



Discussion on Optimization Measures of Construction Technology Management

Qingyou Zai

Yunnan Design Institute Group Engineering Investment Co., Ltd., Kunming 650100, Yunnan, China.

How to cite this paper: Qingyou Zai. (2024). Discussion on Optimization Measures of Construction Technology Management. *Civil Engineering & Building Science*, 1(1), 5-9.
DOI: 10.26855/cebs.2024.12.002

Received: October 15, 2024

Accepted: November 5, 2024

Published: November 27, 2024

***Corresponding author:** Qingyou Zai, Yunnan Design Institute Group Engineering Investment Co., Ltd., Kunming 650100, Yunnan, China.

Abstract

With the rapid development of economy and society, people's quality of life and living standards have been significantly improved. However, this has also brought huge challenges to the construction industry. In order to adapt to the increasingly fierce market competition, the construction industry must take effective measures, including strengthening construction technology management, improving construction quality, and strengthening internal control to ensure that enterprises can smoothly integrate into the market. This article aims to deeply explore some potential loopholes in the current construction technology management and their impact, as well as how to effectively solve these problems, so as to improve the level of construction technology management. In-depth discussion on how to effectively improve the project management level and quality of construction management units in order to solve various challenges that arise in actual work.

Keywords

Construction engineering; Construction technology management; Optimization measures

Introduction

With the rapid development of the construction industry, market competition has become increasingly fierce. For construction engineering construction units, their survival and development are facing serious challenges. Therefore, construction managers must take effective measures to ensure that the quality of the project complies with the contract and meets the project requirements, so as to achieve the best construction plan and effectively reduce energy consumption and input, thereby achieving the greatest economic benefits. By improving the construction technology management of construction projects, the allocation of construction resources can be greatly improved, thereby achieving the best use effect; in addition, it can also greatly improve the work efficiency of staff, enhance the market competitiveness of construction enterprises, and make important contributions to the realization of my country's socialist modernization. Therefore, through the scientific, systematic and effective management of construction technology, enterprises can succeed in the fiercely competitive market, which is crucial to the long-term development of enterprises. We should go all out to achieve this goal.

1. Definition of construction technology management

Construction management is a very challenging task that needs to be carried out from multiple angles, from technical guidance, coordination, drawing revision, file management to safety control, all of which need to be carefully organized and implemented to ensure the smooth completion of the project. In addition, it is necessary to combine various resources from the inside to the outside for effective management and control. Management is an important task that

involves all aspects of construction. First, it is about the management of construction technology; second, it involves construction preparation, construction plan and construction measures. If problems are encountered, continuous improvement can also be achieved through external supervision and inspection. Therefore, enterprises should establish and improve an effective construction technology management system to ensure the smooth completion of the project.

2. The value of optimizing construction technology management

Construction technology management covers many different areas, such as: technical planning, training and file management. In addition, there are technical exchanges, drawing review and program writing. In general, construction technology management covers both internal and external parts. In the internal part, it mainly includes establishing and improving relevant management systems to ensure construction quality and improve project efficiency. In the external part, it is mainly responsible for processing and maintaining relevant information to ensure the smooth progress of the project. The focus of the external industry is to formulate the best construction technology plan according to the special circumstances of the construction, and to carry out comprehensive construction technology management, so as to achieve high-quality and efficient construction of construction projects and further enhance the market competitiveness of enterprises. Although many construction companies are constantly improving their skills and equipment, there are still serious technical and management loopholes. In particular, there is no effective management means and a sound management system. Through scientific construction technology management, the internal resources of construction enterprises can be effectively optimized and adjusted, so that they can quickly get on the right track of development. In addition, the implementation of construction technology management can also improve the quality of construction, prevent poor operations of construction personnel, so as to achieve the expected construction effect, and at the same time ensure the construction quality of construction projects. Improve construction efficiency and reduce the overall cost of construction.

3. Insufficient construction technology management

3.1 Relative lack of management system

With the rapid progress of science and technology, the construction management system still has many shortcomings. The main reason is that the system changes slowly and lacks effective scientific management mechanisms and professional managers, which leads to a serious imbalance between management and quality. Quality supervision and management has always been regarded as the core of quality control. However, due to the lack of effective measures and scientific management mechanisms, the safety of urban construction and development is seriously threatened, and may even lead to serious consequences. Although the formulation of the quality management responsibility letter has improved, there are still some areas that need to be improved. For example, the project leader should pay more attention to quality and require strict implementation of the corresponding standards to ensure the effectiveness and sustainability of quality management. If the basic quality control is ignored only for the pursuit of economic benefits and cost reduction, the overall quality of the construction project will be seriously affected.

