



THE HONG KONG HOUSING AUTHORITY

Memorandum for the Building Committee

QUALITY HOUSING : PARTNERING FOR CHANGE

Reinforcing Site Supervision to Building Contracts

PURPOSE

To inform Members on the way forward and note the progress on reinforcing site supervision to building contracts.

BACKGROUND

2. To address the increasing community concern on quality of public housing, HA conducted a public consultation after publishing a document entitled “Quality Housing : Partnering for Change”. After consolidating the views of stakeholders and respondents, 50 recommendations were made to enhance the quality of public housing.

3. At its meeting on 13 April 2000, HA endorsed a strategy and Implementation Plan to implement the 50 recommendations (Paper No. HA 24/2000 refers). We firmly believe that quality construction depends on quality supervision on site. To address immediate concerns, “Pillar Three-Reinforcing Site Supervision” has been identified as one of the six pillars for Phase One Quality Reform, comprising Recommendations No. 16, 17, 19, 42 and 43. The measures recommended broadly cover the following areas -

- (a) Strengthening site supervisory resources
- (b) Reimbursing cost to consultants for strengthening site supervisory resources.
- (c) Providing adequate training to site staff.
- (d) Improving handover inspection at completion.
- (e) Delegating more authority to project teams.
- (f) Tightening contractor's obligations on site supervision.

4. Whilst we have informed Members about implementation of similar measures for piling contracts vide BC Paper No. BC 84/2000, QH 05/2000 entitled 'Quality Reform for Piling Works', this paper informs Members the position regarding building contracts.

IMPROVEMENT MEASURES ON REINFORCING SITE SUPERVISION

(I) Strengthening Site Supervisory Resources

5. Committed to achieving the public housing production targets, we are now facing a peak in production. This workload has been building up since 1998 but in order to contain staff growth, site staff strength over the last couple of years has not increased proportionally. This tension of site staff shortage has been further stretched by the growing complexity of our projects, shorter construction cycle and more stringent statutory and contractual requirements which calls for more on-site supervisory effort and professional input.

6. In light of the above and having taken into considerations the lessons learnt from the recent quality incidents, we have taken the following actions to reinforce site supervisory resources -

- (a) **Reviewing Site Staff Manning Ratios** - We have reviewed the benchmark manning ratios for calculating the overall strength of site staff and in July 2000 the Human Resources Committee (HRC) approved these revised manning ratios vide Paper No. HRC 37/2000. In order to strengthen final inspection and enhance customer service on defect rectification, we now allow for additional site supervisory resources during the last six months of the building contract and during the Defects Liability Period.

- (b) **Deploying Sufficient Site Supervisory Staff** - On the basis of the approved revised manning ratios, the current production peak and forecasts, we have also obtained HRC's approval to recruit 116 contract site staff vide the same paper. As at end September, about 100 of them have already been deployed to site. Furthermore, we have also obtained eight seconded site staff from consultants to support the transitional peak.

- (c) **Outsourcing Final Inspection** - To supplement in-house resources in meeting the transitional peak production, Members approved in April 2000 vide Paper No. BC 48/2000, QH 02/2000 the outsourcing of some of the water-tightness tests and final flat inspection to consultants. Four consultants have commenced work in August, handling associated tests and inspection for about 36,000 flats.

- (d) **Deploying Resident Professionals** – Considering their complexity, scale or risks involved for six building projects, we have already deployed resident architects or structural engineers ^{Note 1} to strengthen site supervision. To make best use of the Authority's resources by critically examining the need for resident professionals on individual merits, we have drawn up a list of projects for which resident professionals have been or will be provided (**Annex** refers). For projects where resident professionals are not provided, we will review the manning ratios of professionals by mid 2001.

(II) Reimbursing Cost to Consultants for Strengthening Site Supervisory Resources

7. Consultants directly employ a fixed number of site supervisory staff using our standard manning ratios. However, strengthening of site supervisory staff may be necessitated during the course of the project to cope with increased workload due to unanticipated risks or new supervisory requirements.

8. To address this problem, we have now adopted a more flexible approach. Subject to approval at appropriate level according to delegated financial limits, when the consultant has provided extra staff to strengthen site supervision on top of the predetermined manning ratio, with proper substantiation, we will reimburse the cost to them.

^{Note 1} For projects where resident professionals are deployed, we have clearly delineated their responsibilities and accountabilities with that of the project professionals.

