

INFORMATION NOTE FOR THE SELECT COMMITTEE ON BUILDING PROBLEMS OF PUBLIC HOUSING UNITS

Background Information on the Construction Branch of the Housing Department between 1973/74 and 1999/2000

1. Introduction

1.1 The purpose of this information note is to provide the Select Committee with background information on the Construction Branch of the Housing Department between 1973/74 and 1999/2000. All information is extracted from the annual reports of the Hong Kong Housing Authority published between 1974/75 and 1999/2000.

Background Information on the Construction Branch of the Housing Department between 1973/74 and 1999/2000

Year	Details
1973/74	<ul style="list-style-type: none"> • The Construction Branch was set up soon after the establishment of the new Housing Department (HD).
1977/78	<ul style="list-style-type: none"> • The Construction Branch was headed by a Deputy Director who supervised four architectural teams. Each architectural team was led by a chief architect who monitored the progress of the development schemes. • Particular attention was paid to the availability of resources, such as staff requirements, the supply of building materials and the availability of labour.
1978/79	<ul style="list-style-type: none"> • To ensure the co-ordination of efforts to meet production targets, the HD maintained a system monitoring the progress of and adjustments in the public housing programme. This system was closely linked with the development programmes of other departments, and was particularly related to the new towns of Shatin, Tuen Mun, Tsuen Wan, Yuen Long and Tai Po - Fanling. • The development process was undertaken by the four architectural teams, in close co-operation with associated disciplines of civil, structural and building services engineering, and quantity and maintenance surveying. • Close contact was maintained with the staff of the Public Works Department working in the new town and urban areas.

Year	Details
1980/81	<ul style="list-style-type: none"> • The Construction Branch comprised five divisions: <ol style="list-style-type: none"> (a) Architecture; (b) Structural Engineering; (c) Building Services; (d) Civil Engineering; and (e) Quantity Surveying.
1983/84	<ul style="list-style-type: none"> • The Civil Engineering Division (of the Construction Branch) was responsible for the civil, geotechnical and structural engineering aspects of all developments undertaken by the HD, including the design and supervision of building structures, site formation and piling works, and the management of consultants.
1984/85	<ul style="list-style-type: none"> • The number of divisions of the Construction Branch was increased from five to six: <ol style="list-style-type: none"> (a) Architecture; (b) Civil and Structural Engineering; (c) Maintenance; (d) Building Services; (e) Quantity Surveying; and (f) Planning. • The main role of the Civil and Structural Engineering Division was to design and supervise the structural elements within the building contracts of the Housing Authority (HA). A substantial number of engineering contracts were administered directly by the Division, including those for site formation, slope stabilization, piling and demolition works. • The Construction Branch set up its own materials testing laboratory which was administered by the Civil and Structural Engineering Division. The laboratory would act as a 'policing' mechanism on quality control to maintain standards. • The Branch also established its own Land Surveying Unit to centralize the management and provision of all surveying services to the HD.
1985/86	<ul style="list-style-type: none"> • The Civil and Structural Engineering Division (of the Construction Branch) administered several slope preventive works contracts in addition to running the term contracts for site investigation and monitoring of ground anchors. Other works of the Division included the structural investigation and appraisal of existing housing blocks, and the running of a Materials Testing Laboratory.

Year	Details
1985/86 (cont'd)	<ul style="list-style-type: none"> • To improve quality in all structural works, the Civil and Structural Engineering Division enforced stringent specifications, and tested and controlled procedures on construction materials with the aid of the Materials Testing Laboratory. • The Laboratory would expand to allow testing of other building materials, such as cement, aggregates and steel reinforcement, and would continue to act as a 'policing' mechanism on quality control by operating random site sampling and testing.
1986/87	<ul style="list-style-type: none"> • The number of divisions of the Construction Branch was reduced from six to five: <ol style="list-style-type: none"> (a) Architecture; (b) Civil and Structural Engineering; (c) Maintenance; (d) Building Services; and (e) Quantity Surveying. • The Architecture Division maintained liaison with the Building Contractors' Association. • The Civil and Structural Engineering Division improved site supervision by the appointment of several resident engineers to work full-time on building sites.
1987/88	<ul style="list-style-type: none"> • Despite an extremely heavy workload and the labour shortage problem, the Architecture Division (of the Construction Branch) continued to exercise tight quality control on all building sites to ensure an acceptable standard of work was being achieved across-the-board. • Following a review of the resources required for supervising current and future construction projects, it was anticipated that more site supervisory staff would be needed within the following two years to cope with the projected workload. • The number of full-time resident engineers assigned to sites was increased to 14, and more would be appointed in the following years.
1988/89	<ul style="list-style-type: none"> • The HD established a 'Quality Assurance Committee' to promote improved standards in public housing construction. The focal point of the Quality Assurance Committee's activities was the Materials Testing Laboratory, which provided control for concrete testing. A new steel testing machinery was also installed. All tensile and bending strength tests were computer-controlled and the results were automatically plotted and recorded.

