

**[Subject to the approval by the
Housing Authority and its Building Committee]**

**Quality Housing:
Partnering for Change**

Consultative Document

*Hong Kong Housing Authority
January 2000*

Quality Housing: Partnering for Change

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Chairman's Foreword

For several years the Housing Authority has been striving to enhance the quality of the housing it produces. The events of the last twelve months have diminished these efforts, have undermined public confidence and have cast a shadow over the performance of the construction industry.

Complaints of shoddy workmanship in the finish of residential flats, both public and private, are not new. However, their increasing frequency and intensity are a clear sign that, with greater prosperity and better education, the community's aspirations have moved rapidly forward and left the industry lagging behind. That in itself is a matter of concern, but it pales beside the series of deficiencies to piling works discovered in both private and public developments.

In the aftermath of these disturbing discoveries, the Housing Authority has intensified discussions already in train with industry representatives, using the opportunity to focus on what has gone wrong and to rally support from forward-looking members for a quantum improvement in building quality. We have met and exchanged ideas on problems and potential solutions with all our major contractors and consultants, the relevant professional institutes, members of the Legislative Council and representatives of political parties, construction workers' unions, academics, staff of Housing Department, as well as tenants and owners. I am most grateful to all of them for their time and insight for contribution. Many of their suggestions are reflected in the recommendations put forward in this document.

We have been impressed by both the candour with which the various parties have come to the table and by an apparent consensus on the need for change. More than this, there appears to be an agreement on two broad aspects of the way forward. First, all recognize the need for reforms to the housing production process, including the Housing Authority's procurement practices and the Housing Department's procedures. Second, all regard partnering as the only way in which we will jointly achieve the sustained improvements to quality and efficiency which Hong Kong's advanced community deserves. Hence the title of this consultative document.

There will of course be contrary voices, and others which plead for more time, but to set our pace by the speed of the slowest would be to stand still. Innovation and improvement to quality demand leadership. While we cannot get rid of the building quality problems overnight, we are confident that the reforms will improve quality progressively in the long run. In publishing this consultative document, we wish to send an unequivocal message that the Housing Authority seeks to partner only with those who are committed to leading the industry forward. There can be no compromise on either safety or quality.

This document is thus the Housing Authority's contribution to the process of reform. The proposals in it are not conclusive, rather we have endeavoured to set a broad strategic direction, pulling together those ideas on which views so far expressed have been the clearest and most unanimous. Over the consultative period of the next two months, we would welcome detailed comments and further suggestions for improvement. With your help and support, I am confident that these reforms will succeed.

Rosanna WONG
Chairman, Housing Authority

Message from Secretary for Works

It has always been my vision to develop a healthy, capable and reliable construction industry which can consistently deliver quality construction products on time and in a safe and environmentally friendly manner, and that everyone taking part in the construction process takes pride in his/her involvement and contribution.

We have been able to reap achievements in the past in building a new international airport, high-speed expressways, long-span bridges across sea channels, large-scale sewage treatment works and water treatment works, gorgeous commercial buildings on both sides of the harbour. Indeed, the construction industry has contributed tremendously to the infrastructural and economic development of Hong Kong.

The various incidents in the past year that involved non-complying building and public housing construction works do, however, warrant community concern on the quality of building works. The construction industry itself also agrees that urgent action is needed to rectify the problems that affect the delivery of quality construction works. More importantly, the various other problems of the industry as revealed in these incidents also have to be addressed. We need to initiate a culture change and develop a more efficient and productive construction industry with a better quality workforce that can deliver quality and generate less construction waste in the long run.

Given the nature of the problems and large number of stakeholders involved, I fully share the view of the Housing Authority that the key driver for change has to be through partnering. I also support the strategies and initiatives proposed in this consultative document.

Towards uplifting our construction industry and delivering construction quality in the long term, the Works Bureau has set up the Quality Construction Committee comprising representatives from all sectors of the industry. I am confident that the implementation of the reform measures to be proposed later by the Works Bureau together with those in this document by the Housing Authority will help to foster a healthy and capable construction industry that will sustain our prosperity and developments into the 21st century.

