

Research on Key Technologies of Civil Engineering Construction Management

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Abstract: In the decades of reform and opening up, the rapid development of economy has made the construction industry flourish unprecedentedly, and civil engineering has emerged in large numbers. The quality of construction project management determines the market share of enterprises. Only by occupying more market share can enterprises continue to grow and grow. Under such overall construction management objectives, civil construction units are doing their best to improve their own construction management level. We should constantly improve the operation and construction means of civil engineering, improve the working environment of civil engineering on site, and pay attention to the life of workers on site. Only good construction management can ensure the progress of civil engineering, improve project quality and reduce engineering costs. This paper analyzes the existing problems in civil engineering management for the current status of civil engineering construction management in China. Then it puts forward the key technology of innovative civil engineering construction management. With the further implementation of engineering construction project management, its research will be further deepened and gradually improved.

1. Introduction

In the decades of reform and opening up, the rapid development of economy has promoted the construction industry to show unprecedented prosperity, with the emergence of a large number of civil engineering [1]. The research of civil engineering construction project management has a large topic and involves a wide range of fields. It is difficult to systematically study and achieve results. Project is the source of enterprise profit and the window of reputation [2]. The quality of construction project management determines the market share of enterprises. Only by occupying more market share can enterprises continue to grow and grow. The construction industry has long noticed the importance of the quality of civil engineering [3]. However, there are still a large number of substandard civil engineering. Repair or rework results in great waste, and there are also major potential safety hazards [4]. In order to improve the economic benefits of civil engineering enterprises, the construction management should be carried out in all aspects in order to optimize the construction mode and economic benefit mode. Continuously improve the corporate social reputation and win a broader living space for the development of civil construction enterprises [5]. Under such overall construction management objectives, the civil construction units are doing their best to improve the construction management level of the enterprise [6]. As a construction enterprise, it is only hard to practice the internal strength of the enterprise, study the construction project management, and summarize and promote unique experience. In order to be superior, there is room for survival and development [7].

Civil engineering construction is an important embodiment of the construction management level, and has become a gathering place for various production factors. According to a large number of civil engineering cases, the most important factor affecting the quality of civil engineering is the construction management of civil engineering [8]. For the management of construction projects, all construction companies attach great importance to it and continue to study. If you don't study it, you can't adapt to the market, you will fall behind, and you will be eliminated. Continuous research on construction projects is a long-term strategic need for enterprise development. On the basis of the engineering contract, according to the inherent law of the construction of the project, refer to the

actual characteristics of the specific project [9]. Reasonable and effective management of various elements in the construction process, in order to optimize the allocation of resources. The construction stage of civil engineering is the most important stage of the whole civil engineering, and the construction management of civil engineering is the most important factor affecting the quality, duration and cost of the whole civil engineering. In view of the current situation of civil engineering construction management in China, this paper analyses the problems existing in civil engineering management. Then the key technologies of innovative civil engineering construction management are put forward.

2. Materials and Methods

Engineering contracting is one of the foundations of engineering construction. In order to realize their own interests, Party A of Contracts often formulates unequal contract terms. However, China's construction market mechanism is opaque, and even if there are unequal contract terms, Party B will generally accept it. However, during the construction process, it will cut corners for profit, and will make up for the loss of the above clauses from other aspects. The most prominent problems in the current construction field are the two problems of inadequate management and strict security situation. The signing of the contract is not standardized, and the situation of the parties changing the terms of the contract arbitrarily occurs, which causes great confusion to the construction management [10]. The primary task of project management of modern civil engineering construction enterprises is to fully utilize the management concept of modern civil engineering construction projects in the construction management of civil engineering. Promote the smooth development of engineering project construction work, effectively improve the control and management of engineering construction process. Construction units have not paid enough attention to construction management, and many management and control systems of civil construction enterprises are not complete enough. Based on the accumulation of experience and subjective assumptions, there is a lack of necessary theoretical verification. This kind of construction management does not meet the requirements of modern economic development.

Building information model can be established, shared and applied in all stages of the project life cycle, and can maintain consistency. From 2005 to 2018, the average annual growth rate of real estate investment in China is much higher than that of GDP. During this period, China's real estate development scale trends as shown in Figure 1.