Year	Details
1988/89 (cont'd)	<ul style="list-style-type: none"> • A scheme to guarantee quality at source by requiring manufacturers and suppliers to adopt quality management practices and encoring this with rigorous inspection and certification was adopted by the prestressed concrete pile makers, on the HD's instigation.
1989/90	<ul style="list-style-type: none"> • To assist contractors to obtain accreditation under the International Standards Organization Guide 9000, the HA, jointly with the Hong Kong Construction Association, commissioned a consultancy to advise the construction industry on how to establish an acceptable quality assurance system. • Under the rules of the new lists of building contractors, companies were given three years, up to 31 March 1993, to obtain accreditation and thus the right to work for the HA. Meanwhile, all contractors were on a probationary status and their performance, and consequently their tendering opportunities, were monitored by a new and more objective Performance Assessment Scoring System (PASS).
1990/91	<ul style="list-style-type: none"> • The HA established an approved list of building contractors, enabling a close monitoring of contractors' performance and the evolution towards a system whereby better performers would be given more tendering opportunities. • Since January 1991, all building construction sites were subject to a monthly PASS inspection. Based on random sampling, checks were made in the presence of the contractors for compliance with specification. • Over 3 000 staff were involved in the design and supervision of new construction and maintenance works. • The number of divisions of the Construction Branch was increased from five to six: <ul style="list-style-type: none"> (a) Architecture; (b) Civil and Structural Engineering; (c) Maintenance; (d) Building Services; (e) Quantity Surveying; and (f) Planning.
1991/92	<ul style="list-style-type: none"> • Data on the first full year's operation of both the PASS and the Maintenance Assessment Scoring System (MASS) showed that contractors' on-site performance was improved. The assessments were carried out on an 'open' basis once a month with contractors' staff being present during inspections.

Year	Details
1992/93	<ul style="list-style-type: none"> • The number of divisions of the Construction Branch was increased from six to seven: <ul style="list-style-type: none"> (a) Architecture; (b) Civil and Structural Engineering; (c) Maintenance; (d) Building Services; (e) Quantity Surveying; (f) Planning; and (g) Landscape.
1993/94	<ul style="list-style-type: none"> • The Construction Branch was re-organized and renamed the Works Group which comprised: <ul style="list-style-type: none"> (a) the Maintenance and Construction Services Branch; and (b) the New Development Branch. • The Maintenance and Construction Services Branch comprised the Maintenance, Quantity Surveying and Building Services Divisions. • The New Development Branch comprised the Architecture, Civil and Structural Engineering, Planning, Landscape and Building Services Divisions.
1995/96	<ul style="list-style-type: none"> • Management consultants carried out an in-depth study of the internal working procedures in all divisions of the Works Group. The report would recommend definitive measures to further increase efficiency and productivity. • The implementation of the Project Management System was intended to improve the management of the public housing development programme and the management of individual development projects. It replaced the Centralized Project Monitoring System. • The number of divisions of the Maintenance and Construction Services Branch was increased from three to four: <ul style="list-style-type: none"> (a) Maintenance; (b) Quantity Surveying; (c) Building Services; and (d) Geotechnical Engineering.
1996/97	<ul style="list-style-type: none"> • Four scoring systems, namely, the PASS, the MASS, the Laboratory Assessment Scoring System and the Building Services Performance Assessment Scoring System, were used to assess the performance and capabilities of building contractors, maintenance contractors, laboratory services and building sub-contractors respectively, with the operation of a reward system for good performance.

