

# A Comparative Study of Chinese and Foreign Architectural Engineering Management Education Systems

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**Abstract:** Western developed countries strictly carry out quality supervision and inspection of the construction process. In construction regulations in some countries, the relevant government departments are required to inspect the construction site of a construction project at a specific time. The quality management education of project construction in the entire process in the developed countries has ensured the quality of construction projects, strict management of construction projects, therefore, the quality of construction projects is high, and some quality management education practices are worthy of research and study.

## 1. Introduction

Develop a unified quality assurance and quality control plan, but also include subcontractors, material suppliers, manufacturers, and prefabricated parts manufacturers. During the construction process, the owner representative or the design engineer appointed by the owner performs the quality inspection in accordance with the FIDIC contract conditions.

## 2. Status Quo of Engineering Quality Management Education in Foreign Construction Markets

### 2.1 American quality management education for construction projects.

At the planning stage, U.S. government agencies require owners to report on the natural, economic, and social impacts of the project. The government regulatory agency approves the report. In the design stage, the regulatory agency approves work safety on the site, employment of ethnic minorities, use and disposal of hazardous materials, and public safety and health in accordance with regulations. During the construction of the project, representatives of the U.S. federal, state, and local governments are required to inspect or be assigned to the site. These observers and inspectors are responsible for determining whether the site complies with regulations and laws and whether they comply with the rules and regulations of the relevant agencies. The purpose is to protect public health, safety and the environment [1]. American engineering management quality assessment formula is as follows.

$$F_i = a_{1i}X_1 + a_{2i}X_2 + \dots + a_{pi}X_p \quad (1)$$

### 2.2 France's quality management education for construction projects.

In order to improve the quality of construction projects, the French government has used legislative and economic measures to encourage construction companies to strengthen quality management education. In terms of legislation, management, testing, etc., they have gradually formed a relatively complete system, so that the French construction industry has a certain degree of competitiveness in the international market. France has specified standards (NF) and specifications (DTU) for various materials and products. France has obtained "NF" standards for many building materials and component products. Due to the good quality of construction materials, it laid the foundation for the quality of construction projects. French technical documents include "NF" (French standard) and "DTU" (French specification). All units involved in project construction

activities (owners, general contractors, design, construction, etc.) must be insured by insurance companies [2]. The project management quality control process is as follows.

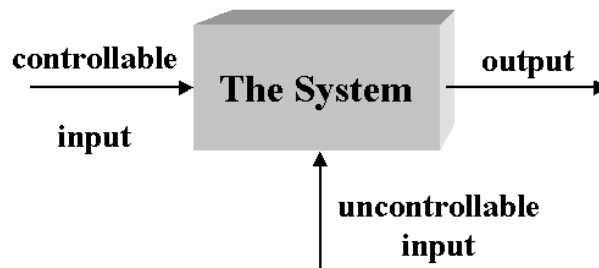


Fig.1 Project management quality control process

### 3. China's Engineering Quality Management Education for Construction Project

#### 3.1 Development of China's quality management education system for construction project.

The foundation of the old Chinese construction industry is very thin, the construction level is low, and the level of engineering quality management education is correspondingly low. After the founding of New China, before 1966, China implemented a planned economic system to follow the Soviet Union's economic development model to organize production. China's construction project quality management education implementation of a single construction unit internal quality inspection system. In the implementation of project construction, the quality of construction projects shall be checked, assessed, self-controlled and managed by the internal quality management education department of the construction enterprise. From 1958 to 1962, during the second five-year plan period, the State Construction and Construction Department proposed to the Central Committee that the quality supervision and inspection of the project should be changed to an independent quality inspection and management agency responsible for self-control. The construction unit is responsible for The quality supervision and inspection based on acceptance of concealed works has, to a certain extent, formed a situation in which the construction unit and the construction company mutually restrict and jointly control. From 1961 to 1965, in the phase of adjustment of the national economy, the Ministry of Construction and Industry strengthened its leadership over project quality supervision and management. In 1963, it established the "Regulations for the Supervision of Construction and Installation Engineering Technology", which requires that construction and installation enterprises must establish independent technical supervision. Institutions, strengthen the quality management education throughout the construction process. During the ten years of turmoil from 1967 to 1976, all regulations, systems, and regulations were all criticized as "management, card, and pressure" and the quality of the project was generally reduced. This situation was not gradually resolved until the end of the 1970s. Improved. Since the 1980s, a series of major changes have taken place in the construction of construction projects. In September 1984, the State Council issued the Provisional Regulations on Several Issues Concerning the Reform of the Construction Industry and Infrastructure Management System, and decided to implement a project quality supervision system in China. Then the Ministry of State Urban and Rural Development and the Ministry of Environmental Protection successively issued normative documents such as the "Construction Project Quality Supervision Regulations" and the "Provisional Regulations on the Quality Supervision of Construction Projects", specifying the scope of work, supervision procedures, and the nature of supervision of the project quality supervision agencies. The supervision costs and agency staffing have initially constituted China's current government project quality supervision system. With the continuous deepening of reform and the development of commodity economy, the construction project supervision system began to appear in the late 1980s[3].

#### 3.2 Achievements of China's quality management education system for construction project.

Since the early 1980s, China began to implement a government supervision and management

system for the quality of construction projects. Over the past 20 years, the construction quality supervision and management institutions across the country have been at various levels of government and construction administrative authorities. Under the leadership of the party, strict supervision and management functions have been performed, and the role of the government in supervising and managing project quality has been better played, and the quality of construction projects across the country has been continuously improved. With the continuous development of the engineering quality supervision and management business, the quality supervision and management regulations for construction projects have been gradually improved. The quality supervision and management of construction projects in China has entered a legal, standardized and proceduralized track. Under the initiation of national laws and regulations such as the "Construction Law of the People's Republic of China" and the "Regulations on Quality Supervision of Construction Projects", the Ministry of Construction and relevant departments have issued "National Regulations on Quality Inspection of Construction Projects" and other national normative documents and departmental regulations. The provinces, municipalities, and professional departments have also formulated 78 quality supervision and management laws and regulations, including local and professional regulations and normative documents and detailed implementation rules. Quality supervision and management agencies at all levels have also established various types of supervisory procedures, rules, and systems that have the core of technical responsibility. The supervision and management system of laws and regulations has basically taken shape, ensuring that government supervision and management develop on the track of the quality of the rule of law.

Under the care and support of the government's engineering quality supervision and management organizations at all levels of construction administrative departments, under the joint efforts of the supervision and management workers, quality supervision has grown from scratch, from small to large, never been recognized by people to win the social Recognition is becoming the "mainstay" of governance construction project quality. Provincial, municipal and county engineering quality supervision and management agencies have been formed. The engineering quality supervision and management agencies have spread all over the country or in various specialties, forming a fairly large-scale technology-intensive supervision team.

#### **4. Summary**

Through the above-mentioned understanding and analysis of the quality management education of construction projects in developed countries and their practices, we have discovered the inadequacies in the operation of China's construction project quality management education system and demonstrated the urgency and importance of regulating the quality management education in China's construction projects. Sex. The developed countries attach great importance to the legislative work of building laws and regulations, strengthen the quality management education of construction projects through legal means, and improve the quality of construction projects. Western developed countries generally have relatively complete systems of laws and regulations. These laws and regulations can be implemented more strictly. The government construction project management agency participates in the supervision and inspection of the project at various stages of project construction, and supervises the project parties to abide by the relevant laws and regulations, thereby effectively promoting the planning, design and construction quality.

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