THE HONG KONG HOUSING AUTHORITY

Memorandum for the Building Committee

Review of Implementation of ISO 9001 in Housing Department

PURPOSE

This paper is to inform Members the position of ISO 9001 implementing in Housing Department.

BACKGROUND

2. Before the 1990s, control of quality in the construction industry in Hong Kong was largely dependent on inspections against the requirements of contract documents and specifications. The drawback of this approach became apparent when the quality of public housing caused public concern in the late 1980s. This prompted the Authority to adopt a different approach, in which quality is built in through proper and comprehensive management, commonly known as a Quality Assurance System.

3. In line with the Quality Assurance Campaign launched by the Government, and with the establishment of the Hong Kong Quality Assurance Agency (HKQAA) in 1990, the Authority in the same year decided that by 1993, the then Construction Branch (now evolved into Development & Construction Branch and the maintenance portion of Management Branch) of the Housing Department would operate a quality assurance system that complied with and was certified to the ISO 9001 Standard. The reasons for the Construction Branch to be so certified were threefold -
(a) to take the lead in fostering a quality assurance culture in the construction industry;

(b) studies carried out in the UK revealed that 50% of the building failures were due to design related faults, indicating that quality control should also be tightened over the design of buildings; and

(c) threat imposed by the massive 'brain drain' together with the extensive Port and Airport projects in the early 90's on the adequacy of professional resources and standard of service.

4. The Construction Branch subsequently obtained its ISO 9001 certification from HKQAA in August 1993, after which HKQAA would continue to conduct surveillance visits twice a year to re-assess its Quality Assurance System.

5. The initiative was also extended to require contractors on the Housing Authority Lists to be similarly certified. Architectural, engineering and associated consultants were later also required to obtain ISO 9001 certification by April 1996 under the initiatives of the then Works Branch of the Government.

6. Some Members of the Committee recently raised concern on the effectiveness of the system and certification after implementation. The Department has accordingly reviewed the position and a report is given in the ensuing paragraphs.

ESSENCE OF ISO 9001

7. ISO 9001 (Model for quality assurance in design, development, production, installation and servicing) is a standard which outlines what a good management system should embrace. It consists of twenty elements for good management practices drawn from the experience of a group of entrepreneurs world-wide. Annex gives a summary of ISO 9001.
8. In essence, ISO9001 requires an organisation to plan and organise systematically their business activities into a formal, documented and verifiable system, such that staff know what are required and that every process is executed as planned. In addition, there is an inspection and audit system to ensure the documented activities are carried out. Conformance with the Standard therefore provides confidence that products or services are turned out consistently according to the desired requirements and are 'right first time' with minimum defects.

9. The Standard does not give detailed descriptions on how a quality assurance system should work, but rather, just provides a generic framework that is applicable to all industrial and service sectors. The extent to which the system is set up, such as the complexity of the system, degree of control, documentation, inspections, and records to be maintained, is entirely up to the user organisations to determine according to their business nature and needs. The Standard does not preclude professionalism and training, nor is it meant to replace them with rigid procedures.

10. The Standard helps to minimise defects but it should be recognised that like application of any preventive system or measure, a state of 'zero defect' is practically impossible to achieve. Although the Standard cannot turn things perfect overnight, it however provides a means for continuous improvement towards this goal through mechanisms in the Standard, like management reviews (4.1), audit (4.17), feedback, customer complaints and corrective and preventive actions (4.14).

11. As seen from Annex, ISO 9001 is all about good management practices, which a quality conscious organization would naturally practise to assure the quality of its products or services. For these organizations, getting certification merely proves that such a basic management system is in place. On the other hand, poorly organized companies seeking ISO certification could take the opportunity to tidy up their systems, hence making immediate improvements after certification. The extent of success in applying ISO 9001 to assure quality depends on how an organisation interprets and implements the requirements of the Standard.
IMPLEMENTATION OF ISO 9001 IN HOUSING DEPARTMENT

12. Like any well established organisations, the Construction Branch undoubtedly had a proper management system and documented procedures in place to ensure coordination, consistency, control and quality even before the implementation of ISO 9001.

13. To prepare for the certification in 1993, the Construction Branch had reviewed the existing management system, identified weaknesses against the ISO Standard and made enhancements where necessary. New systems such as management reviews, design control, and internal audits were introduced. As far as documented procedures were concerned, existing work instructions were reviewed, redrafted and consolidated into new, structured documents such as manuals, technical guides and instructions. To implement the Standard, a team of senior professional and professional staff was established/redeployed at that time to undertake the tasks necessary and coordinate the related activities.

14. Being a pioneer to implement the Standard in the construction industry at that time and because of unclear interpretation of the requirements in the Standard in its 1984 edition, the Department did at the initial implementation stage introduce some excessive procedures, paperwork, records and a set of complex manuals in order to ensure that it would satisfy the certification standard of HKQAA. On-going improvements, however, were continuously carried out based on the results of internal audits, feedback and management or business reviews.

15. From 1996, a series of simplification and streamlining exercises were conducted to eliminate the excessive procedures and paperwork, and to simplify the documentation system. Changes and improvements were also made to the audit system for the work of both in-house teams and consultants in focusing the auditing efforts on activities that were directly related to building quality, such as on design, site inspection and compliance with technical standards. On completion of these tasks, the staff resources have also been progressively reduced, with one senior professional group now in Development & Construction Branch and one in Management Branch responsible for maintaining and improving the system.

IMPLEMENTATION OF ISO 9001/2 IN CONTRACTORS AND CONSULTANTS
16. The construction industry is characterized by multi-layer of subcontracting. Before implementation of the Standard, except for a few quality conscious ones, most contractors predominantly operated on a 'words by mouth' system. Processes were poorly controlled and quality largely relied on the self-discipline of subcontractors and workers. Documented records were used for progress monitoring, cost control and payment purposes rather than for quality concern. With the implementation of ISO 9001/2, a systematic quality assurance approach of proper process control and documented system for quality began to evolve amongst the contractors.

17. According to the Standard, contractors are required to organise and to inspect their own work on completion in accordance with their own documented system. The documented quality and inspection records provide valuable information for defects finding and for operational improvements. They also provide traceable proof for fraudulent acts by opportunistic contractors and individuals.

18. Professional services delivered by consultants are similar to those provided by the Department, the changes and benefits to consultants are thus similar to what the Department has experienced in implementing the Standard.

CONCLUSION

19. Although the effectiveness can hardly be measured quantitatively, it is apparent that implementation of the Standard results in the following benefits and improvements -

(a) the quality management framework helps to prevent and reduce defects and to make improvements;

(b) documented procedures result in better organisation and coordination of work;

(c) control of records provides traceability and identifies accountability;
(d) continuous surveillance assessments on contractors and consultants by the certifying body compel them to upkeep their systems in quality assurance; and

(e) the Standard drives a continuous and positive change in the management style and culture of contractors.

20. As seen from the above analysis, the requirements stated in the Standard are very fundamental, any organizations striving for quality and improvements should practise such basic management techniques irrespective of whether they are seeking independent certification or not. For this reason, there is no significant difference to our management systems and staff resources requirements whether we opt to maintain or remove our certification.

21. ISO 9001 certification of the Department symbolizes its commitment towards quality. On the other hand, enforcement of similar requirements on our contractors and consultants makes clear to the industry our determination for quality works. The Department therefore sees a definite advantage in maintaining the current policy on ISO 9001 certification.

INFORMATION

22. This paper is issued for Members' information.

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