LEE Shing-see
Secretary for Works

Executive Summary

1. The construction industry has been the locomotive of Hong Kong's economic and social development. It has assisted the Housing Authority (HA) to deliver a massive public housing programme which accommodates nearly half of the population. Hong Kong needs to have a world-class construction industry to meet the challenges of the new millennium. (*Chapter 1*)
2. The HA has entered into a production peak. It was work underway on 140 sites, comprising 190,000 new housing units. This level of housing production is unprecedented and has put much pressure on all those in the housing supply chain. (*Chapter 2*)
3. There has been deep concern on public housing quality. The particular pressure arising from the recent production peak has exposed weaknesses within our housing production system as well as the industry. The HA has discussed the issue with various stakeholders extensively to identify problems and potential solutions. The perceived problems undermining building quality are as follows : heavy workload and fluctuating production; lack of a common drive to deliver quality housing; confusion of roles and responsibilities amongst stakeholders; fragmented production process; lack of partnering between developers and contractors; labour-intensive operations and inadequate training, multi-layered sub-contracting; inadequate project supervision; little investment in research and the Housing Department's overly rigid systems and cumbersome practices. (*Chapter 2*)
4. The HA is committed to delivering quality housing for customers. As the largest public housing provider, we will contribute to and facilitate this housing quality reform. Our reform vision is: "To provide quality housing together with all stakeholders through partnering and sustained improvement such that the community can take pride in our housing construction." We have developed a 4 "P" strategy to enhance building quality : partnering; product quality; professionalism; and productivity. (*Chapter 3*)

5. The HA will build up a partnering framework to hold all stakeholders together. A Quality Partnering Charter will be drawn up to commit all stakeholders to this quality-driven agenda. We will clearly define the roles and responsibilities of key stakeholders to remove grey areas. We will revise contractual arrangements with contractors to achieve equitable risk-sharing. The HA will further strengthen the communication channels with contractors and consultants to improve the production process and to resolve disputes speedily. We will also tap customer feedback more proactively to make further improvements. (*Chapter 4*)
6. The new partnering framework will also feature a more objective and comprehensive performance appraisal system for both consultants and contractors. The HA's disciplinary mechanism will become more efficient and open by including non-officials in the process and establishing a separate review mechanism. Besides, the tendering system will put greater emphasis on tenderers' technical capabilities and eliminate unhealthy cut-throat price competition. Consistent top performers will become the HA's strategic partners and enjoy more favourable tendering opportunities. (*Chapter 4*)
7. We will strengthen quality supervision throughout the construction process. Designated sample flats will provide clear quality benchmarks for contractors and workers. The introduction of Quality Supervision Plans and milestone check-points will draw upon greater commitments from the industry to deliver quality works at all stages. In addition, resident professionals will be deployed to strengthen on-site project supervision. Sufficient and competent supervisory staff will be provided on sites. (*Chapter 5*)
8. Tenants and owners will secure greater quality assurance. We will provide a 10-year structural guarantee to all Home Ownership Scheme and Private Sector Participation Scheme developments from the date of completion. Besides, contractors' dedicated defect rectification teams will respond speedily to repair calls during in-take. To enhance the objectivity of its building control standards, the HA intends to put public housing under the scrutiny of the Buildings Ordinance. (*Chapter 5*)

9. To enable the industry to realize its full potential, the HA will contribute positively to build up a professional workforce. We will support the Construction Workers' Registration System and encourage the use of direct labour by contractors. We will work closely with training authorities to develop a visionary training strategy to meet the industry's operational needs. The HA will recognize fully the value of training by raising the professional qualifications of site supervisory staff and the proportion of trade-tested workers through contract requirements. We will step up our site safety measures to provide workers with a decent working environment. (*Chapter 6*)
10. As sustained improvement is the key to future success, we will work with the industry together to strive for greater efficiency and productivity in housing construction. The HA will promote mechanization of the building process through the wider use of prefabricated building components and system formwork. We will promote research in new technologies by establishing a research fund and an award scheme. We will also facilitate the industry to develop an integrated production process by revising our procurement policies, introducing a pilot "design-and-build" project and widening the use of "non-standard" building designs. We will initiate a consultancy study to examine the causes of relatively high construction costs in Hong Kong. (*Chapter 7*)
11. We will work with the industry to combat un-restrained multi-layered sub-contracting through the formation of an Organized Specialist Sub-contractors System and the wider use of contract workers. We will extend the normal construction period of new piling and building works by 1 and 2 months respectively to allow contractors to take on board all the reinforced quality-assurance requirements. The HA will also contribute towards sustainable development by introducing a "Green Estate" project and reducing waste generation through a series of environmental conservation initiatives. (*Chapter 7*)

12. The Housing Department will implement organizational reforms to streamline decision-making mechanisms and to define clearly the roles and responsibilities of different units clearly. The internal check-and-balance system will be reinforced by setting aside all regulatory and performance evaluation functions apart from project implementation. A more efficient and responsive organizational culture and system will be developed to promote partnering with the industry. (*Chapter 7*)
13. The HA will address existing public concerns on the quality of piling works. We are strengthening our supervision by deploying resident engineers to all piling projects and re-checking the performance of all uncompleted projects. We will review and tighten up the use of pre-cast pre-stressed concrete piles and make provision for 100% checking for large diameter bored piles upon works completion. We will put greater control on sub-contracting activities of piling works and introduce more independent checking during the completion stage. We will tighten up the qualification requirements for piling contractors' site staff and establish the HA's own lists of piling and geotechnical investigation contractors. The HA will work with the Government and other stakeholders closely to uphold the industry's professional ethics and integrity. To meet the current production peak, we will conduct more surprise checks on site and outsource final flat inspection work to independent monitoring professionals for upholding building quality. (*Chapter 8*)
14. The HA is committed to enhancing building quality with the Government and the industry through partnering and sustained improvement. We welcome views from the industry and the community on our recommendations. We will refine our recommendations having regard to public feedback and draw up concrete implementation plans. (*Chapter 9*)

