Exploration And Analysis of The Integration of Civil Engineering Technology and Computer Under New Technical Conditions

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Abstract. Due to the objective existence of natural disasters such as typhoon, earthquake, fire and flood, the performance of engineering structure needs to face such small probability and large load. It is a very difficult and unrealistic method to conduct experiments to verify. First, it is impossible to fully simulate the parameter variation bar; second, the cost of physical test is too high; third, it is dangerous to destroy the experiment and the equipment is difficult to keep up with it. The computer simulation technology can simulate the whole process from deformation to collapse of civil engineering structures of prototype size under the action of disaster load on the computer, so as to reveal the links and factors of unsafe structure, thus greatly improving the reliability of civil engineering.

Keywords: Civil Engineering, New Technology, Computer

1. Introduction

With the deepening and expansion of application areas, the resulting environmental pollution problems cannot be ignored. Based on the status quo of developing an ecological society in my country, it is required that while developing the scale and quality of the project, we must also pay attention to the protection of the ecological environment and achieve sustainable development. Sustainable development is my country’s common development goal of coordinating the relationship between resources, population, construction and the environment. However, in the new stage, my country still faces many difficulties and shortcomings in civil engineering and construction engineering, which is not conducive to achieving the development goal of sustainable development. Under the increasingly severe environmental situation, how to reduce the damage to natural resources while ensuring the quality of civil engineering construction, through the use of energy-saving and environmental protection technologies, is of important research significance to create conditions for creating an ecological environment with green waters and mountains.

2. Overview of civil engineering

In the past civil engineering management, the staged quality management model adopted, such a management model led to poor quality management effects in civil engineering and it was impossible to achieve full-process quality management. With the gradual improvement of management
requirements, coupled with the continuous emergence of problems in civil engineering management in the past, the whole process quality management model has been gradually implemented, starting from the feasibility study stage and gradually realizing the whole process quality management, reducing the occurrence of problems and improving the pertinence of problem handling. This can better play the important role of quality management[1]. The Engineer system is shown below.

![Engineer system](image1)

**Figure 1.** Engineer system.

3. Civil engineering technology and computer integration

3.1. The development of informatization trend

Informatization technology will comprehensively innovate design technology and construction technology. Informatization construction has greatly promoted the development of civil engineering industry. The social background of informatization provides a broader space for the rise of architecture and optimizes the combination of information resources and information services for users[2]. The BIM system is shown below.

![BIM system](image2)
3.2. Wide application of high-performance materials
With the continuous development of science and technology and the continuous development of new energy sources, more and more high-performance materials have been widely used in civil engineering, such as high-grade cement, glass fiber concrete, polymer impregnated concrete and composite energy-saving concrete. There is also the development of new wall materials. The application of these high-performance materials has made civil engineering new developments in structure, design theory and construction technology. And in civil engineering, steel will also develop in the direction of high strength, good plasticity and weldability. In short, the application of high-performance materials is an important development trend in future civil engineering[3]. The management system is shown below.

Figure 2. BIM system.

3.3. The expansion of civil engineering to underground, ocean and desert
With the rapid development of the construction industry, construction space resources have become an important factor restricting the development of the construction industry. The development of space resources is a very effective way to solve the shortage of architectural space resources. The space resources that can be developed in our country include underground space, deserts, oceans and space. In fact, my country has gradually developed these space resources in the process of civil engineering development. For example, the current subways and underground parking lots are the embodiment of the use of underground space and my country is also developing ocean and desert resources and my country is exploring Certain achievements have also been made in space, so the future development trend of my country's civil engineering is to develop into underground, ocean and desert spaces[4].

Figure 3. Bim management system.

3.4. Building diversification and three-dimensional urban architecture
The development of materials science and engineering mechanics has promoted the development of civil engineering in the direction of diversification, in order to solve the problems of energy shortage, environmental protection and transportation solubility. More and more building structure forms are produced. As the density of the urban population gradually increases, problems such as traffic congestion and land use are gradually emerging. In order to solve the problem of urban land use, it is necessary to develop three-dimensional buildings. In other words, there will be more and more high-rise buildings in the city, but the construction of high-rise buildings The requirements for construction technology and design are higher, so the development of various technologies in civil engineering must be accelerated[5].

4. Civil engineering construction analysis
4.1. Strengthen the quality control at the design stage of the project
According to the actual conditions of different projects, analyze and study the actual credibility of the
design plan to improve the selection of construction technology and construction technology. Pertinence, play an important role in construction technology. At the same time, it is necessary to conduct a comprehensive study of the design drawings in accordance with the requirements of the construction to prevent the inherent defects of the design. As a design unit, we must strictly follow the national design specifications and requirements, strictly abide by the design standards and conduct data analysis conscientiously and responsibly to ensure the continuous improvement of the quality of the designed civil engineering projects.

4.2. Quality management of personnel and construction materials and equipment
Personnel, materials and equipment are important components of daily civil engineering construction, but fundamentally speaking, personnel are the foundation of construction management. Therefore, for the daily construction personnel, it is necessary to gradually increase the training intensity of the personnel to ensure that each constructor has good construction techniques and high construction quality. When carrying out daily management work, it is necessary to adhere to the people-oriented management concept and do a good job in multi-angle personnel management. For the selection of various materials, we must start from the perspective of design standards, strictly select high-standard materials and improve the quality and safety of the materials themselves. The use of machinery requires regular maintenance and maintenance to ensure a comprehensive inspection, reduce the occurrence of safety accidents and achieve full control of the impact of the three factors of human resources on the quality of civil engineering.

4.3. Quality management at the construction site
The daily management of civil engineering must start from the perspective of on-site management, formulate a strict and complete responsibility management system, clarify the tasks of different personnel and their own responsibilities and improve everyone's understanding of the importance of construction quality. In addition, it is necessary to gradually improve the management of materials and equipment at the construction site to ensure the stacking of materials and equipment planning and to improve the smoothness of roads. For the daily construction process, we must do a good job in safe and civilized construction, complete road cleaning for the construction site team and improve the level of civilized construction.

5. Conclusion
Increasing the development and improvement of civil engineering construction technology is the key point for the development of civil engineering in the future. Civil engineering in the new century should not only develop in its inherent functions, but also develop towards diversification and informatization, which is more in line with the needs of people's lives. The development of civil engineering materials is also very important, so if we want to develop civil engineering in our country, we need to start from many aspects, so that our civil engineering technology can walk in the forefront of the world.

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