Research Paper Engineering

Necessity of Quality Control in Construction Industry

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ABSTRACT

Quality Management is a managerial approach that views quality to be a result of integrating all organizational activities e.g. engineering, manufacturing, marketing and administration work. It aims broadly at maintaining and improving quality standards and to achieve customer satisfaction.

Quality is the symbol of human civilization, and with the progress of human civilization, quality control will play an incomparable role in the business. It can be said that if there is no quality control, there is no economic benefit.

Quality control is responsible for transforming quality planning and quality improvement outcomes into daily routine work. Quality control can be implemented by systematically going around the plan. Plan, Do, Check, Act (PDCA) control cycle, with which organisation may achieve continuous small steps of improvement.

KEYWORDS Quality Control System, Necessity, Survey

INTRODUCTION:

Construction processes are characterized by a number of elements which differentiate it from other known businesses like manufacturing and process industry. These differences implied that quality control and assurance procedures applied in manufacturing industry cannot be readily applied in construction where there are higher degrees of uniqueness in each and every project/product. Hence, this paper assessed the effects of quality control in construction industry.

When focusing on quality and product effectiveness, an adequate definition regarding construction is "fitness for use". That is, quality determined by the customers. This affirmed the observation noted by Landin (2000) that quality has become an important means of competition in the world market and a strategic weapon in the fight for market shares, thereby improving profitability.

As the market economy has developed, market competition has had an important role of the law of survival of the fittest in every corner. The pressure of construction enterprises from the market and competitors will be greater and greater, as well as the increasing requirements of customers of quality assurance, which require the construction companies to improve their internal quality, strengthen management, in particular, pay close attention to quality control.

PRESENT SCENARIO:

Today achieving customer satisfaction is most important objective of the organizations and quality management (QM) is the most effective approach to achieve this objective. Indian organizations have come to understand that, in order to stay competitive, an improvement in organizational quality performance is necessary. Thus, a body of organizations started to implement quality management (QM) in order to generate a competitive advantage. In the wake of globalization and liberalization of the economy, Indian companies are facing intense competition from the companies all over the world. Indian companies have to compete with multinationals both at domestic as well as International market. So the product quality has emerged as a key issue in most of the Indian manufacturing industry. Indian companies are viewing ISO 9000 as the starting point for total quality management since it requires setting up of and implementing a management system that ensures consistent products and services at a particular level of quality. By the end of the year 2013, 37,958 and 3,281 organizations in India had adopted ISO 9001 and ISO 14001 respectively. However, the vast literature on QM is derived from the experiences in the industrialized world. Several studies on QM have been conducted, first in developed countries (e.g., United Kingdom, Australia, Japan, and Canada) and later in developing countries (e.g., Taiwan, China, India, Malaysia, Ghana, and Saudi Arabia). Until recently, very few studies examined QM in Indian context. There has been a recent explosion in literature on QM and related issues, particularly in Indian context (Kakkar and Narag, 2007; Khanna, 2009; Kumar et al., 2009; Mahanti and Antony, 2009; Bhat and Jagadeesh, 2009; Prasad and Tata, 2009). As part of a wider study to investigate the TQM implementation in automotive and other manufacturing organizations in India and its relationship with performance, the present study aims to explore the practices adopted by organizations in India under various TQM critical success factors.

NECESSITY OF QUALITY CONTROL IN CONSTRUCTION INDUSTRY:

Quality control system is important in the engineering and construction industry because of the risk involved in any project. Quality control system is nothing but the backbone of safe construction industry. The risk involved in not complet-

ing the project on time is high, because many external factors will affect the performance of the project. It is vital that the built-quality control system is develop to avoid any in-efficiency that could result in poor quality of products and service being delivered to the customer. It is necessary to transpose and translate the principles, practices and techniques used for quality control in manufacturing to construction. Quality control techniques have been used extensively and beneficially in the areas of manufacturing and industrial engineering to control process and prevent defects before they happen, ultimately saving millions of dollars. It is necessary to analyze and improve constructability of project and help to increase speed of construction. It reduces impact on environment.

Quality control system is also used to use right material at right place by testing them and it improve the safety. It reduces the rework, claims and also reduces the change orders. Due to this we get higher productivity.

The waste of workforce, machinery, materials and other costs can be avoided, as well as the schedule delays. It has been found out that the scientific quality management system can ensure the rational allocation of project resources, and make the project run on the preconcert quality objectives, so as to achieve the effect of project quality control.

The consciousness of quality control in the phase of project quality plan should be strengthened, and the focus on the inspection after completion should be transferred to the planning and process control of pre-construction.

Hence it is clear that quality control system can improve the quality, safety of the construction industry and customer satisfaction.



fig. Quality control management system

CASE STUDY:
We have worked in construction sector in pune city and carried out some test on materials to check the quality of materials used in construction work and also the quality of building as a whole.

Questionnaire survey:
Through mails and by direct communications we have circulated 30 questionnaire to contractors, executive engineers and builders of different construction industries and we got responses from 20 of them which are as follows:

Quality: Quality of the construction is the most important issue in a construction industry. 96% think that quality control system is required and remaining are not aware.

Barriers: 45% people said that problems are occurred due to lack of skilled workers. 50% said that problems are occurred due to lack of proper equipments and faulty product. 39% said that problems are occurred due to lack of supervision and working with new people.

Improvement: 67% of the people said that by organizing the training programs and educating the people, quality can be achieved in construction industry. 40% said that quality can improved by testing or measurement of work and product.

Manpower: If sufficient manpower is not available at construction site, workload as well as duration of the project increases and hence quality affects.

Funds: 35% said that availability of sufficient funds, result into use of advanced techniques and good materials.

Material quality: 90% said that construction material is the most important factor which affect the quality.

CONCLUSION:
The construction industry suffers from several problems such as low productivity, safety and inadequate quality. Quality control can be a solution to these problems. This study investigated the necessity and benefits to the extensive implementation of quality control in the construction industry through a questionnaire survey.

From the case study, we have got the conclusion, which clearly indicates that quality control system in the construction industry is not just a thing to say but we have to implement it practically on site and how much benefits that quality control system can bring to your construction business (improve business quality, increase customer satisfaction, reduce cost, save time, and much more).

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