

(III) QUALITY PRODUCT & PRODUCTIVITY

27. With the public concerns on the building quality, enhancing the quality of our products and services to our customers is our top priority. Various measures to achieve this objective, together with a comprehensive package of reforms to safeguard the quality of our piling works have been launched. Moreover, with the rising expectation on the built environment, we have launched a number of measures to enhance the design quality, environmental friendliness, buildability and construction efficiency of public housing. Initiatives to achieve "Quality Product and Productivity" embrace the following pillars of reform -

- Pillar One - Providing Quality Services and Products to Customers
- Pillar Two - Revamping the Piling Process
- Pillar Eleven - Improving Productivity

Pillar One - Providing Quality Services and Products to Customers

28. We have successfully launched all the four recommendations to provide quality products and strengthen customer services under this pillar. These include :-

(a) **Provision of a 10-year structural safety guarantee to all new and existing HOS / PSPS developments from the date of completion**

The Department has set up a Structural Guarantee Action Group to oversee and monitor the effectiveness of implementation. Up to end January 2002, the Department has received a cumulative total of 2,736 referrals. Of these, the Department had made appointment with owners on 2,542 cases and completed inspection in 2,468 cases. About 30% of the inspected cases were covered and actionable under the guarantee. We have reviewed the implementation of structural guarantee and reported to Home Ownership Committee and Building Committee in September

2001 (Paper no. BC 116/2001 HOC 75/2001 QH 17/2001 refers). It is not envisaged the existing HOS stock has extensive structural problems.

(b) **Enhanced customer services**

We have established an in-take hotline to strengthen communication with tenants and owners, and set up the Customer Service Teams to handle defects speedily on all new HOS courts and two rental estates selected on a trial basis. In order to evaluate the effectiveness of the enhanced services, customer satisfaction surveys have been conducted in the first batch of HOS courts. Survey findings have revealed a high satisfaction level on these enhanced customer services.

(c) **Lengthening the Defects Liability Period from one year to two years**

For building tenders returned from March 2000 onwards, we have lengthened the Defects Liability Period from one year to two years. Besides, the retention money has been increased from 1 % to 2% of the total contract sum to induce contractors to provide better services after project completion. We are now examining the feasibility of extending the DLP to two and a half years under the building contracts for HOS projects.

(d) **Outsourcing some of the final flat inspection work to consultants**

To cope with the completion of large number of flats, we have outsourced part of the final flat inspection work to consultants in order to maintain a consistent handover standard during the production peak. Four consultants were engaged to handle the watertightness tests and final inspection of about 37,000 flats, and such inspection works have all been completed in October 2001.

Pillar Two - Revamping the Piling Process

29. We have taken resolute actions to introduce a series of measures to safeguard the quality of piling works, incorporating all the recommendations from the Investigation Panels on Tin Chung Court and Yuen Chau Kok. We have developed the **piling reform** package comprises eight key measures as follows (Paper no. BC 84/2000, QH 05/2000 refers) –

(a) **Strengthening HA's site inspection**

To strengthen site inspection, we have enhanced professional input, staff deployment for site inspectorate team, training and surveillance. We have deployed resident engineers to all active piling sites after April 2000, underpinned by engineering inspectorate and further strengthened with enhanced geotechnical engineering input, in line with Buildings Department's (BD) new requirements on Quality Supervision promulgated in June 2000.

(b) **Strengthening Risk Management**

To address the high technical risks under the design-and-build approach and to achieve more pragmatic risk sharing with contractors, we have strengthened risk management by conducting more comprehensive geotechnical investigation^{Note2}, widening the use of engineer's design for piling contracts^{Note3} and reducing the rate of liquidated damages.

(c) **Strengthening acceptance requirements of piling works**

To increase the objectivity of final acceptance tests, we have strengthened our acceptance requirements of piling works by revising our specification and ensuring that

Note2 The median value of pre-tender GI cost for 24 projects considered by FAP up to January 2002 is 0.75% of the Project Budget. This reflects a more comprehensive GI programme to explore ground variations when compared with the corresponding valued of 0.35% for previous projects.

