according to the actual situation. In the construction of the project, different departments are generally responsible for progress, changes, and budgets. Due to the large number of departments involved, the information and data may lack uniformity. With the help of BIM technology, we can effectively solve the problem of measurement and payment of progress. If engineering changes occur during the construction phase, we can use BIM technology to perform real-time analysis and research to ensure the reasonableness of the changes. At the same time, the collision test It can also effectively avoid the problem of engineering changes.

3.5 Completion Phase

The application of BIM in the decision-making, bidding, design, and implementation stages. The BIM model database is continuously modified and improved. The model's contract, design changes, on-site visas, metering payments, and material management information are continuously entered and updated. Make the BIM model basically consistent with the completed project entity during the settlement phase, then effectively reduce the disputes that may occur between the investor and the construction party during the final settlement stage, so as to achieve rapid settlement and auditing.BIM technology provides data support for project completion settlement and guarantees The smooth implementation of settlement. And the cost personnel used BIM technology to calculate the amount of work when reviewing the project, which effectively improved the accuracy and efficiency of the settlement review work and ensured that the settlement audit was carried out smoothly. Compared with the information between the various phases of traditional engineering projects The disconnection of transmission greatly reduces the loss of information and protects the integrity of the data.By analyzing the overall investment benefit of the project and establishing an internal database of the enterprise, it is possible to ensure that the later cost management of the project is more effective and smooth.

4. Conclusion

In summary, the application of BIM technology can more accurately and efficiently complete the most tedious and complex calculation of engineering quantities. The core of engineering cost management is transformed into full-process cost control, which reduces the tedious calculation of engineering quantities. It has a great boost.

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