Year	Details
1996/97 (cont'd)	<ul style="list-style-type: none"> • The HD was restructured along core business lines. (The New Development Branch was replaced by the Development and Construction Branch after the restructuring. Please refer to Attachments I and II for the organization chart before and after the restructuring.)
1997/98	<ul style="list-style-type: none"> • The Project Management Division was set up within the Development and Construction Branch to strengthen project management on public housing sites under the overall co-ordination of a dedicated project manager. • The streamlining of development procedures reduced the standard lead-time for a typical public housing project from 62 months to 47 months. This was achieved by carrying out feasibility studies and preparing conceptual layouts in parallel while also intensifying activities at the early stages of the project. • Quality Certification became a pre-requisite for the HA's main contractors. Starting from November 1997, all consultants had to be certified under the ISO 9000. • The ISO 9001 certification requirement was extended to piling contractors in January 1998 and demolition contractors in July 1998. • The Buildability Working Group was set up within the HD to explore how the "buildability" of standard blocks could be improved and the construction periods shortened. In consultation with the Hong Kong Construction Association, certain construction details in the Harmony and New Cruciform Blocks were modified. These included improvements to ground beams, the relocation of water tanks to ground levels and the more widespread use of precast facades and staircases. The use of ancillary Facilities Modules maximized the potential benefit of a shorter construction period.
1998/99	<ul style="list-style-type: none"> • The HD conducted a comprehensive review of production procedures at all stages with the aim of ensuring better quality control. • The HD had a series of discussions, workshops and brainstorming sessions with consultants, contractors and professional institutions to explore ways to improve quality. Besides seeking co-operation from partners in the industry, the HD also stepped up efforts to encourage staff to rededicate themselves to quality production with a determination to tackle the problem.

Year	Details
1998/99 (cont'd)	<ul style="list-style-type: none"> • Following a major re-organization of the Maintenance and Construction Services Branch and the New Development Branch (i.e. the Works Group) in November 1997, a further restructuring took place in March 1999. Under this restructuring, three regional Project Divisions were in place, serving the Eastern, Western and Central Regions in Hong Kong. The Project Manager's scope of responsibility was extended to cover every stage of the project, and to integrate the planning, building and completion processes. This move streamlined the management process, established clear ownership and accountability among working units, improved efficiency, strengthened management control and facilitated communication. • The new Development and Construction Branch comprised 10 units: <ul style="list-style-type: none"> (a) Architecture; (b) Civil Engineering; (c) Structural Engineering; (d) Landscape; (e) Project Management; (f) Building Services; (g) Geotechnical Engineering; (h) Planning; (i) Quantity Surveying; and (j) Consultant Management. (Please refer to Attachment III for information about the organization chart.)
1999/2000	<ul style="list-style-type: none"> • The HA involved the community in finding a solution for quality housing through a public consultation exercise on "Quality Housing: Partnering for Change" between late 1999 and early 2000. The result of which was a consensus reached among the construction industry, relevant professional institutes and the community on a reform package comprising a total of 50 quality housing initiatives. The package was approved by the HA in April 2000. • A Quality Task Force was formed to oversee the implementation of the initiatives in stages. Those relating to building safety and service quality were implemented as a matter of priority. Others regarding sustaining improvements in the construction industry and building closer partnership amongst all stakeholders have also been rolled out progressively since June 2000.

Year	Details
1999/2000 (cont'd)	<ul style="list-style-type: none"> • The provision of quality services to customers, the revamping of the piling process, the reinforcement of site supervision, and the reforming listing and tendering practices formed the key areas to be covered in phase one of the programme (the 50 quality housing initiatives). A multi-disciplinary task force was formed to oversee the implementation of these recommendations, which was reviewed at a "partnering conference" held in October 2000. • In view of the surge in construction activity, consultant architects, engineers and quantity surveyors were appointed in the design and site supervision for a number of projects in 1999 and 2000. • Actions were taken to strengthen site supervision and to improve the standard of piling works. Final inspection work was carried out through the appointment of additional staff and the secondment of consultants. Professional resident engineers remained on site to supervise the works. The use of sonic tubes in large-diameter bored piles was extended to all new contracts and newly installed piles in existing contracts to facilitate 100% core testing if necessary. An independent consultant was also appointed to review specifications for piling works as a top priority. • The existing practice of list and global workload capping limits served the function of risk management of contractors. In addition, the Building Committee decided to impose a requirement for an on-demand bond for "Group New Works (1)" building and foundation contracts. These bond requirements were effective for "Group New Works (1)" building contracts tendered after 1 September 1999 and for foundation contracts tendered after 1 January 2000. • Audits on the architectural, structural and building services engineering work for all consultants and in-house projects at critical milestones were introduced in April 1999. Since their implementation, a number of deficiencies both in projects and systems have been identified and rectified through corrective actions. These include: <ul style="list-style-type: none"> (a) improving the systems through feedback as well as periodic reviews by senior management; (b) maintaining the quality of project work through surprise checks on the adequacy and quality of site supervision and inspection; and (c) alerting project teams on general and specific deficient areas identified in the audits.

Sources: Hong Kong Housing Authority Annual Reports, 1974/75 - 1999/2000

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