Note3 From May 2000 to January 2002, 17 out of 24 piling contracts have adopted engineer's design for piling works.

pile installations have met all contract requirements before pile caps are cast since June 2000.

(d) **Strengthening Contractor's management and supervision**

To overcome the problems of contractor's over-reliance on developer's supervision and unduly excessive subcontracting, we have strengthened contractor's management and supervision, especially by restricting subcontracting activities to one level only.

(e) **Reinforcing independent building control**

To address the community's legitimate expectation of an objective third party scrutiny of our work, we have strengthened independent checking. In November 2000, we have established the Independent Checking Unit (ICU) reporting to the Director of Housing to parallel BD's regulatory checking, initially focusing on foundation works and general building plans. By April 2002, ICU will progressively take up more types of parallel checking, including superstructural works, demolition works, pre-tender GI works etc.

(f) **Strengthening HA's listing of piling and ground investigation contractors**

To induce their consistent good performance, we have strengthened the listing control on piling and ground investigation contractors. In October 2000, we have established HA's own list of piling contractors. Following the endorsement of the administrative rules for HA's own list of ground investigation contractors in October 2001, we are now processing applications to establish the list. Our listed contractors have to be BD's registered specialist contractors.

(g) **Reviewing the Department's organization structure and management policy**

To facilitate clear accountability, we have been

reviewing the Department's organization structure and practices. We have reviewed the procedures for the piling process with focus on end results and parallel the BD's practice. The Foundation Inspection Manual will be issued for use by the project staff in the first quarter of 2002. To ensure the effective procurement of external resources, we have already launched the first project for the direct engagement of specialist consultants as opposed to the present engagement under the architect-led consultancy arrangement.

(h) **Strengthening human resource management**

To strengthen human resources management, we have enhanced staff reporting system and corruption prevention measures.

30. As a further step to strengthen the control on subcontracting for piling works, we have developed another reform package comprising five key measures as follows (Paper no. BC 97/2000, QH 06/2000 refers) –

(a) **Restricting proportion of sub-contracting**

We have inserted special tender condition regarding submission of the proposed scope of subcontracting for new piling tender.

(b) **Restricting multi-layered sub-contracting**

We have imposed contract requirements to limit subcontracting at principal piling activities to one layer at the main contract level.

(c) **Strengthening contractors' supervision on their sub-contractors**

We have included in new contracts Buildings Department's new supervision requirements to strengthen the contractor's role in supervision of the works including the part undertaken by their subcontractors.

- (d) **Strengthening control on piling sub-contractors**
We have required the piling contractors to appoint their subcontractors from prescribed lists.

- (e) **Strengthening control on piling design**
Piling designs for new HA projects are subject to regulatory vetting by the Independent Checking Unit as an effective means of control. Also, the piling contractors are required to employ consultants, subject to our listing control, to certify their designs for design-and-build piling contracts.

31. We have been tracking and reviewing the implementation of piling reform and reported to the Building Committee in December 2000 and September 2001 respectively (Paper No. BC 183/2000 QH 25/2000 and BC 120/2001 QH 19/2001 refer). Altogether, we have implemented more than 95% of the 52 items of entire piling reform package. The outstanding items are-

- (a) As a pre-requisite for the introduction of the Preferential Tender Award System to induce consistent good performance from piling contractors in 2002/03, we have commenced the trial of the new piling contractors' performance appraisal system on selected foundation contracts before full scale implementation in October 2002.

- (b) We are setting up our own testing laboratory to perform policing tests on the non-destructive testing on piles. We have procured the testing equipment and are performing the trial operation. We plan to perform full policing tests on piles by mid 2002.

Pillar Eleven – Improving Productivity

32. With the wider use of non-standard designs adopting site-specific approach, we have provided Model Client brief and

Technical Schedules for Group 1 and Group 2 developments for the project teams to compile project development parameters for non-standard designs (Paper No. BC 169/2000 HOC 99/2000 RHC 112/2000 QH 22/2000 refers). To assist project teams fully utilize the benefits of mechanization and prefabrication, we have issued guidelines on **buildability of non-standard block designs** covering the important aspects of modular layout, mechanization, prefabrication, quality control, site safety and programme in December 2001.