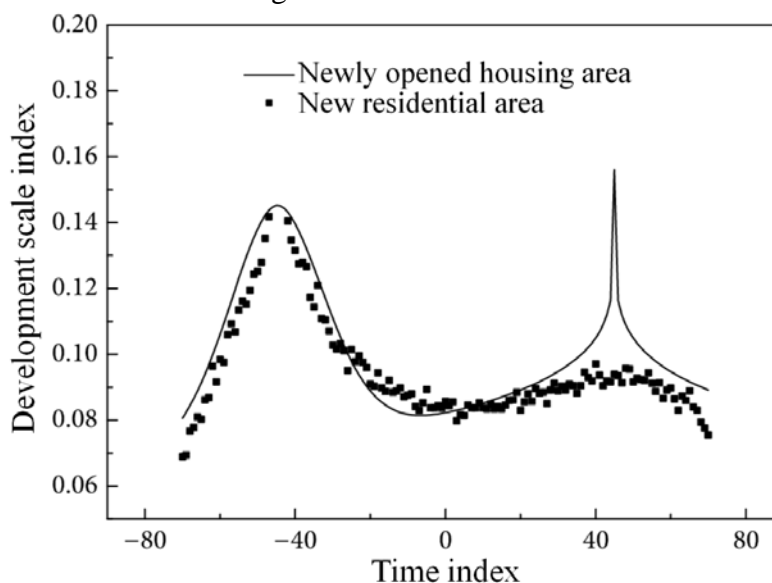


Fig.1. Trends in the scale of real estate development

The lack of management system is a common phenomenon commonly seen in the construction management of civil engineering. In order to reduce the labor cost, the staffing of civil engineering construction management posts is not in place, and one person often takes up the management of

multiple positions. Civil engineering construction is the focus of the management of construction projects of modern engineering projects. Its management is an important part of overall project management. It has played a significant role in the overall construction progress of civil engineering, the overall construction quality of civil engineering, and the management and control of civil construction. Project supervision should be multi-faceted supervision from the whole process of project feasibility study, design, construction and delivery. The current situation of engineering supervision in China mainly focuses on the quality supervision of construction site and the quantity approval and signature of inspection and valuation. The construction management team should be constructed actively to ensure that the key positions are in charge of by special personnel. We should clarify the responsibilities and obligations of our respective posts and promote the practice of taking responsibility to people and arriving at their posts. Make each post responsible for its own work within the scope of authorization. Implement the real-time record of construction records, so that the construction records are real and effective, and can truly reflect the construction situation.

3. Result Analysis and Discussion

Enhancing safety awareness requires enterprises to configure appropriate safety protection technology to create a safe production atmosphere and work habits. Improve staff's safety awareness through education and training. The potential safety hazards should be eliminated in time, and the dangerous operations should be corrected and dealt with in time. In view of the characteristics of civil engineering construction, it should be noted that the most important thing in project management is to improve the quality of Engineering construction. As the project cost is getting lower and lower, construction enterprises need to draw some funds from the project in order to maintain their livelihood. Some construction enterprise management is extensive, lacking the correct analysis of economic indicators such as project manufacturing cost, profit and so on. Some people have no idea how much the site should cost to build a project of good quality. At the same time, the construction cost and progress of civil engineering should be managed scientifically. Ensure the smooth development of civil engineering construction projects and continuously improve the economic benefits of civil construction enterprises. China's state-owned enterprise managers are appointed by superiors and cannot work in a company for a long time. This short-term behavior is not conducive to the long-term development of the enterprise, and has adversely affected all aspects of civil engineering project management.

Civil engineering modeling considers the physical properties of an object when modeling. Fractal technology and particle systems are typical physical modeling methods. Fractal techniques can describe data sets with self-similar features. Figure 2 shows the performance comparison results of the algorithm before and after storage optimization.