(III) Providing Adequate Training to Site Staff

9. We fully recognise the importance of proper training to site staff in particular the inexperienced new recruits. For many years, induction training courses and refresher training have been provided on and off on regular or adhoc basis when resources permit. The escalating peak production in the last couple of years has admittedly diminished our input on training. To address this problem, we have taken the following actions -

- (a) **Establishing Formal Training Plans** - We have established formal induction training plans which are mandatory for new recruits and refresher courses for existing site staff (Paper No. BC 117/2000, QH 13/2000 refers). The Plans are comprehensive and entail three areas of training, namely :

inspection requirements, common quality problems and preventive measures, lectured mainly by experienced in-house site staff;
construction technology and craft skills conducted by outside training institutes; and
safety and integrity training conducted by institutes and ICAC respectively.

Courses have commenced in August for all new recruits and some existing staff, including staff of consultant projects when considered necessary. We will continue to run these courses in future as part of our overall training strategy.

- (b) **Developing Formal Training Materials** - We have already developed formal training materials covering the above subjects. Furthermore, our comprehensive libraries of procedural manuals and technical guides provide guidances for site staff in discharging their duties. In future, we will make them available electronically through our Intranet, and in conjunction with the construction industry, consider the use of video tapes or CD ROMs for demonstrating desirable practices for some major trades.

(IV) Improving Handover Inspection at Completion

10. We have to ensure that site supervisory resources are used efficiently and effectively. The completion stage of a project could be of much confusion due to the intensive finishing and inspection activities on-going within a short time and the involvement of different parties including Property Management. We will take the following measures to improve the situations -

- (a) **Ensuring Early Completion of Work for Inspection** - To avoid abortive efforts spent on unfruitful rounds of inspections, it is essential that sufficient time is allowed for inspection and defect rectification before completion. We will consider introducing, under the contractors' Performance Assessment Scoring System (PASS), assessment items for timely and early completion of services and flats.
- (b) **Clarifying Roles of Parties involved** - The Contract Manager should assume his role under the contract as the single party responsible for inspecting and accepting the flats and buildings from the contractor. We will clearly re-affirm his role through promulgation of internal instructions.

- (c) **Realistic Sample Flat as Acceptance Standard** - We will reinforce the use of the project sample flat, with a realistic achievable standard, for acceptance. To provide clear quality standards for our staff, the tenderers and contractors to follow, we will consider establishing some common benchmark sample flats by early 2001.
- (d) **Streamlining inspection with Property Management** - To facilitate inspections and handling of defects, we have aligned the inspection checklists of domestic flats for use by all parties including site staff, management agents and tenants/buyers.

11. With the above collective measures, takeover inspection by management agents may be gradually reduced resulting in further saving of resources.

(V) Delegating More Authority to Project Teams

12. Standardisation of design and construction has brought many benefits. However, our need to ensure consistency, transparency and control through prescriptive procedures and standards tends to stifle professional judgements, resulting in a lack of quick response and decision-making in resolving site problems. To improve the situations, we have taken the following measures -

- (a) **Allowing Modification to Standards** - We have now explicitly allowed project teams' modification to standard design, use of standard materials or specifications on justifiable grounds and on proper authorisation at appropriate levels. The wider use of site specific design also points to this direction.
- (b) **Streamlining Approval Authorities** - We have revised our procedures on seeking approval to modify or depart from standards aiming at more delegation to the Contract Manager and professionals for resolving problems on site efficiently.

- (c) **Streamlining Site Supervision System** - Over the years, we have been endeavouring to strike a proper balance between delegation, streamlining procedures and records yet maintaining proper control and traceable accountability. This is a difficult task, and we are now reviewing our site supervision system to see if further streamlining yet reinforcing contribution of senior site staff and professionals could be achieved by early 2001.

(VI) Tightening Contractor's Obligation on Site Supervision

13. Under the existing contract conditions, contractors have the obligations to ensure quality complying with our specified standards through provision of necessary superintendence and competent supervisory staff. The extent of "necessary superintendence" however is not clearly specified in the contract. The existing contract requirements on "competent supervisory staff" include Site Agent, Quality Control Engineer, Safety Officer and in some building contracts, also Registered Structural Engineer and qualified Building Services Coordinator. However, these are considered inadequate to meet the need for more sophisticated supervision requirements. We are now studying the following improvement measures -

- (a) **Upgrading Contractor Site Supervisory Staff** – We consider that there is a need to expand the contractual requirements such as to include Technical Directors, Authorized Signatories to parallel the private practices. We also need to specify the qualifications, experience and minimum number of sub-agents, general and trade formen etc., which may vary according to the complexity of the contracts.

- (b) **Quality Supervision Plan (QSP)** – Contractors shall provide continuous supervision of the works. We will specify the extent of site supervision required from the contractor to change the current contractor's tendency of relying on the Contract Manager and his representatives to supervise site work. We intend to require the contractor to submit a Quality Supervision Plan in each building contracts, practical and effective enough but without creating undue paperwork.

