

Research on Construction Safety Management Measures for Building Sites

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Abstract:

With the rapid development of China's construction industry, the scale of construction projects is getting bigger and bigger, and the degree of specialization is also increasing. In order to gain a competitive advantage in the market, construction enterprises must focus on construction safety management and optimization of construction processes. In addition, in order to promote the long-term and stable development of the project, project contractors must also focus on the quality, efficiency, and safety of the construction environment in order to protect the lives and properties of workers. Therefore, construction safety management of building projects has become an important element in engineering construction. Comprehensive analysis of construction safety hazards strengthening the construction of safety management systems, improving the safety awareness and skill level of workers, and adopting scientific construction technology and equipment are the important strategies for the current construction safety management of construction projects.

Keywords:

Construction engineering; construction safety management; project quality; safety awareness; safety management system

Introduction

Construction engineering is an important part of the national economy, and its scale and level of improvement are directly related to the level of national economic and social development. With the rapid development of China's economy and the acceleration of urbanization, the construction industry has developed rapidly. At the same time, the safety hazards involved in construction projects are also increasing, and the safety of construction site construction has attracted much attention. Therefore, construction safety management of building projects has become the key to guaranteeing the safety of workers' lives and properties and the long-term stable development of the project. The purpose of this paper is to conduct an in-depth study on the construction safety management of building projects, analyze the problems and improvement directions of the existing management measures, and provide reference and references for improving the level of construction safety of building projects.

1. The important analysis of the construction safety management of building projects

The construction safety management of building projects is indeed an important safeguard measure for construction enterprises to realize safe production, safeguard the safety of workers' lives and properties, and ensure the quality of the project. One of the important guarantee measures. By strengthening the construction safety management, the enterprise can improve the staff's safety awareness and skill level, reduce the incidence of safety accidents, protect the workers' life and property safety, and also guarantee the quality of the project, to avoid construction quality problems. Therefore, the construction safety management of construction projects for the long-term stable development of enterprises is of great significance.

1.1 Guarantee the safety of workers' life and property

There are many kinds of safety hazards in the construction process of construction projects, such as falls from height, electrical safety, mechanical equipment safety, etc., which may pose a threat to the safety of workers' life and property. In order to protect the life and property safety of workers, construction enterprises must strengthen construction safety management. By

establishing a perfect safety management system, strengthening workers' safety education and training, improving the safety awareness and skill level of management personnel, and adopting safe technical equipment and construction technology, etc., the risk of workers' life and property loss can be effectively reduced and workers' life and property safety can be guaranteed. Therefore, the construction safety management of construction projects is a necessary means to guarantee the safety of workers' lives and property.

1.2 Ensure the quality of the project

Safety accidents can have a great impact on the construction process and quality of construction projects, for example, the accident may lead to the damage of some equipment, tools, materials, and so on at the construction site, which in turn affects the construction progress and quality of the project. By adopting scientific and reasonable safety management measures, the incidence of safety accidents at the construction site can be reduced and the impact of these accidents on the quality of the project can be minimized. Ensure the compliance

of the construction process, safety management requires construction enterprises to strictly abide by national and local laws and regulations on safety production, for example, a sound safety management system must be established at the construction site of the construction project, and the safety production conditions at the construction site should be supervised and inspected. These safety management measures can effectively guarantee compliance of the construction process and avoid the impact of illegal behavior on the quality of the project.

1.3 Compliance with laws and regulations

In China, the construction safety management of construction projects is an important measure for enterprises to comply with laws and regulations and protect the rights and interests of employees. The relevant laws and regulations in China require that construction enterprises implement the construction safety management system and strengthen the safety management and supervision of the construction site. The following is the relationship between the construction safety management of construction projects and laws and regulations: the Construction Law is the basic law in the field of construction engineering in China, which stipulates the quality and safety management of construction projects and other contents. The law requires that the construction unit of the construction project must implement the safety production management system, establish the safety production responsibility system, and strictly implement the national and local safety production laws and regulations and standards, etc. Therefore, the construction safety management of construction projects is an important step for enterprises to comply with the Construction Law.