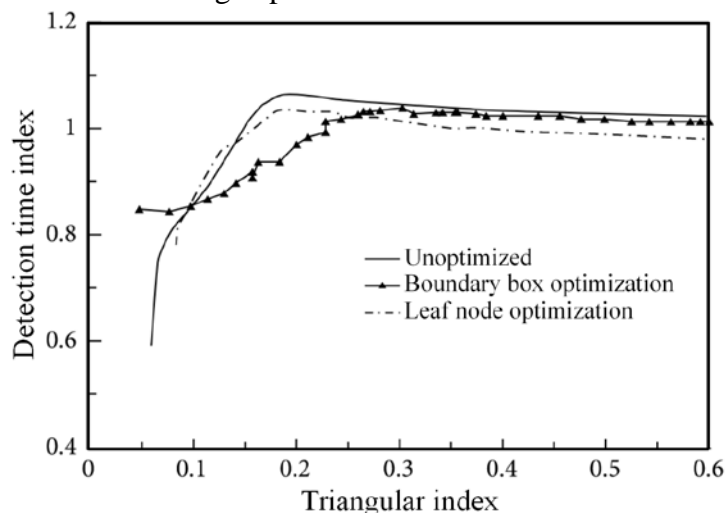


Fig.2. Comparison of algorithm performance before and after storage optimization

At present, the implementation of the project legal person system in China is still not in place,

and there is a dead angle phenomenon. With the diversification of civil construction construction and investment entities, some legal person operations are integrated with construction management, project financing, operation, and loan repayment. Some legalized operations are fund-raising construction, and fund-raising construction and operation repayment are all managed by different units. The construction organization design is a comprehensive technical and economic document used to guide the construction preparation and organization of the proposed construction. It is also the main document for the scientific management of construction activities by construction project management planning. Vigorously build various systems, work processes, and control methods for construction management. Keep in mind the empty words and combine the actual situation of the project. It is also the main basis for the owner to evaluate the bidding unit. More important is the important programmatic document to guide the construction of the project after winning the bid. The design quality and responsibility system of civil engineering are not closely linked, which is also an important problem in the management of civil engineering. This kind of easily causes the construction unit design change to be wrapped up, the design change remains unchanged, no matter how the design changes can not be adjusted. We should try our best to do a good job in investigation and research. Only by ensuring that as many authentic information as possible and thorough understanding of the bidding documents can the construction organization and design be completed.

In the design stage, the construction drawings can be continuously deepened and optimized, so as to achieve the goal of Engineering design. Analytic Hierarchy Process is used to judge the impact of each sub-project on the cost importance of the two-storey underground project. As shown in Table 1, the budgetary amount of each material for the project.

Table 1 Project material budget

Entry name	Budget (10,000 yuan)
Civil Engineering	823.6
Plumbing	151.9
Decoration Engineering	88.2
Electrical Installation Engineering	122.5

Quality management is mainly about people and work practices. Improve the ability and quality consciousness of quality technicians through enterprise training. Through the construction site management level, we can directly see the whole level of civil construction management. It is necessary to restrain on-site operators and managers through sound rules and regulations and strict post responsibilities. Strict work discipline, equal treatment, reduce management errors. Because of the size of responsibility, the responsibility of supervision work is relatively small, resulting in the current civil engineering construction supervision work is obviously inadequate. The supervision work has not played its due role, and some quality problems in the construction process have not been found or corrected in time. It is necessary to continuously improve the operation and construction methods of civil engineering, improve the working environment of civil engineering on site, and pay attention to the life of workers on site. In order to make the construction organization design plan excellent, it is necessary to be good at comparing multiple plans and demonstrate superiority. In the process of preparation, professional research should be carried out on engineering projects with complex structures, difficult construction or new technologies and new technologies. The preparation process should be considered comprehensive and focused. Repeated comparison and research can propose a construction organization design with feasibility and advancement.

4. Conclusion

The competition in the civil engineering construction market is also growing. As a company, maximizing corporate profits is also the goal pursued by contemporary construction companies. Therefore, we should continue to reduce the cost of civil construction enterprises with the scientific

cost management concept. Only good construction management can ensure the progress of civil engineering, improve project quality and reduce engineering costs. This paper proposes the corresponding key technologies by discussing the problems existing in the current civil engineering construction management. The whole process of construction management is a systematic and organic process. The control of construction safety management is a key point of on-site management. In order to carry out project management, we must establish and improve the market expansion mechanism of contracting tasks. Make it coordinate and promote the development of project management in depth. The management department should establish a safety management leading group at the construction site. Publicize safety management mode and method. And organize regular safety activities to promote advanced management experience. With the further implementation of engineering construction project management, its research will be further deepened and gradually improved.

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