Quality Housing: Partnering for Change

List of Recommendations

(I) Building up a Partnering Framework (*Chapter 4*)

1. To reinforce stakeholders' commitments in delivering quality housing through drawing up a Quality Partnering Charter and highlighting their participation in each project by publicizing their names in sale brochures and completed developments. (*Para. 4.4*)
2. To clearly define key stakeholders' roles and responsibilities and to maximize benefits of their contributions and interaction. (*Para. 4.6*)
3. To revise contractual arrangements for achieving more equitable risk-sharing, including (*Para. 4.8*):
 - widening the use of "engineer's design" for piling projects
 - reviewing the basis for calculating liquidated damages for building and piling contracts
 - setting clear time-frames for submissions/substantiations of claims for time and money by contractors and the Housing Department (HD)'s response
 - reviewing the payment of prolongation costs arising from the granting of time extensions for inclement weather in the extended contract period
 - reviewing the effectiveness of on-demand bonds for building and piling contractors after one year of implementation, i.e. by the end of 2000
4. To strengthen the communication channels with key stakeholders at the strategic level through establishing an annual partnering conference by the HA and regular workshops by the HD's directorate staff. (*Para. 4.10*)
5. To reinforce the partnering spirit with contractors and consultants during project implementation through setting up partnering meetings and review workshops by the HD's project teams at the commencement, implementation and completion stages of the project respectively. (*Para. 4.10*)

6. To resolve disputes speedily during project implementation through the use of adjudication and/or Dispute Resolution Advisers in large-scale building contracts. (*Para. 4.11*)
7. To tap customer feedback more proactively for introducing continuous improvements through (*Para. 4.12*):
 - conducting regular surveys and focus group meetings
 - commissioning consultancy studies regularly
 - setting up a dedicated customer feedback unit in the HD
8. To strengthen the representativeness and coverage of building contractors' performance appraisal system by introducing Performance Assessment Scoring System 2000 from April 2000 onwards. (*Para. 4.13*)
9. To strengthen the appraisal system for consultants to enhance its objectivity and consistency and to draw up clear guidelines for performance evaluation. (*Para. 4.14*)
10. To enhance the objectiveness and independence of the disciplinary mechanism by (*Para. 4.16*):
 - increasing the representativeness of the List Management Committee and the Consultants Review Board by including non-official members and revising their terms of reference
 - drawing up more detailed guidelines for taking sanctions
 - establishing a separate review mechanism through the Building Committee
 - taking prompt action against non-performing contractors and consultants and imposing severe penalties
 - publishing the performance scores of contractors and consultants when the performance appraisal systems mature
 - engaging independent agents to conduct investigation for major malpractices discovered in the construction process
11. To secure competent contractors from the tendering system by (*Para. 4.20*):
 - extending the Preferential Tender Award System and the Bonus Scheme to building services and piling contracts
 - tightening up listing and tendering requirements to focus on competent contractors

- reviewing the current 20:80 score weighting between performance and price used for evaluating building contract tenders, including the methodology, one year after implementation, i.e. by the end of 2000
 - exploring the exclusion of exceptional low tenders from assessment
 - establishing strategic partnerships with consistent top performers
12. To secure competent consultants from the tendering system by (*Para. 4.21*):
- increasing the score weighting between performance and price from 50:50 to 70:30 under the "Two-envelope System"
 - exploring the exclusion of exceptional low tenders from assessment
 - establishing strategic partnerships with consistent top performers
 - tightening up listing and tendering requirements to focus on competent consultants

(II) Assuring Product Quality (*Chapter 5*)

13. To identify "designated sample flats" to provide realistic acceptance benchmarks for contractors to follow during construction and to produce video tapes/CD ROM for demonstrating desirable building procedures/methods. (*Para. 5.3*)
14. To draw up a list of milestone check-points for monitoring contractors' progress and to link up the achievement with performance appraisal and contract payments. (*Para. 5.4*)
15. To require contractors and consultants to submit Quality Supervision Plans on project management proposals. (*Para. 5.5*)
16. To strengthen on-site supervision by providing resident professionals for piling and large-scale building projects. (*Para. 5.6*)
17. To deploy and maintain sufficient and competent supervisory staff by the HD, consultants and contractors on all sites during project implementation. (*Para. 5.6*)
18. To introduce an objective third-party scrutiny on the HA's buildings by putting them under the control of the Buildings Ordinance. (*Para. 5.9*)
19. To streamline handover inspection procedures and define clear acceptance authority during project completion with a view to providing clear and consistent project handover standards to contractors. (*Para. 5.11*)