If the enterprise fails to effectively implement the construction safety management system, it will face serious legal liabilities. For example, if a safety accident occurs during the construction process, resulting in worker casualties or property damage, the enterprise will bear the corresponding civil, criminal, or administrative responsibility. Therefore, the construction safety management of construction projects is not only an important measure for enterprises to comply with laws and regulations and protect the rights and interests of employees but also a necessary means to avoid legal risks.

1.4 Improving the competitiveness of enterprises

Strengthening the construction safety management of architectural engineering projects, improving the level of enterprise safety production management, and improving the level of construction technology and technology can enhance the market competitiveness of enterprises. In the market, safety, quality, and efficiency are important competitive factors for enterprises. Therefore, by strengthening construction safety management, ensuring the safety of workers' lives and property, improving the quality of the project, improving the market competitiveness of the enterprise, and providing strong support for the long-term development of the enterprise.

2 Problems Analysis of Construction Management of Building Engineering

2.1 Inadequate Safety Management

Inadequate safety management is a common problem in the construction management of building engineering. Inadequate

safety management is mainly manifested in the following aspects: the implementation of the responsibility for safety production is not in place, and the responsibility system for safety production is the basis of the construction management of building projects. However, some enterprises have problems such as responsibility implementation is not in place, responsibility apportionment is not clear, resulting in the responsibility cannot be clear, and safety management is difficult to implement. The safety management system is not perfect, and the safety management system is an important means to ensure safe production. However, in some enterprises, the safety management system is imperfect and no one is responsible for its implementation and execution, thus leading to the inability of effective implementation and execution of safety management. Safety facilities are missing or do not meet the specifications. Construction work requires the use of various safety facilities, such as safety nets, safety belts, protective equipment, etc. If these facilities are missing or do not meet the specifications, the safety management system is not in place. If these facilities are missing or do not meet the specifications, it will pose a threat to the safety of workers' lives and properties. Inadequate safety education and training. Safety education and training are important measures to ensure the safety of workers. However, in some enterprises, safety education and training are not in place, resulting in a lack of safety awareness and safety skills among workers, thus increasing the incidence of safety accidents.

2.2 Insufficient awareness of safety risk control of construction

Personnel insufficient awareness of safety risk control of construction is a common problem in the current construction management of building projects. This situation is mainly manifested in the following aspects: lack of professional training, many construction personnel lack professional training, cannot correctly understand and respond to construction safety risks, do not know how to use protective gear and lack of sufficient knowledge of construction safety accidents. Operational errors, construction personnel are prone to make mistakes in construction operations, because of the lack of safety awareness and risk prevention, ignoring the existence of safety hazards, resulting in safety accidents. Selection and recruitment standards are lowered, in order to quickly meet the target of the number of construction personnel, some project contracting units tend to lower the selection and recruitment standards, thus recruiting construction personnel without professional skills and safety awareness.

2.3 Unreasonable project plan

The project schedule plan is unreasonable, some enterprises may ignore the actual situation and excessively pursue the progress when making the project schedule plan, resulting in an unreasonable project schedule plan that cannot meet the actual demand. Project resource allocation is unreasonable, in the construction management of building projects, the allocation of various resources (human, material, and financial) is one of the key factors. However, some enterprises may be unreasonable in allocating resources, resulting in the construction quality and progress cannot be guaranteed. Inaccurate budget estimation, budget estimation is a very important part of project plan development. However, some enterprises may not be accurate enough in budget estimation, resulting in project cost overruns and affecting the economic benefits of enterprises.

2.4 Unstable quality of materials

Unstandardized material procurement, some enterprises may have the problem of unstandardized material procurement when purchasing materials, without making scientific procurement plans or choosing reliable suppliers, resulting in unstable quality of purchased materials. Material inspection is not in place, in the construction management of building projects, the inspection of materials is one of the key links. However, some enterprises may not be in place for material inspection, resulting in unstable quality of the procured materials. Improper storage of materials and improper storage of materials is also one of the reasons for the unstable quality of materials. If the material storage environment does not meet the requirements, or the storage time is too long, it will lead to a decline in material quality.

