

Original Paper

Exploration of Construction Safety Management of Civil Engineering Civil Construction Project

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Abstract

With the acceleration of urbanization, more and more construction projects are appearing, and the modern building functions are increasing, while the requirements for project management are also getting higher and higher. In the construction of civil engineering construction, it is necessary to make full preparations, rationally deploy materials, equipment and other resources to ensure the full implementation of construction technology, and further enhance the overall effect of engineering construction. The development of the market economy has promoted the reform of the enterprise management system and the bidding and tendering system. Many projects have made new adjustments in the reform system, leading to a new trend in the management mode of construction projects. It has made significant breakthroughs in management concepts, management strategies and management methods. The new model must bring changes in management. In view of this, this paper focuses on the related problems of civil engineering to improve the current management efficiency. If the quality of the project is not reasonably controlled, it will have a great impact on the economic benefits of the whole project and the development of the construction enterprise.

Keywords

Civil engineering construction, Engineering construction, Safety management

1. Introduction

The current level of development of China's civil engineering and construction projects to further improve the civil engineering industry has brought more and higher difficulty coefficient of the construction project, but also effectively expand the scope of engineering and construction of civil engineering and construction. In the engineering construction unit actually carry out the process of civil engineering construction, the effective management of construction safety is very important for the efficiency of the project, can be in the civil engineering site construction, effectively avoid the

construction of the hidden dangers of the construction process, for the overall construction of civil engineering construction to bring more benefits. This paper briefly describes the importance of construction safety management in civil engineering, analyzes the existing management problems, and introduces a variety of effective management methods.

2. Background Analysis

With the perfect development of the market economy, construction enterprises want to gain an advantage in the increasingly fierce market competition, it is necessary to strengthen the construction management of all kinds of construction projects, comprehensive understanding, mastery and application of construction technology of construction projects to ensure the quality of the project. The construction of any project must be based on ensuring the quality of construction. Quality is the core and key content of all engineering construction projects, civil engineering is no exception. The quality of its construction process is directly related to the success or failure of civil engineering construction, but also related to the success or failure of the construction enterprise or unit, which is also related to the full play of the social and economic benefits of civil engineering and its sustainable construction and development. On this basis, a brief discussion of civil engineering construction technology, and the application of civil engineering construction technology is discussed and analyzed.

3. Importance of Construction Safety Management in Civil Engineering Construction Projects

Construction safety management in civil engineering construction, that is, according to the actual construction characteristics, program content and site environment, the engineering aspects of effective safety management methods, and in accordance with the safety of construction and equipment use precautions carried out to ensure that construction personnel and equipment safety management methods. Engineering construction party in the process of actual construction of civil engineering projects to promote construction safety management innovation research, can effectively enhance the level of construction safety management technology of civil engineering, so as to complete the various needs of civil engineering projects, can prevent the construction process due to the construction safety management methods are not scientific, immature, brought about by construction safety hazards and unnecessary cost losses, thus further enhancing the construction efficiency in the process of actual construction of civil engineering projects. Construction efficiency in the actual construction process.

4. Existing Problems of Construction Safety Management in Civil Engineering and Construction Projects

4.1 Engineering and Construction Unit of Construction Safety Management does not Pay Attention to

Through the relevant personnel in the civil engineering construction process on-site research pointed out that most of the engineering construction units in the actual civil engineering construction process, for the construction of the safety of the management of all aspects of the attitude of contempt, the

construction safety management personnel is based on subjective management experience in civil engineering construction safety management, rarely in accordance with the specific safety management of the civil engineering construction programs Requirements for the development of management, this management makes the actual civil engineering construction safety management content does not meet the needs of the modern engineering field of safety and quality level, it is difficult to meet the actual requirements of the investor and the national management standards, thus reducing the level of civil engineering construction projects completed building. At the same time, due to the engineering and construction units to control the overall project cost of civil engineering and construction projects, and thus difficult to carry out the management quality of management personnel and construction safety management level of training, resulting in the further reduction of the quality of civil engineering and construction projects.