3.2 Related construction technology is relatively backward

The application of construction technology is crucial to the success of construction projects. Its application can greatly improve the quality of projects and meet the growing needs of society. However, at present, the development of construction technology is still lagging behind and needs to be further improved. Although the scale of the construction industry has continued to expand in recent years, due to the lagging development speed of technology, especially the slow progress of science and technology, many companies can only rely on financial resources to maintain operations, resulting in insufficient investment in technology research and development, and thus unable to achieve the expected quality standards of construction projects. Although the current construction industry has made great progress, it still lacks sufficient motivation to promote its healthy and sustainable development.

3.3 Insufficient management

Improving the management system, cultivating excellent management talents and strengthening management capabilities are the key factors in building an effective construction engineering construction technology management system. Otherwise, even with a perfect system, excellent managers will be of no avail. Therefore, in the process of

implementing the construction plan and technical plan, it is necessary to strengthen supervision and management, and formulate a clear responsibility allocation mechanism to ensure the effective implementation of responsibilities. With the rapid development of today's urban economy, construction projects have become an important part of urban construction. They are large in scale and large in number. Therefore, strengthening the management of construction technology and effectively controlling the construction period and progress are the key to ensuring quality. If only extensive management methods are adopted, the quality cannot be effectively controlled, especially in the construction process, the lack of precise quality control leads to many problems that cannot be discovered in time, and even serious quality problems, which seriously endanger people's lives and property safety and cause huge losses. Therefore, a more refined management method can effectively control quality and ensure people's safety and property safety.

3.4 Imperfect construction technology management and supervision system

The company lacks a sound system for internal supervision, which leads to lax personnel regulations and lack of responsibility, and often leaves things alone due to "relationships". In addition, the cultural level of supervisory and management personnel is different, and there are also differences in their understanding and cognition of work, which makes it impossible to unify the supervision and management work, making the construction technology management and supervision system meaningless and not fully playing its due role.

3.5 Construction enterprises have insufficient management level of engineering technical data

The engineering technology management system is crucial for construction companies. It includes making construction plans, recording construction logs, managing employee information and providing completion acceptance materials. These tasks are all to ensure the quality and safety of the project. However, due to the lack of sufficient attention from relevant personnel, there are currently a large number of missing or incomplete engineering technology data in my country's construction companies, resulting in extremely low management levels, which seriously affects the development and competitiveness of the company.

3.6 Insufficient attention to engineering

Many construction companies, especially small and medium-sized companies, only care about the construction progress, but ignore the technical management of construction. This situation is very common, because without formal technical guidance, the quality of construction cannot be guaranteed. In addition, these companies did not pay enough attention to the construction process, which seriously affected the technical quality and level of the project, resulting in deviations in the construction effect. Due to the lack of sufficient attention to building materials during the construction of some projects, not only did it bury potential risks, safety accidents also occurred frequently, and the efficiency of construction was greatly reduced. The quality of the later construction was also greatly damaged, which damaged the reputation of the company.

4. Optimization measures for construction technology management issues

4.1 Optimizing the management model of construction engineering technology

Due to the inadequacy of technical management of construction projects, many potential risks have been caused. Therefore, in order to solve these problems, it is necessary to carefully study the actual situation of the construction site, formulate a complete management model and operation process according to the relevant construction specifications, and at the same time, combine the characteristics of the enterprise to establish scientific technical management goals and corporate culture. In order to ensure the smooth progress of the construction project, its management must be strictly supervised, and there must be clear specifications for each stage to ensure quality. In addition, an effective assessment system must be established and incorporated into the salary structure as an effective incentive for managers to achieve more scientific and effective technical management of construction projects. Before starting a construction project, the technical management department should explain the technology used to the construction personnel in detail and communicate with relevant units to ensure the quality of the project. In order to ensure the smooth completion of the project, a strict quality supervision and acceptance system should be established to ensure

the smooth implementation of the project. At the same time, through continuous practice and summary, we can also improve the technical management level and ability of our country's construction projects.

4.2 Strengthening the supervision of technical management

At present, the technical management departments of many Chinese construction companies lack a sense of responsibility, which leads to many problems. In order to solve these problems, a special supervisory body should be established to supervise and inspect whether these departments comply with relevant laws, regulations and policies, and strictly implement technical management measures, so as to avoid corruption and abuse of power, ensure the smooth completion of projects and improve quality. In order to ensure the quality and safety of construction projects, various departments should actively exercise their responsibilities, formulate and implement relevant construction technical standards, ensure the orderly development of construction projects, and thus improve the economic and social benefits of projects.

4.3 Improving the level of on-site construction technology management

According to the construction situation reports in recent years, there are many problems with the construction quality in my country, most of which are caused by defects in construction technology. Therefore, during the construction process, it is necessary to strengthen the technical control of the construction site to ensure that the construction is safe, efficient and compliant, and strictly abide by national and local construction standards. At the same time, it is also necessary to combine the construction plan and the unit's construction guidance standards to strengthen the control of construction technology, emphasize the importance of construction technology, and ensure efficient, safe and reliable construction. In order to ensure the smooth completion of the project, we must strive to create a safe and comfortable construction environment so that the project can be implemented more effectively and the technical management capabilities of the construction site can be continuously improved.

