The Application of Innovation Mode in Building Engineering Management Based on Computer Technology

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Abstract. Buildings are one of the largest energy consumers in the world, and their energy consumption and greenhouse gas emissions account for one quarter to one third of the world's total energy consumption. In addition, the building affects other areas far from its location, including river water, air quality and social traffic patterns. In China, more than 80% of new buildings are high energy consumption buildings every year, and more than 95% of existing buildings are high energy consumption buildings. At present, China's energy consumption per unit floor area is more than 2-3 times that of developed countries. Through the corresponding computer technology application software, to create a simple building information model, architects in any stage of design, at any time, can easily evaluate the design scheme of the building, which is of great significance to the project management and construction of the building.

Keywords: Computer Technology, Construction Projects, Innovation Management

1. Introduction

With the continuous development of China's market economic system, the level of computer technology management in construction projects is also constantly improving. The quality and service level of construction projects are constantly raising with the progress of the society. The construction of construction teams needs to be carried out on the basis of meeting the functional requirements of the project construction, speeding up the construction speed and guaranteeing the project quality. By the management of construction engineering technology is including computer technology management, file management and technical training and other aspects of development needs, its basic task is through the implementation of the national technical reform policy development and related standards, a clear division of responsibility technology, guarantee the quality of engineering, puts forward a new construction technology.
2. Problems existing in computer technology management in construction engineering

2.1. Computer technology management of basic engineering is not in place

The foundation engineering in construction projects is mainly for the construction of the foundation, this leads to foundation engineering exist in the process of construction of a large number of potential safety hazard, thus, the phenomenon of the foundation pit collapse. This kind of phenomenon the reason is that computer technology management work does not reach the designated position, not to the overall quality control, let the basic engineering problems.

2.2. The construction template management is not in place

At present, the formwork technology of construction in China mainly includes wood formwork and steel formwork. Compared with the former, although the service period is short, it is relatively easy to have the problems of lax assembly and deformation. But the steel template may not be strong enough. All these problems need to be dealt with by the computer technology management department. Therefore, the computer technology management of some construction engineering enterprises is not in place, leading to the above problems, resulting in the delay of the project. Figure 1 illustrates the whole process of material and energy consumption.

![Figure 1. Material and energy consumption throughout the building process](image)

As shown in figure 1, it is often problematic to add reinforcement after the template is made. First of all, the quality of the steel bar needs to pass the standard. It is not possible to select corroded steel just to save capital. In this way, the steel bar produced does not have enough tension and strength, and there is also the problem of not falling behind in the production technology. In the formwork technology, the most important problem is concrete construction technology. Some construction enterprises are too dismissive of concrete technology, which leads to many concrete substandard and wasted.

2.3. Technical problems of masonry in building projects

Masonry is the structure of columns and walls formed by the use of mortar and blocks. Generally speaking, it includes stone masonry and wall panel masonry, which play an important role in architecture. The reasonable and effective energy saving building wall envelope is shown in Figure 2 below:
Fig. 2. Design of energy saving building wall envelope

As shown in the figure 2 above, at present, China has banned red brick materials, popularized porous bricks in a wide range, and great changes have taken place in masonry technology. How to cope with these changes and adjust production and computer technology management in the development of the current era are issues that relevant responsible personnel need to consider.

3. Countermeasures to improve the level of computer technology management in construction engineering

3.1. Define the responsibilities of computer technology management

The computer technology management of the project should first be guided and completed by the project management department. The project management department is the core of the whole project. The establishment and improvement of scientific system management is the guarantee for the effective implementation of a number of computer technology management work. In this respect, managers should be required to continuously improve themselves, implement scientific management of democratic system, organize the whole people to have discussions regularly, update the management norms of computer technology, and reach an overall consensus.

3.2. Strengthen the management of engineering technology raw materials

Construction enterprises should fully realize that the management of engineering technical data and documents is the lifeblood of the overall computer technical management, and further in-depth control of the overall engineering technical data. Establish rules and regulations for project data management, use professional reference staff to organize data, urge relevant departments to install specified computer technical management equipment, and hand in project management materials in a timely manner to ensure the integrity of project engineering technical data. In addition, enterprises need to strengthen the publicity, so that all construction personnel feel the importance of engineering technical data, strengthen inspection and supervision of the overall strength at the same time to develop the level of engineering technical data management.

3.3. Strengthen technical personnel management

Construction enterprises shall strengthen the management for technical talents, and hiring the right talent for enterprise computer technology management of targeted training, enhance the personnel's
overall quality and ability, make enterprise of individual ability and the most effective use of the talent resources, the computer technology management talent training is the core of building computer technology management.

3.4. Adopt new computer technology management mode

Construction enterprises should thoroughly change the old ideas, in daily work to create a new work environment, and the introduction of cash management method of computer technology and management experience, improve the enthusiasm of learning knowledge technology, overall improve computer technology management personnel in the management of innovation ability, through the organization itself in the form of regular training and level of ascension.

The performance indicators such as landscape visibility, sunshine, wind environment, thermal environment and acoustic environment of the construction project have been basically determined in the early stage of development, but due to the lack of suitable technical means, it is difficult for the general project to have time and Costs Multi-scenario analysis and simulation of the above various performance indicators, BIM technology provides the possibility of popular application of building performance analysis. The next step of Greentown Residential Science and Technology Department will be to promote the performance analysis of buildings, improve the comfort of pedestrian areas around residential buildings, and improve the layout of the residential area, reduce the eddy currents and stagnation by adjusting the layout of the planning scheme and the layout of landscapes.

4. Application of BIM technology in energy conservation

BIM assisted residential energy-saving design, or capability performance simulation and FENIX, is the integration of comprehensive data information. The plan is for feasibility prediction. The application of green building technology and products will greatly enhance the comfort and environmental performance of the house products, and provide owners with a higher quality green life. In the practice of building technology, through the continuous improvement and adjustment of BIM technology application, the “extraordinary method” for design and engineering management requirements is also that Greentown “creates more refined products for the society and creates more for the city. The beauty of the concept is embodied. Among them, the problems between residential design and residential energy consumption analysis include:

◆ The residential energy consumption calculation is huge, the method is responsible, the designer needs to apply auxiliary tools, otherwise it is not easy to grasp.

◆ Residential designers in the design period of the scheme are not conducive to the rapid and intuitive analysis of energy consumption, so that the difficulty of optimizing the design has increased.

◆ In the scheme design stage, the analysis results of energy consumption cannot be directly applied to guide the design and help the designers to modify the design scheme.

5. Conclusion

With the continuous development of market economy system in our country, construction project
management level of computer technology is also rising, and the formation of a construction enterprise core competitiveness, and in the field of construction engineering in our country, all kinds of new materials and construction technologies such as spring growth, more and updated computer technology management technology for construction engineering management have higher requirements. In order to ensure the normal progress of the construction period, it is necessary to ensure the unified development of cost, quality and safety. The project management department is the core of the whole project. Therefore, the establishment and improvement of scientific system management is the guarantee for the effective implementation of a number of computer technology management work.

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