Research on the Application of Electronic Information Engineering Technology in Construction Engineering Management

Zheng Qiyong
Guangdong Huayu Digital Intelligence Communication Technology Co., Ltd. Guangzhou, Guangdong, China

Abstract: At present, Chinese society has entered the information age, and electronic information engineering technology has demonstrated its unique role and value in construction engineering management. Using network technology to assist data transmission and communication improves the effect of intelligent control. It not only shows the development direction of emerging industries but also brings profound impacts on traditional fields. In current engineering construction, it is necessary to improve construction quality and manage construction progress, safety, cost, etc. The application of electronic information engineering technology in construction projects still requires continuous innovation and improvement to ensure the vigorous development of China's construction industry.

Keywords: Electronic Information Engineering Technology; Construction; Engineering Management

1. Introduction

Electronic information technology has played an obvious role in promoting the development of the construction industry. Applying this technology in engineering management can not only meet the requirements of China's contemporary construction standards but also avoid existing negative problems, improve project construction quality, and enhance on-site management level. It optimizes management effects in terms of efficiency and quality, improves the operation efficiency of construction projects, enhances the economic benefits of construction projects, and promotes the further development of China's electronic information technology.

2. Electronic Information Engineering Technology

2.1 Overview of Electronic Information Engineering Technology

Electronic information technology is a new technical means formed by a series of equipment such as computers through rapid data collection and processing. With the widespread popularization and development of Internet technology and electronic information engineering technology, electronic information technology has now integrated into all aspects of people's daily life and production. Common phenomena in daily life, including online shopping and communication between people, have undergone earth-shaking changes with the development of electronic information technology. Electronic information technology is also needed in construction projects to make the original complex work more efficient and concise.

2.2 Characteristics of Electronic Information Engineering Technology

In construction engineering management, due to human negligence in the past, obvious mistakes would occur in many aspects such as cost management and construction progress management. However, electronic information technology can directly reduce the negative impacts caused by human factors due to the intuitive nature of the program itself. The use of electronic information technology through computers can achieve high-precision and high-quality construction engineering management[1]. Electronic information technology has the following two characteristics in current use: first, resource sharing; second, precise management. Resource sharing has always been one of the most prominent characteristics of electronic information technology in use. Choosing electronic information technology allows managers to obtain and analyze data in the database anytime and anywhere online. As long as they have relevant permissions, they can apply the data. This way, managers can conduct real-time statistics on the quantity of materials consumed during the entire

construction process and understand material consumption. Relevant staff in the enterprise can retrieve information related to material consumption through the computer database anytime and anywhere when going through procedures, making cost management more clear and transparent. Through the analysis of material consumption, the management effects of construction projects can also achieve management goals from both cost management and construction progress perspectives. Engineering management design involves many contents, which require reasonable consideration of human resources, equipment, technology, cost, etc. Strictly speaking, these management links need to be unified and managed in accordance with standard specifications. This means that managers have relatively high pressure in daily work, and construction omissions are inevitable in work. Choosing electronic information technology can not only ensure the optimization of information management quality but also reduce the work burden of managers[2].

3. Application of Electronic Information Engineering Technology in Construction Engineering Management

3.1 Cost Management

In current construction project construction, construction units will face various problems and situations, resulting in the failure of construction progress to proceed according to the normal project plan. It is very common for construction progress to be delayed due to sudden factors during the construction process. To further improve construction efficiency, we should try to avoid the occurrence of this series of problems and reduce the possible factors affecting construction progress. How to further use electronic information technology to change this situation. As staff, first of all, we can use high-definition cameras to monitor the entire construction site of the construction project anytime and anywhere, try to avoid monitoring blind spots and loopholes, which can not only improve the efficiency of daily work but also avoid potential safety hazards. It allows for comprehensive observation of the construction status of all staff, timely detection and adjustment of problems, effectively avoiding the impacts caused by unsafe factors, and further promoting the improvement of construction progress. At present, it is also necessary to strengthen project construction and do a good job in cost management[3]. In the original construction engineering management, electronic information technology was lacking. Many managers of construction enterprises would hand over cost control to experienced managers. However, pure manual management will have certain problems. This is because humans rely on their own experience and current social development to make relatively unscientific and unreasonable divisions of labor, leading to material waste and even material shortages and other situations. These different situations will also result in poor cost management and control effects in actual engineering management. Current project construction needs to fully use electronic information technology to analyze the overall situation of buildings, including the height, floor area, and internal conditions of buildings, scientifically plan the management status of buildings, and do a good job in reasonable budget management. In cost budget management, the first thing to do is to do a good job in cost data management and build a cost data management system. Both personnel allocation and the adjustment of materials and equipment are important contents of automated management and an ideal state. At present, the use of electronic information engineering technology can achieve efficient cost management. It not only reduces the manpower, material resources, and financial resources consumed in cost management but also avoids the continuous increase in error rates caused by human factors. While reducing project costs, the project application effect can reach the best state.

