Improvement of Quality Control System in Asian Region.

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It is said that a professionals in construction field should possess a systematic body of knowledge, skills, and theory obtained through education, training, and experience and should prove these qualifications. Although quality of product around world has a same goal to achieve. Each country has developed a unique system within its historical, cultural, climatically and regional contexts reflecting its socio- economic factors while respecting the unique traditions and differences of other countries in various customs.

The WTO regime that was created by an arrangement for the liberalization of services trade subsequently provided momentum for a detailed discussion of the free trade of services. It requires development of standard quality control system in place with as the qualification of professionals for reciprocal recognition.

What is quality? The term of “quality” is defined as conformation to the predetermined requirement or standard of performance which may simple or complex to fitness for purpose. It may be stated in terms of the end result required or as a detailed description of what is to be done. As we look back at construction job site that had formal quality control systems. We see effectiveness at two ends of the spectrum. On the one hand, we have experienced strong quality control requirement from the beginning to end up with cost effective, highly successful record of performance, owner well satisfied. On the other hand, we found numerous failures in implementation which left owners and project participants with a genuine misunderstanding of quality control program and how to effectively implement them.

We have learned some fundamental lessons as to what constitutes effective quality and what renders a program totally ineffective. There are many factors that affect how to use and apply such quality measurement tools. These factors include contractual relationships between owner and professionals, labor/worker relationship in design and construction, technical aspects, project procedures, facility operating reliability, etc.

Regarding key elements of quality are:
Owner: It is more likely assured when owner recognize up front the importance of quality in development of his requirements as to functional adequacy, completion on schedule and within allocated fund, life cycle costs, and operation and maintenance for owner's best benefit. Owner conceives a fundamental concept through pure research in preparation of preliminary design.

Designer: Design professionals should provide well defined scope of work with clear descriptions for required work, budget to assemble and use qualified, trained and experienced professionals, and contract to perform necessary work at a fair fee with adequate time allowance.

Constructor: Constructor should provide the service of contract plans, specifications, and other documents prepared in sufficient detail to permit the constructor to procure materials, skilled labor to be adequate to perform the given works, and equipments

Public: Meeting the requirements of public safety and health, environmental consideration, protection of infrastructures and confirmation of regulatory codes and policies.

Quality in the constructed project is also characterized by complete and open communication among the all project parties; selection of qualified organizations and personnel by the owner for all phase of the project; rapid resolution of conflicts and disagreements. Most of constructions projects are developed by a team consist of as above. There are many other professionals who play a significant but more limited role within the overall project. The owner, as the originator of a project, is responsible for leading and directing the project team. When three member of team are competent and work together, quality in the constructed project is likely to be achieved. A successful project begins with the owner. The broad responsibilities of the owner on construction project include two major factors that contribute to a quality project. The first is the development, by the owner, of complete and realistic requirements and objectives for the project. The second factor is to provide a thorough understanding to other team members of the role and responsibilities of the owner. The key to fulfilling an owner's objectives and expectations is knowing and understanding what they are.

A relationship where the design professional is working with the owner as an advisor on all aspects affecting design is beneficial to both the designer and owner, and is recommended. Selecting the proper design professional is critical in achieving quality in the constructed project. No two professional design organizations have the same training, experience, capability, or culture. It is necessary for the owner to carefully structure and administer a selection procedure which secures a proper fit between the abilities of the design professional and the project's requirements. The recommended selection procedure requires design professionals to submit statements of interest and qualifications in response to the owner's invitation and statement of requirements.

It is important that both the owner and design professional begin the design phase of a project with attitudes requiring excellence in performance, rather than lowest possible design costs. Project failures can be expected if minimum design cost is the primary basis for selecting the design professional. While most projects for design professionals involve more than one professional discipline. The goal of each multidiscipline design team is to provide a functional, durable facility that meets the requirements of the owner. Each discipline group must be aware that the safety of the user, the public, and the environments is of primary importance.

Key members of the design team are the lead members of each discipline. They are responsible to the design professional for producing the work, adhering to the project's requirements, technical accuracy, quality in the design, and managing resources to meet its schedule and budget. They are also jointly responsible to coordinate their work with the work undertaken by the members of other disciplines.