2.5 Poor quality of construction personnel

Skills are not skilled enough, some construction personnel are not skilled enough, the operation is not standardized, and they can't meet the actual demand, which leads to the unstable quality of the construction, and even the occurrence of

safety accidents. Poor safety awareness and the cultivation and improvement of safety awareness are very important in the construction management of building projects. However, some construction personnel may lack awareness of safety awareness and fail to form safety consciousness, resulting in frequent safety accidents. Training and management, some enterprises may neglect the training and management of construction personnel, resulting in the quality of construction personnel cannot be improved, and the quality and safety of construction are difficult to ensure.

2.6 The supervision unit's responsibility is not in place

Supervisors are important managers in the construction process of building projects, they need to play the supervisory function and comprehensively supervise the implementation of safety management. However, in practice, some supervisors have the problem of insufficient attention to detail, although in the construction process found safety problems, but failed to timely warning and stop, resulting in the deterioration of safety hazards, and frequent safety accidents. In addition, some supervisors failed to combine the actual work requirements and make good supporting records and supervision, resulting in unreasonable application of on-site materials and mechanical equipment, which increased the construction cost and difficulty of maintenance work. In the event of safety accidents, there is insufficient communication between the supervisory unit and the construction unit, and they fail to negotiate and choose the best solution, which leads to delays in the construction period, increases in construction costs, and affects the overall economic efficiency of the project. Therefore, the implementation of the responsibility of supervisors in the construction management of construction projects is not in place, which has become a major problem.

3. Strengthening the standardized management of construction site safety

In order to standardize the safety management of the construction site of the civil engineering project, a series of measures need to be taken. First of all, it is required that all construction personnel must be licensed, and the qualification examination is carried out in strict accordance with the relevant provisions to eliminate the occurrence of unlicensed operations. This can ensure that the quality and skills of construction personnel meet the requirements, thus improving construction quality and safety.

Secondly, the safety management personnel should regularly check the construction site, the use of construction equipment, construction materials transportation, construction personnel safety protection equipment to wear the situation and the construction of waste storage, etc., and find that there are hidden dangers to be rectified in a timely manner, so as to ensure the safety of the construction site. In addition, according to the actual situation of construction, the use of appropriate technology and methods of construction safety risk level evaluation and prediction, in order to develop targeted safety management measures.

At the same time, the establishment of a safety inspection team, and the development of a safety inspection schedule, the construction of irregularities in the behavior of the record and rectification, and the existence of problems in the construction of personnel for on-site safety training, informed of the consequences of their behavior, and through broadcasting and other means of notification of the criticism, and impose a corresponding fine, etc., in order to improve the safety of the construction staff of the construction of awareness, standardize the safety of the construction site of the civil engineering construction operations.

Finally, in order to further strengthen the safety management of civil engineering construction sites, it is also necessary to take other standardized management measures. For example, it is required that all construction personnel wear safety protective equipment that meets the standard, such as safety helmets, safety shoes, protective gloves, etc., to ensure the safety of construction personnel at the construction site. In addition, it is required that safety warning signs must be set up at the construction site, and safety publicity and education should be strengthened to improve the safety awareness of construction personnel. At the same time, a sound safety management system should be established, all safety management responsibilities should be clarified, the safety management process should be improved, and the supervision and inspection of safety management work should be strengthened to ensure the safety of the construction site of the civil engineering project.

4. Implementation of the production safety responsibility system

The safety management personnel should carry out regular inspections of the construction site, check the hidden safety hazards, and carry out the risk assessment to ensure the safety of the construction site. This requires companies to have professional safety management personnel and ensure that they have the necessary skills and knowledge to skillfully apply modern safety management techniques and methods. Safety management personnel should inspect the construction site in a timely manner, including the use of construction equipment, the transportation of construction materials, the wearing of safety protection equipment by construction personnel, and the storage of construction wastes, etc., to check the existence of potential safety hazards, and utilize the corresponding techniques and methods to evaluate and predict the construction safety risk level to ensure construction site safety.

