Universe Scientific Publishing

REVIEW ARTICLE

Discussion on Key Points of Project Quality Control of High-rise Building

Yi Fang*

Architectural Design and Research Institute of Dalian, Dalian, Liaoning 116021, China

ABSTRACT Construction engineering quality is the life of the construction enterprise, also the premise and inexhaustible motive force for the development of the enterprise. Through the effective control of the quality of high-rise building, scientific and reasonable management measures were developed to promote the improvement of quality of high-rise building, so as to effectively ensure the quality of the project, to ensure the economic benefits of enterprises, and promote the development of the construction industry.

KEYWORDS
High-rise buildings
Quality of project
Key points of control

1. Introduction

High-rise buildings focus lots of science, technology and human resources, which belong to capital intensive and high energy consumption building. Therefore, a good control of high-rise building engineering quality has an important significance for construction enterprises and engineering contractor. This paper starts from the actual situation of high-rise building management, introduces the particularity of high-rise construction engineering quality management, illustrates the key points of good control of high-rise building construction quality, and hopes to maintain the quality of high-rise building.

2. Key points of project quality control of high-rise building

2.1. High-rise building project quality control involves wide range.

High-rise building project management includes management system, construction control, quality control and other aspects, which covers from the management of construction enterprises, construction, service and logistics.

doi: 10.18686/wcj.v4i4.10
Received: September 19, 2015; Accepted: November 7, 2015; Published online: December 28, 2015

*Corresponding author: Architectural Design and Research Institute of Dalian, Dalian, Liaoning 116021, China. E-mail: fang_yi@sina.cn

2.2. Project quality control of high-rise building is difficult.

There is a higher requirement of quality for high-rise building engineering than the ordinary construction engineering. Therefore, there is also an advanced and deeper requirement for management, for example, during the construction of high-rise building, the requirements for the various aspects of concrete are much higher than the ordinary construction requirements. These more stringent requirements increase the difficulty of management [1].

2.3. High-rise building project quality control is inseparable with other work.

In construction quality control of high-rise building, management is increasingly close with daily production, construction and service work. Sometimes even can't clearly distinguish quality control from construction work.

3. Management system of project quality control of high-rise building

3.1. Perfecting organization system through the establishment of quality assurance system

Build high-rise building engineering quality guarantee system in strict accordance with the construction design and related specifications, to establish, improve and perfect the existing organization system against the system. It provides engineering quality with personnel preparation, organizational services, help of work and material support.

3.2. Establishing control system of process flow

Qualified construction must be made strictly according to the process flow. Construction work should be strictly controlled from the aspect of process flow. The process control

system was used to manage the behavior and operation of each relevant department and personnel in the engineering design stage, construction stage and acceptance stage. Therefore, the process system was formed to achieve mutual supervision, mutual service and interaction.

3.3. Establishing improved rewards and punishment system

The project quality of high-rise building was related to the immediate interests of construction and management personnel, so that the total quality management concept was deeply rooted in the hearts of people. The quality analysis and high quality demonstration activities were developed after the construction of each layer was completed. Its function to analyze the influence of quality reason honors the eligible, motivate junior, and arouse the enthusiasm of construction personnel and management personnel [2].

4. Auxiliary system of project quality control of high-rise building

4.1. Strengthening the management of construction materials

First of all, materials and supplies should be purchased from qualified supplier or reputable manufacturer. The purchased materials or equipment must acquire the factory certificate, certificate of material and operating instructions to ensure products were qualified. Second, we shall strengthen the control of raw materials at construction site, the material must have the corresponding data when incoming, the unqualified ones will be returned. Third, the concrete used for underground structure construction were prepared to prevent alkali-aggregate reaction. Finally, the materials were identified, the eligible materials were placed according to classification after incoming, and the identification was made to ease the process of utilization and management [3].

4.2. Establishing a control system of science and technology

Completes the technology transfer system, strictly implement the system of technical disclosure, including the construction organization design disclosure, each construction operation works technical disclosure, raw material sampling and test disclosure. We shall complete disclosure before construction to ensure the engineering quality, reduce unnecessary rework, and eliminate accidents cause by poor quality. Science inspection, measuring and test shall make on site equipment, so that the accuracy of equipment and test was qualified, the calibration and maintenance of equipment was organized timely.

4.3. Establishing on-the-job training and continuing education system

First of all, on-the-job training and planned continuing education training were performed according to the characteristics of engineering, construction difficulties and the specific situation of construction site. Second, before seasonal construction, the project manager will train tester, documenter and other technical personnel to ensure smooth process of seasonal construction. Finally, the continuing education training was organized for construction personnel and management personnel in the spare time, in order to really improve them from the quality.

5. Control of construction process of high-rise building project quality

5.1. Carrying out the "three inspection system"

Self-checking: Organized after completing construction. The handover inspection: Made on the completed process by master after completion of self-inspection. Special inspection: Made on the process completed by group by inspector of project management department. After completion of the "three inspection", the foreman will fill out inspection evaluation form, full-time inspectors will approve it. Finally, engineering supervision or party a will conduct verification.

5.2. The reinforced concrete structure construction will conform to the system of two applications

Concrete casting applications and ripping applications was submitted by the head of type of work and approved by technical director of management department. After commercial concrete are arrived, check all the information, test concrete slump and fill in the commercial concrete monitoring records, including the concrete's production time, present time, pouring time, slump, etc.

5.3. Quality control of each sub item and division engineering

According to each sub item and division engineering and final quality inspection, the unqualified project should be retested after treated according to relevant control process, whereas the qualified can be released. Pays special attention to the disclosure, check and acceptance, implement supervision of quality of whole process, make each working procedure are under control [4].

5.4. Quality control of special process

Special engineering construction process include basement waterproofing, stripping rib rolling straight thread connection, room waterproofing, roof waterproofing, steel structure, prestressed construction. The post responsibility system for quality and the special inspection were implemented. The quality inspector is responsible for the process inspection and record. The operating personnel of special process must hold relevant certificates.

5.5. Control of "four new" project

The new process, new technology, new material and new

equipment should be controlled. These four new projects can be implemented through adequate technical preparation and approval by chief engineer.

6. Construction test management work

First of all, reputable test institutions whose qualification meets the requirements will be selected. Second, actively and timely prepare for construction test, finish inspection of steel and raw material, mortar ratio application, etc. Third, actively cooperate with the inspection of supervision and inspection department, earnestly conduct the witness sampling work of construction test in a timely manner. Finally, the retention and management work of the concrete and mortar test block were made, and we shall complete the concrete form release and test [5].

7. Conclusion

High-rise building project quality control is an important work. Since our high building build in a short time, the quality control work still has a lot of issues needed to be further discussed and concerns. We believe that as long as we hold each quality control system, implement management work, we will do a good job of high-rise building project quality control.

References

1. Wei, X. G., & Gong, S. R. (2009). Discussion on the project construction management. *Small and Medium-Sized Enterprise Management and Science and Technology (the Ten-Day), 7,* 55—58.
2. Ma, Y. X. (2008). Countermeasures for improving the management quality of engineering project. *Small and Medium-Sized Enterprise Management and Science and Technology (the First Half of Month), 03*, 172—177.
3. Li, G. G. (2007). Large public construction equipment installation project control. *Information of China Construction, 15*, 435—436.
4. Zhang, S. H. (2000). Several problems of construction equipment installation project construction. *Railway Construction Technology, 03*, 84—87.
5. Jie, B. K. (2009). Control research of influence factor of construction project quality. *Business Culture (Academic Version), 10*, 312—315.