4.4 Establishing a technical security assurance system

With the development of the times, China's construction projects are facing higher and higher requirements. This situation not only leads to the complexity of the project, but also makes the project safety management more difficult. With the continuous increase in social needs, many different industries and fields have begun to adopt new technologies to meet these challenges. In order to effectively achieve the goals of technical management, we should clearly define the goals of safety management and establish a sound safety management mechanism and guarantee system. In order to achieve this goal, we should take into account all aspects of the construction project and establish a complete, hierarchical and effective safety management mechanism to ensure that each step of the operation can be implemented in accordance with the prescribed safety measures. In the bidding process, safety management should be taken as a key consideration, the safety management clauses agreed in the contract should be strictly observed, and the construction unit should be required to formulate sound and strict safety management measures to ensure the smooth implementation of the construction process. Through effective technical management, we can greatly improve the quality of construction projects and effectively ensure their safe operation.

4.5 Carry out technical optimization management of the whole process

4.5.1 Optimize early technical management

For the optimization management of construction contracts, special attention should be paid to the construction technology contained therein in order to minimize technical risks, and the responsibilities of each party should be clearly defined to ensure the effective implementation of construction technology. Therefore, when reviewing construction contracts, special attention should be paid to the review of construction technology in order to minimize the occurrence of technical risks. For the prediction of construction technology, all possible situations should be fully considered, and effective measures should be taken, such as formulating and implementing relevant technical standards, standardized processes, quality control, etc., to ensure the smooth completion of construction. In addition, attention should be paid to consultation with contractors to ensure the smooth implementation of construction.

4.5.2 Optimize mid-term technical management

Mid-term construction technology management includes three parts: first, drawing and reviewing drawings, especially for those complex projects involving a large number of construction technologies. The quality of the review

can be improved through communication with experts; second, organizational design, mid-term construction activities should be closely combined with drawings, and full consideration should be given to various resources such as manpower, materials, and mechanical equipment to ensure the accuracy of construction. Focus on the optimization of construction organization design, including improving the quality and efficiency of construction plans. In addition, visa procedures should be completed as soon as possible. Since the time cycle of construction projects is usually long, considering the complexity of the business, the contract may change, but most changes are made verbally, and the use of written documents is relatively rare. Therefore, before signing a technical agreement, a written notice must be made to ensure the validity of the contract.

4.5.3 Optimize the later technical management

The optimization of construction technology management in the later stage should start from three aspects: first, according to the provisions of the contract, the completion data should be comprehensively collected and sorted, and detailed data tables should be prepared to ensure the effectiveness of the acceptance; second, the improvement of acceptance technology should be strengthened, and the level of technical management should be improved through continuous review; finally, the understanding of the law should be strengthened, especially for the claim clauses involved in the contract, which should be strengthened and strictly enforced in order to complete the implementation of the project more effectively. Construction technology management personnel should be particularly cautious to ensure that the project will not cause significant financial losses.

4.6 Adopt scientific application of information technology management and control

Today, we are in a vibrant information age. This change has brought unprecedented opportunities and challenges to construction projects. Therefore, we must effectively integrate information technology into the practice of construction projects so that we can achieve our goals in the most efficient and high-quality way. By using advanced information technology, we can greatly improve the construction management of construction projects, greatly improve the efficiency of construction, and promote the scientific management system. In addition, the effective use of these technologies can also bring a more perfect environment for construction technology management, thereby promoting the improvement of the overall management and control level.

5. Conclusion

In summary, construction technology management is crucial to the quality control of the entire project. It can not only directly affect the overall quality of the project, but also affect every link of the project. Therefore, effective management and control of construction technology is an important basis for ensuring the quality of the project. From the perspective of overall quality control, construction technology management and the overall quality control of the project are inseparable. In order to achieve this goal, we must establish and improve the internal supervision mechanism of the enterprise, and clearly divide various management responsibilities, so as to effectively improve the level of construction technology. Make greater efforts to occupy a place in the fierce market competition, so as to continuously improve its own market competitiveness and ensure the progress and quality of construction projects.

References

- [1] Wang Yadong. Analysis on the key points of construction engineering technology management[J]. China Housing Facilities, 2019(03):78-79.
- [2] Wang Guohua. Key points of construction engineering technology management[J]. Henan Building Materials, 2019(01): 1-2.
- [3] Wei Han. Analysis of key points of construction engineering technology management[J]. Technology and Market, 2019, 26(01):191-192.
- [4] Ma Jia. Analysis of key ideas for optimization measures in technical management of building decoration construction[J]. Housing and Real Estate, 2018(34):139-140.
- [5] Zhang Xuehua. Discussion on optimization measures of construction technology management in the new era[J]. China Housing Facilities, 2018(08):119-120.