In addition, the implementation of the production safety responsibility system is also an important measure to ensure the safety management of construction sites. Enterprises should fully implement the production safety responsibility system and put safety management responsibilities into practice for individuals. Project management should carry out organized and planned safety management activities in accordance with the established plan. The management team needs to conduct regular inspections of key elements such as personnel, equipment, and materials at the project construction site to eliminate potential safety hazards to the maximum extent. The construction of the production safety responsibility system can make the safety management work in the direction of systematization and standardization, establish a sound management constraint mechanism, clarify the safety responsibilities of management personnel and construction personnel, so as to enhance their safety awareness, and thus prevent the emergence of problems such as neglecting management and illegal production.

Enterprises should reasonably plan the construction site safety facilities, including safety warning signs, protective nets, safety belts, safety hooks, and other facilities set up and used to ensure the safety of construction personnel. At the same time, enterprises should carry out regular inspection and maintenance of safety facilities to ensure their normal operation and use.

5. Establishment of Construction Site Safety Level Evaluation and Risk Prevention

Construction site safety level evaluation and risk prevention is an important part of modern safety management, which can help enterprises better understand the safety status of the construction site and the existence of the safety risks, and formulate the corresponding preventive and countermeasure measures, so as to ensure the safety of workers' lives and properties and the quality of construction.

First of all, the establishment of a safety level evaluation mechanism is an important means to ensure construction site safety. Before construction, the enterprise should carry out a comprehensive safety assessment of the construction site, including firefighting facilities safety protection facilities, etc. The safety and risk of the construction site should be evaluated and a complete and authentic safety and quality grade evaluation report should be issued. The report should clarify the safety management objectives of the construction site, point out the problems and deficiencies, and urge the relevant units to correct them in time. For those whose safety and quality grade assessment fails to meet the standard, the construction work will not be started until the rectification is completed. Through the establishment of the safety grade evaluation mechanism, the enterprise can fully understand the safety status of the construction site, and timely detection and resolution of potential safety hazards, to ensure the safety of the construction site.

Secondly, the establishment of an emergency management mechanism is an important means to ensure the safety of the construction site. In the construction process, sudden safety accidents are difficult to avoid. Therefore, enterprises need to establish an emergency management mechanism, regularly organize emergency simulation and rescue, and improve the ability of the construction site to deal with sudden safety accidents. Enterprises should formulate detailed emergency plans and conduct regular drills in order to respond and deal with accidents quickly in unexpected situations. In addition, the enterprise should also carry out safety risk prediction and prevention at the construction site, and take timely measures to eliminate and reduce safety risks, so as to guarantee the safety and stability of the construction site.

6. Strengthening the quality and safety awareness of construction personnel

In the safety management of the construction site of the construction project, strengthening the quality and safety awareness of the construction personnel is an important means to guarantee the safety and quality of the construction site. The construction period of the project is long, the construction scope is extensive, and the construction personnel are required to coordinate and cooperate with each other to complete the project construction. Therefore, it is necessary to strengthen the training and education of construction personnel, improve their safety awareness and preventive consciousness, and enhance the safety awareness and responsibility of construction personnel.

Firstly, the technical briefing is carried out.

Secondly, professional training is carried out.

In addition, it is necessary to establish a sound and perfect reward and punishment mechanism as well as an assessment mechanism.

It is also necessary to strengthen the safety education and training of construction personnel. There are many safety and quality hazards in the construction process of building projects, some of which are characterized by predictability and some of which are unforeseeable. In order to ensure the safety of life and property of construction personnel on site, and steadily carry out the project construction activities, it is necessary to enhance the awareness of production safety of construction personnel, accurately identify all kinds of risks and hidden dangers in the process of construction, and in the face of unexpected accidents can take timely and effective countermeasures to ensure that the project construction can be carried out smoothly. And facing unexpected accidents can take timely and effective countermeasures to ensure that the project construction can be carried out smoothly.

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