Research on Existing Problems and Innovation Strategies in Civil Engineering Construction Technology Based on Computer Technology

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Abstract. In recent years, the industry reform of Construction Engineering in our country has made great efforts based on computer technology. Under the background of computer market economy system, the construction industry has a broad development prospect. As an important part of it, the scale and quantity of civil engineering construction are also growing, and the building function is becoming more and more complex. This paper analyzes and discusses the problems and innovations in the construction technology of civil engineering, hoping to provide reference for relevant practitioners.

Keywords: Engineering, Construction Technology, Problems, Innovation, Computer Technology

1. Importance of civil engineering construction technology

Because the civil engineering project has certain characteristics, it is difficult to construct and involves a wide range of contents. Therefore, in order to ensure the construction quality of civil engineering, it is necessary to solve the existing problems, innovate the construction technology and construction process, ensure the construction quality, and improve the competitive advantage of the construction enterprises.

1.1. Promote the production efficiency of the project

The implementation of the technical management of civil engineering has many positive significance. First, it has a significant improvement effect on the construction efficiency of the project. Because the correct use of technology will not give full play to a large amount of time in the construction phase. The natural production efficiency is higher. At the same time, the upgrading of technology can provide a lot of convenience for workers to operate. Although the automation technology is not perfect, But it is very popular in the construction personnel, some dangerous operation process can be completed by...
its automation. It can be seen that the development of automatic construction technology is quite promising.

1.2. Automation is an inevitable development trend

Automation construction technology has become a hot direction for the future development of construction technology, and due to the research and development of related technologies in recent years, it provides a solid technical support for automation construction technology, so relevant enterprises can invest a lot of money in this aspect without worrying about not receiving reports, which also promotes many construction enterprises willing to invest in this aspect Enter.

1.3. Important means to promote energy conservation

The construction process of an exceptional construction project will consume a lot of resources, and will also have a great impact on the surrounding environment. It can be seen that the construction project is bound to face the limitation of energy shortage in the future. Therefore, it is necessary to develop the automatic construction technology now, start to save energy, and contribute to the future development of the construction industry.

2. Problems in civil engineering construction technology

Before entering the construction site, the project management personnel failed to fully investigate the environment, climate, soil quality, hydrology, underground bearing stratum and other conditions of the site, lacked accurate understanding of the possible disaster factors and factors affecting the construction progress on the site, failed to formulate the site rules and regulations in line with the actual situation on the site, and to a certain extent increased the work of site interference construction technicians And indirectly affect the full play of the construction technology, resulting in the construction technology is difficult to achieve the expected purpose of design and use. Before the construction personnel enter the site, the site construction management personnel fail to formulate a reasonable system, copy or imitate the system model of similar projects. This kind of uniform model is difficult to penetrate the heart of the construction workers who are good at implementing the project technical operation, and can not play a role in regulating the site construction process, management, rewards and punishments, resulting in the site construction The technical implementer's operation is not standard, the machine team can not be fully used or used too much, and the site process is disordered, so the construction technology cannot be smoothly connected.

2.1. Construction technology theory and practice are separated from each other

In the practical operation, the theory and practice of civil engineering projects are seriously separated from each other. Many theories are too empty and do not conform to the actual construction situation, so it is difficult to better implement them in the actual project construction and select reasonable construction technology. Because the construction involves a lot of content, and civil engineering projects also pay more attention to the line analysis, material performance and optimal control. However, many construction enterprises have not reached a fixed standard in terms of technology, resulting in a large gap between the same construction technology in the industry, leading to the actual situation and theoretical knowledge in the actual operation process. At the same time, because of some
characteristics of civil engineering projects, such as the difficulty of construction and the wide range of content, the requirements for the performance of construction materials and feedback analysis are high, and the construction personnel are required to have high quality. But many civil engineering construction technology is unreasonable, it is difficult to give full play to the original role, to a certain extent, restricting the quality of civil engineering construction.

2.2. Inadequate management

The site engineering management personnel did not have enough expectation for the material loss and mechanical loss, and failed to form an effective plan for their loss prevention, as shown in table 1 below.

| Representative aspects                                      | Detail contents | Influences                   |
|------------------------------------------------------------|-----------------|------------------------------|
| Reinforcement and concrete                                 | Random          | Material performance         |
| Storage location of large-scale equipment                   | Exposed         | Could not be well protected  |
| Arrangement of machine team                                | Unreasonable    | Could not be well inspected  |
| Storage and safekeeping of reusable materials               | Unreasonable    | Concrete leakage             |

2.3. Construction technology operation not up to standard in construction technology

Now, in order to reduce the construction cost and save construction materials, some construction enterprises often use improper construction methods, such as stealing construction materials in the construction phase to reduce the purchase cost of materials, or not paying attention to the construction of each detail part. They think that although they do not comply with the requirements and use the correct technical methods, they can still complete the project. This view is very wrong. Small mistakes in construction technology will lead to the decline of construction safety, leading to the occurrence of construction quality problems. Although the project is indeed completed within the specified time limit, the quality of the project can not be verified and inspected. After the civil project is used for a long time or affected by geological disasters, there will be incalculable losses.

3. Innovation strategy of civil engineering construction technology

In order to ensure the stability and safety of the construction, the prestressed anchor - cast-in-place pile system can be selected, which is more suitable for the civil engineering construction with high groundwater level, and the construction effect is more prominent. However, the construction efficiency of this kind of construction technology is low. The application of automation technology promotes the integration of retaining structure and bearing structure. Under special circumstances, temporary retaining piles can be set, basement walls and continuous walls can be integrated, which can effectively improve the construction efficiency, save costs and create greater economic benefits.
3.1. Bored pile technology

Bored pile construction technology is widely used in the construction of civil engineering with its unique advantages. In the specific construction, it is necessary to consider the specific situation of the project, select and use the construction method scientifically, select the construction materials and mechanical equipment reasonably, and ensure the orderly construction. In addition, in order to ensure the quality of the civil engineering project, the construction personnel need to carry out the work in accordance with the technical requirements and standards of the bored pile, to construct the boreholes at the predetermined positions, to avoid the problem of hole collapse, and to take protective measures.

3.2. New prestressed construction technology

In the civil engineering construction, the application of new prestressed construction technology is increasing, because this construction technology integrates innovative elements, especially in the prestressed concrete bridge construction, more application of this technology can effectively improve the stability of the building structure. In practical application, prestressed construction technology is mainly divided into bonded prestressed technology and unbonded prestressed system. The biggest advantage of this technology is that it can reduce friction loss, improve resource utilization efficiency and create greater economic benefits.

3.3. Vigorously invest in new civil materials

In addition to paying more attention to the level of construction technology, the public also pay more and more attention to the selection of materials and the health of materials. Therefore, when selecting materials for civil engineering projects, it is necessary to consider whether they are green and environmentally friendly, and whether they are new materials. For example, there is a new type of building wall on the market, which has many advantages, as shown in figure 1 below. Through the use of this material, not only can the quality standard be improved, but also can produce better compression resistance and stability. In the construction process, if the application of this material is increased, not only the construction quality can be greatly improved, but also part of the cost can be reduced, and customer satisfaction can be improved[3].

![Figure 1. Advantages of new type building wall.](image)

4. Conclusion
Civil engineering construction plays a more and more important role in today's society. No matter for the development of civil engineering computer technology relying on the progress of global science and technology, or for the development of civil engineering management level relying on the continuous innovation of managers and academic researchers, the valuable experience accumulated by human beings in the process of civil engineering practice for a long time is still necessary for its further computer development[6].

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