33. As sustained improvement is the key to future success, we have worked with the industry together to strive for greater efficiency and productivity in housing construction. A number of measures have been implemented as follows :-

- (a) To **promote wider use of prefabrication**, a pilot scheme has been initiated by contractor to incorporate prefabricated bathroom, and precast wall tile panel in Tseung Kwan O Area 73A Phase 2. We will conduct review on design, technical and operational details before drawing up policy framework.
- (b) Some pilot systems on **wider use of Information Technology** to enhance contract administration have been arranged, including electronic document management system, security and site quality control via digital camera, use of PDA, and video to improve communication between site and headquarters. Results are being evaluated.
- (c) To facilitate the development of **integrated production process**, we have identified the pilot project at Upper Wong Tai Sin Phase 3 to try out the “design and build” mode of procurement in mid 2001. However, after evaluating the benefits and the risks involved, we have considered that more detailed study on its feasibility would be required before the launch of the "design and build" pilot project. We will however continue to tap the contractors' expertise to

enhance the buildability of our designs and detailings of the site specific design projects to promote partnering and the integration of design and construction.

- (d) To enhance customer service and improve efficiency in building management, we have launched a pilot intelligent estate at Yau Tong Redevelopment (Paper No. BC 145/2001 QH 22/2001 refers).
- (e) Shui Chuen O which is at a more advanced design stage has replaced Diamond Hill as the **pilot “Green Estate”** project. We have tried out at Shui Chuen O a "feed-forward partnering approach" involving early management and maintenance inputs during design stage so as to promote a customer-focussed culture of designing for durability, sustainability, manageability, maintainability and life-cycle cost control.
- (f) To **reduce construction waste and improve the environment**, we have introduced waste management plan for demolition/piling/building contracts tendered-out from August 2000 onwards. We have also appointed Hong Kong Polytechnic University to carry out a research on the management of construction waste in some of our demolition and building contracts. The research study was completed in 2001. With the completion of pilot HK-BEAM (Residential) assessments for two of our housing projects, we have identified areas for enhancing the environmental friendliness of our designs and specifications.
- (g) We recognize the importance of conducting business activities in a way that protects the environment. We have established an **Environmental Procurement Policy** so as to influence our business partners to adopt environmentally responsible business practices

and supplies.

34. We have already implemented measures to tighten up the **control over the sub-contracting** of piling works and we will introduce measures to improve the transparency of the sub-contracting system of the building works. Meanwhile, we are in support of the establishment of the Organized Sub-contractors Registration System as recommended in the Construction Industry Review Committee (CIRC) Report.

35. We have introduced a **Comprehensive Integrity Action Plan** to promote ethical integrity covering Staff Integrity, Site Organization, Procurement and Contract, Inspection Arrangement, and Material Testing and Control. We have reported the progress on enhancing ethical practices in HA construction projects to the Building Committee in February 2002 (Paper No. BC 33/2002 QH 5/2002 refers). We have also issued a revised Departmental Staff Circular following thorough consultation with the line managers and staff associations. Meanwhile, the listing criteria and contract provisions will be enhanced to promulgate the same measures for the consultants and contractors.

36. The consultancy study commissioned by the Works Bureau for **analyzing the construction costs** has been completed. Whilst this study has already provided very useful information for use by the Department, we will consider proceeding with further study.

37. The consultancy study on "Future Delivery of Retail and Carparking Services" has identified "**Build, Operate, Transfer**" (**BOT**) **concept** as one means to increase private sector participation in new production of the Authority's commercial properties. However, in view of the current economic circumstances, we have decided not to adopt BOT until a more favourable market situation which would warrant the viability of such concept.

38. Continued research and development is the key to quality improvements and advances in the construction industry. The strategy for research in the development and construction of public housing has been developed, and the **Housing Authority Research Fund** is being rolled

out (Paper no. BC 71/2001, QH 11/2001 refers).

39. We are taking steps to enhance our specification to improve user-friendliness, reviewing and revising the technical requirements of priority architectural works items and materials.