4.2 The National Construction Field Relevant Departments Supervision Degree of Deficiency

The relevant regulatory departments in the field of national construction in the actual construction of civil engineering works, to a certain extent, the lack of construction safety management of civil engineering works guidance and supervision, resulting in the construction unit often in the relevant departments of the engineering field of large-scale safety inspection work, only in the construction of civil engineering works in the construction process to carry out effective construction safety management work, and in the large-scale inspection outside the period of time Still slight its actual management of construction safety, resulting in the actual construction process of civil engineering construction project there are a large number of dangerous factors.

4.3 Civil Engineering Construction Safety Management System is not Sound

At present, there are certain difficulties in the design of construction safety management system in civil engineering construction project. Such as in the actual construction of civil engineering construction process, there are a variety of construction links, in which there are a large number of construction facilities and construction, management personnel, civil engineering construction project has brought a huge number of construction costs, it is difficult to ensure that a high level of content in the actual construction of the quality requirements. The above content requires the project construction party in accordance with the actual construction conditions to design a scientific and effective construction safety management system to ensure that the actual construction of civil engineering construction process construction safety management work effectively, so as to ensure the safety of the construction personnel and construction equipment, and then for the civil engineering construction project to bring more comprehensive benefits. However, the current construction of civil engineering construction status of observation, there are still many engineering construction party lack of construction safety management work on the degree of importance, has not yet established a sound construction safety management system, so that the actual construction of civil engineering construction process there are a lot of safety hazards.

5. Case Analysis

Case background: Take a project for example, the total land area of civil construction is 17549.59 square meters, and the total area of civil construction is 16672.11 square meters. The main body of civil construction mainly consists of a two-story comprehensive training hall (a pump room on the first floor, no underground structures), a two-story school history and honor exhibition hall, and a seven-story student complex. The total height of the civil building is less than 24m, which is a multi-storey public civil building. This project adopts the civil building system of cast-in-place reinforced concrete frame structure and steel truss roof structure. The overall design life of the civil building is 50 years, and the safety structure level is Grade II. In addition, this project is designed according to the class B seismic defense category in construction, and the seismic calculation adopts the 6-degree calculation method, and the seismic measures adopt the 7-degree calculation requirements.

The biggest difficulty in the construction of this project is the comprehensive training hall, which has a maximum span of 36m and a maximum clear height of 13.5m indoors, and is a steel concrete structure + steel truss roof structure. The large space and large span structure has a large amount of aerial work and is difficult to construct. This kind of project should not only consider the rationality of the structure and the feasibility of the construction at the design stage, but also take effective measures and strictly control during the construction process to ensure the safety, quality and quantity of the project.

6. Effective Way of Construction Safety Management of Civil Engineering and Building Projects

6.1 Strengthen the Construction Site Safety Standardized Management

Civil engineering construction site safety standardized management, according to the actual situation to develop standardized management system, strictly regulate the civil engineering construction behavior. All construction personnel at the construction site must be licensed, and the management personnel should strictly monitor the qualifications of the construction personnel and eliminate unlicensed operation. Safety management personnel should check the construction site in a timely manner, including the use of construction equipment, construction materials transportation, construction personnel safety protection equipment wear and construction waste storage, etc., to the existence of potential safety hazards for investigation, and the use of appropriate technology and methods of construction safety risk level evaluation and prediction, to ensure the safety of the construction site. In addition, the establishment of a safety inspection team, and the development of a safety inspection schedule, assigned the relevant technical personnel on the construction of irregularities in the record, if found to exist in the operation of behavior is not standardized, inaccurate phenomenon, the need to carry out on-site safety training of construction personnel, informed of the consequences of their behavior, and through the radio to give a notice to the criticism of the corresponding fines, in order to enhance the awareness of the construction personnel of the construction site safety, standardized Civil engineering construction site safety operations.