3.2 Safety Management

A number of data surveys show that safety accidents are a key concern in construction engineering management. 50% of safety accidents in daily construction projects are caused by accidents. Facts have proved that safety is particularly important in construction projects, and safety management should be done well. As construction enterprises, first of all, they should use electronic information engineering technology combined with high-tech means to build a set of safety management systems, refine mobile terminals, and implement comprehensive management. More comprehensive monitoring is needed at the construction site. The person in charge of the construction project and relevant technical personnel are required to understand the project situation in the first place when problems

are found in the project, and strictly control various environments involved in the project construction process to avoid frequent safety accidents. In addition, it can also improve the construction quality of the project. Once any problem occurs during the construction process, the camera can record it. This method can not only provide sufficient evidence for the construction site but also allow for timely evidence collection, analysis, and preservation when facing problems, and solve the corresponding problems according to the facts. It changes the traditional situation of difficult accountability due to lack of records. A complete project construction involves many types of projects and countless quantities. A complete project not only needs to be completed in the early stage but also goes through project planning, cost budgeting, progress confirmation, and other aspects. During the entire construction process, due to the influence of various factors, it is currently necessary to comprehensively optimize and adjust the construction project to avoid secondary construction, repetitive work, repeated modifications of problems, etc. during the construction process. During the construction of the project, managers are required to sort out project data, which is also a relatively complex project. Only by fully and effectively using the computer management system can project managers more conveniently retrieve and file project-related information in the later stage. Choosing electronic information engineering technology allows managers to retrieve files involved in the project system anytime and anywhere, improving work efficiency, making the rhythm of construction enterprises faster, and keeping the progress basically consistent with the construction plan[4].

3.3 Engineering Audit Management

Engineering audit has always been one of the important contents in the financial management of construction projects. In recent years, with the accelerating development of the construction industry, the workload of construction industry audit has increased exponentially, the work difficulty has become higher and higher, and the work complexity has gradually increased. To improve the quality of audit work, it is necessary to use electronic information engineering technology to bring more convenience to audit work. Engineering audit work runs through the entire process of construction projects, including bid winning notices, bill of quantities, drawing joint reviews, and a series of links. Currently, it is necessary to do a good job in project changes and completion settlements and other work. When carrying out audit work, first of all, it is necessary to check whether the use of funds in project construction complies with the relevant regulations of the current construction project. Whether there is an over-budget or hidden fund expenditure when using funds, so as to effectively reduce resource waste. The emergence of electronic information engineering technology can input all projects and relevant data information involved in project construction into the audit management system in the first place. Auditors only need to master relevant methods of information technology to comprehensively analyze and manage data. In the current engineering management system, electronic data can be directly stored in the database, facilitating auditors to export data from the database anytime and anywhere during the audit work. Data mining can also be actively carried out in the network environment, so that the data can be converted into information that auditors can read anytime and anywhere after system processing. With the help of simulation technology, the audit process is reduced, the workload of auditors is reduced, and they can learn content related to electronic information technology to strengthen the subsequent management effect[5].

4. Conclusion

In summary, electronic information engineering technology has been widely used in current construction projects. It has demonstrated a unique role in engineering design, quality, progress, cost, and other management aspects. It not only simplifies work processes but also optimizes work methods, reducing mistakes in project construction and excessive consumption of resources. With the accelerating pace of social development, the development speed of electronic information engineering technology has been getting faster and faster in recent years, and it can also have a broader application in different links of the construction field. In this case, it is also necessary to continuously improve the professional quality of construction staff, make up for their own shortcomings, and provide better services for electronic information technology and construction project construction.

References

[1] Li T. Application of Computer Network

Technology in Electronic Information Engineering Management [J]. Electronic Technology, 2025, 54(07): 236-237.
[2] Zhang Z L. Application of Electronic Information Technology in Computer Engineering Management [J]. Electronic Technology, 2025, 54(05): 424-426.
[3] Yang X C. Application of Electronic Information Technology in Computer Engineering Management [J]. Information Recording Materials, 2024, 25(01): 53-55.
[4] Yang J X. Application of Electronic Information and Intelligent Technology in Construction Engineering [J]. Automation Application, 2023, 64(08): 129-131.
[5] Chen J R. Discussion on the Application of Electronic Information Technology in Construction Engineering Renovation [J]. Urban Construction Theory Research (Electronic Edition), 2023, (06): 70-72.