14. Full rollout of these measures will require extensive consultation with the industry but in order to address imminent needs, we will progressively introduce partial measures on some critical items first, such as requiring the contractors for new building contracts to employ dedicated competent staff for checking steel reinforcements by early 2001.

EFFECTS ON QUALITY

15. The above measures on reinforcing site supervision are results of long-time consultation with various stakeholders including various professional bodies, institutes, contractor and trade associations and our frontline staff. We have also benchmarked with private and other public development projects. We firmly believe that they can synergise the collective efforts of all resources now being put into site supervision by us and the construction industry for producing a better quality product.

16. Their effects will ultimately manifest in the reduction of defects and complaints reported by the users and various stakeholders of the industry. We will gauge and continue to monitor their effectiveness through existing established customer satisfaction surveys, the key performance indicator of average number of defects reported at handover and regular liaison meetings with various stakeholders.

PUBLIC REACTION AND PUBLICITY

Public

17. In the public consultation exercise for the Consultative Document Quality Housing: Partnering for Change, the public generally supported the above reform measures, and overwhelmingly opined that reinforcing site supervision is one of the most important elements in assuring product quality.

Hong Kong Construction Association

18. The Hong Kong Construction Association generally agree with the reform measures. In particular they welcome the establishment of a benchmark sample flat giving a clear indication of the acceptance standards for them to follow. Clarification of roles of various client parties at completion stage and streamlining administration procedures could reduce unnecessary rounds of inspections. More delegation of authority to project teams also speeds up decision-making and problem-solving on site which facilitate construction work.. They agree in principle the upgrading of contractor site supervisory staff and submission of Quality Supervision Plan but request further study be made on resources availability, administration and contractual implications before enforcing the requirements.

Consultants

19. Consultants generally agree with the reform measures. They generally welcome the provision of more site supervisory staff including resident professionals if necessary as conducive to assuring product quality, and the subsequent reimbursement of extra cost to them. Delegating more authority to frontline would also facilitate the efficient discharge of their professional service.

Staff

20. On the staff side, they fully appreciate the provision of more site staff as shortage due to peak production has put a lot of pressure on them. Improving handover inspection would improve efficiency and make better use of their resource. Training will better equip them and their subordinates in discharging their duties more effectively. They have, however, strongly expressed their request for additional staff resources as some of their senior and experienced staff have to conduct training regularly in addition to their normal site supervision duty. In response, we have now arranged dedicated resources for training.

FINANCIAL AND STAFFING IMPLICATIONS

21. The estimated financial and staffing impacts of the proposed reform measures are summarized as follow –

- (a) On strengthening site supervisory resources approved by HRC in July, we have created 116 contract posts for two years which will incur an annual staff cost of \$30 million for in-house projects, but the majority of this cost is due to increased production within this period.
- (b) On outsourcing watertightness tests and final inspection approved by Members in April, the cost will be around \$20 million but this is an one-off expenditure to meet peak production.
- (c) For deploying resident professionals to some building contracts, the additional cost will be about \$15 million per year for in-house projects.
- (d) For reimbursing consultants the cost for providing extra supervisory resources, the annual additional cost is around \$20 million.

- (e) For reinforcing training to site staff informed to Members in August, there will be a slight increase of \$1.4 million for outsourcing some of the courses and providing extra in-house training staff resources.
- (f) Improving handover inspection and delegation more authority will result in more efficient use of staff resources, hence saving on some staff cost in the long run.

22. For 2000/01, the total increase in cost is about \$86.4 million during current peak production which is about 0.3% of the estimated capital expenditure of 2000/01. The costs will gradually decrease as the peak production subsides in subsequent years. Funds will be available from the revised budgets for 2000/01.

WAY FORWARD

23. Most of the above reform measures have been implemented and will be on-going, but we need to further look at -

- (a) Reviewing the overall manning ratios of professionals and site staff to take into account resident professionals, strengthening training and upgrading competency of site staff.
- (b) Establishing common benchmark sample flats to provide clear quality standards.
- (c) In collaboration with the industry, considering the use of Videos, CD ROM for demonstrating desirable practices and workmanship.
- (d) Further streamlining of the site inspection procedures and paperwork, yet maintaining control and traceable accountability.
- (e) Further development on upgrading contractor site supervisory staff and Quality Supervision Plan.

24. We will report their progress to Members in our Quarterly Progress Report on Quality Housing Implementation Plan as appropriate.

INFORMATION

25. This paper is for Members' information and discussion at the next meeting on 19 October 2000.

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