A peer review is the highest level of action to improve quality in design of constructed projects. An organizational peer review examines the policies and practices of a design office across many projects and activities. Peer reviews are requested as added safe-guards for the public, the owner, and the design professional. All of those groups who are familiar with peer reviews have encouraged their use by large of small organizations and on large or small projects.

Regarding the construction team, the primary goal of the construction team is to build a quality project within budget, on time, and with little or no litigation. There are several different contractual arrangements or project-delivery systems which define the construction team.

They include the traditional owner, design professional and constructor arrangement and a variety of construction management and turn-key systems, as well as owner construction team. All members of a quality oriented construction team have a serious interest in team performance. Some members, however, are not directly involved in daily operations. Financial organizations, insurance companies and surety representatives, utilities, suppliers, government officials, attorneys, and the ultimate users are, to different degrees, interested in progress and play some role in producing the final project.

With proper training and an awareness of its power and limitations, a sophisticated computer system or program can be a valuable tool to the designers and constructor. Specific computer programs can perform many time consuming, administrative functions quickly and efficiently, thus making them more efficient. Organizational efficiency can be fine-tuned, job estimating can be made more accurate, and out of sequence work curtailed. Computers can also improve communications and teamwork within the project team by allowing access to project information, allowing the project team to function with greater efficiency.

Start-up is a transitional phase in the overall design and construction process that focuses on preparing a facility or project for occupancy and use and testing the equipment and systems in that facility. Quality in the start-up phase of a project is achieved through the use of skilled personnel, adequate planning, suitable tools and procedures, proper definitions of job requirements, and appropriate supervision and technical direction. Quality is verified through surveillance, inspection, testing, checking, and review of work activities and documentation. Quality verification is the responsibility of the organization or group performing the activity. Quality verification must be performed by individuals who are not directly responsible for performing the work activity.

Project team members cooperate to produce project which can be reliably, safely, and efficiently operated and maintained. These important activities are the final steps in providing a quality construction project. Emphasis is on including O&M considerations early in the project design. The owner may appoint an operations coordinator whose job includes facilitating communication among the team members regarding start-up and initial operation, as well as long-term operations and maintenance. Active participation and cooperation by the owner, design professional, and constructor in considering operation and maintenance needs for a proposed or expanded facility will result in a more efficient and successful project.
Quality control system includes checking and reviewing design and construction related activities. Effective QC reduces the possibility of changes, mistakes, and omissions, which in turn results in fewer conflicts and disputes.

Korea had experienced by major construction failure such as Sampoong Department collapse and Sungsu bridge failure resulted in intensive efforts to formulate a quality control system during construction. Also we are faced with following challenges that need to be resolved for improvement of quality control system for design in the near future:

First, we plan to establish an independent body to be assured quality control system for design comprised of practicing engineers. In due process, the systems and experiences of countries in quality control system accreditation will be of great help in formulating our own programs.

Second, there is a problem as to how the quality control body should assert its authority. In other words, there is concern over how the quality control body will acquire enough authority such that all other institutions, including interrelated agencies like owner, professionals and constructor, will accept its accreditation results without objections. There may be several ways to enable the quality control system accreditation to take root as early as possible, such as the adoption of stricter qualification requirements for taking the special licensing examination. However, numerous challenges are expected as the examination system should be implemented by the government, calling for such follow-up measures as the revision of relevant laws, the transfer of testing authority to a non-governmental organization, and the administrative and financial burden.

Throughout these changes are pursued for equivalency in quality control system as a prerequisite for mutual recognition of professionals and reciprocity as a result of the imposed liberalization of services trade.

I would like to caution here that quality control system “Equivalency” should not be confused with “Homogeneity” Although equivalency is required as a means of ensuring an even level in quality control system in countries worldwide, in order to recognize special expertise on a reciprocal basis without imposing other restrictions, each country’s quality control system traditionally developed within its own historical and cultural context should be respected and acknowledged.

It is not desirable if conforming to the international standards translates into a skewed move towards the uniformity of our quality control system. We, in particular, should uphold and develop the time-honored, magnificent “Asian values” handed down from ancient times, despite the swift changes in the professional environment in the wake of globalization. It is also part of the responsibility of an architect to preserve and enhance our national cultural heritage and natural environment. Against such backdrop, the “This Forum” is devoted while quality of the completed project or construction judged by how well it serve society, physically, economically, functionally, emotionally, and environmentally.

Thank you very much,