6.2 Strengthen Education and Training to Improve Workers' Safety Awareness

The construction process of civil engineering projects involves a large number of construction workers, including construction workers, technicians, managers, supervisors, etc. Especially the construction workers, whose cultural level is generally low and whose awareness of safety production is not strong, bear the main responsibility of the construction task. Therefore, to effectively carry out the safety management of civil construction, it is necessary to strengthen the safety production education of civil construction personnel, hold a mobilization meeting before the commencement of civil construction, clarify the construction precautions, and implement the content of safety production education. At the same time, it is necessary to post safety production propaganda slogans and banners in conspicuous positions on the construction site of civil and architectural engineering, and warn construction workers at any time. Construction companies must organize professional management personnel to cooperate with the supervision and conduct regular safety inspections of all aspects of construction, timely detection and treatment of hidden safety hazards, to ensure that civil construction is carried out efficiently and safely according to the established plan, and to realize the normalization of production safety. Comprehensively improve the level and effectiveness of civil construction safety management. Personnel management can be carried out from two aspects: (1) internal safety culture management; (2) corresponding safety production education. Safety culture is essentially a culture created for safe production. It puts different requirements on the decision-making management and content implementation of civil engineering enterprises. In order to improve the safety awareness of employees and reduce the occurrence of unauthorized behavior, it is necessary to carry out safety technology education within the enterprise, carry out employee retraining work and improve the quality of employees. Be able to cope with changes and reduce safety accidents caused by unsafe behavior.

6.3 Increase Investment in Safety Funds

Increasing the investment in safety funds can effectively improve the safety management and environmental conditions of the construction site, which is the funds that the construction company must invest. From before the start of the project, the construction company should ensure that it has sufficient funds and use them in the construction process. When purchasing machinery and equipment, the construction company must ensure that its quality meets industry standards. In addition, the machinery and equipment must be inspected, maintained, repaired and replaced on a regular basis. Secure funds must be opened in separate accounts, access accounts created and improved, secure funds data updated regularly, and secure funds account management enhanced. It is necessary to carry out company financing, and in order to avoid phenomena such as misappropriation of public funds by company personnel, it is necessary to supervise the use of safety funds.

6.4 Improve the Construction Program and Strengthen Full Participation in Construction Safety Management

In the early stage of construction, it is necessary to implement the preparation of construction programs for each specialty. No construction shall be carried out without the construction program and technical

briefing. The project is structurally complex. When preparing the construction program, it is necessary to consider the safety measures for overhead work, structural welding or climbing operations, in order to minimize the probability of safety accidents during the implementation stage of the construction project, reduce the state of some uncertainties in the personnel, and the mechanical environment, so that the construction work can be carried out and implemented smoothly. In the implementation of the safety management system, it should be noted that, on the one hand, the responsibility of the construction unit, but also the supervision unit, construction unit and other multiple units of management and protection. Construction safety management plan can run effectively, but also need multiple project participants combined with their own work characteristics, jointly carry out their own safety management work, communicate with each other, write to each other, and contribute to the safe implementation of the project.

7. Conclusion

To summarize, civil engineering companies must go through many stages and require a large amount of construction materials, equipment and manpower, so safety management is very difficult, so it is necessary to attach great importance to the work sector, clear responsibilities and actively carry out activities to effectively implement safety management. The establishment and implementation of civil construction safety management and prevention strategies can improve the efficiency and quality of management, timely detection of civil construction safety hazards, to ensure the smooth construction of civil construction and improve the overall efficiency of civil construction. Ensure that the construction company's safety country's economic interests steadily grow. Civil engineering construction project construction is a long time, complex operation work, in the actual building construction management will involve a variety of problems and difficulties, the construction unit should pay attention to the problems in the actual construction process of civil engineering construction project, and take effective measures to solve the problem, to ensure the safety and effectiveness of the actual construction of civil engineering construction project, and then improve the quality of construction.

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