20. To require contractors to rectify defects after in-take speedily through setting up standby defect rectification teams, adjusting the release of retention money by the HD and extending the defect liability period to 2 years. (*Para. 5.13*)
21. To provide a 10-year structural guarantee to all Home Ownership Scheme and Private Sector Participation Scheme developments from the date of completion. (*Para. 5.14*)
22. To explore the introduction of a quality warranty system by contractors. (*Para. 5.15*)

(III) Investing for a Professional Workforce (*Chapter 6*)

23. To consider requiring contractors to employ contract workers in core trades by themselves and through their nominated sub-contractors and domestic sub-contractors. (*Para. 6.5*)
24. To support the implementation of the Construction Workers' Registration System for enhancing the industry's professionalism. (*Para. 6.6*)
25. To liaise with training authorities in providing more site management and public housing-oriented courses and continuous training opportunities for workers. (*Para. 6.8*)
26. To uplift the professional qualifications for site supervisory staff and to increase the proportion of trade-tested workers from 35% to 60% in 3 years through contract requirements. (*Para. 6.10*)
27. To strive for better site safety records by implementing the "Pay for Safety Scheme", stipulating the minimum threshold for safety provision budget in contracts and strengthening site safety requirements in tender assessment. (*Para. 6.12*)

(IV) Striving for Efficiency and Productivity (*Chapter 7*)

28. To promote the wider use of mechanized building process, including system formwork and prefabricated building components. (*Para. 7.2*)
29. To promote research within the building industry through (*Para. 7.3*):
 - providing tendering advantages to contractors who innovate
 - setting up the HA Research Fund and the Excellence Award Scheme

- drawing up a systematic research plan by the HD
 - facilitating the wider use of information technology
30. To facilitate the development of an integrated production process by (*Para. 7.5*):
- launching a pilot "design-and-build" building project
 - facilitating the wider use of "non-standard" building designs
 - conducting buildability workshops with stakeholders
 - reviewing the "Nominated Sub-contracting System"
 - examining the impact of life-cycle costs of buildings on the HA's procurement policy
 - widening the choices of building materials to be used by contractors
 - reviewing the architect-led consultant appointment system
31. To support the formation of an Organised Specialist Sub-contractors System and the employment of contract workers for tightening up control over sub-contracting. (*Para. 7.8*)
32. To allow sufficient time for contractors to deliver quality housing by extending the normal construction period of new piling and building works by 1 and 2 months respectively. (*Para. 7.10*)
33. To commission a consultancy study to analyze the causes for the relatively high construction costs for residential developments. (*Para. 7.12*)
34. To reform the operations of the HD's Development and Construction Branch by (*Para. 7.13*):
- re-organizing the branch into 3 core functional lines
 - reinforcing reviews on standard designs and undertaking researches
 - strengthening project management
 - streamlining decision-making by further delegation of authority and staff empowerment
 - strengthening on-site leadership by deploying resident professional
 - reinforcing internal audit functions
35. To plan for a pilot "Green Estate" for developing the concept of sustainable development. (*Para. 7.17*)
36. To reduce construction waste and improve the environment by (*Para. 7.18*):
- improving environmental friendliness of new buildings through the use of the HK-BEAM (Residential)

- introducing a "basic shell concept" for new flat fitting-out to reduce waste arising from decoration
- improving the cleanliness of new estates through the installation of Automated Refuse Collection System
- extending the use of the Waste Management Plan to building and piling contracts

(V) Addressing Existing Public Concerns (*Chapter 8*)

37. To introduce short-term measures for safeguarding the quality of piling works by (*Para. 8.3*):

- providing a resident engineer for each piling contract to monitor all critical stages of works
- re-checking the piling works of all uncompleted projects
- tightening up the control on sub-contracting activities
- engaging independent consultants to witness and endorse the final acceptance tests
- commissioning an independent consultant to audit the HD's piling works
- reviewing and tightening up the use of pre-cast pre-stressed concrete piles
- widening the use of the engineer's design for projects with difficult site conditions
- strengthening on-site supervision teams
- adopting a flexible approach in considering requests for extension of contract period for current projects where there are genuine needs

38. To improve the quality of piling works in the long run through (*Para. 8.4*):

- increasing the qualification and experience requirements for contractors' core site staff
- extending the use of sonic tubes to all large diameter bored-piled projects so that 100% checking can be made possible
- establishing the HA's own list of piling and geotechnical investigation contractors

- establishing a new performance appraisal system and introducing the Preferential Tender Award System
 - reviewing the basis for determining liquidated damages for piling contracts
39. To work with other stakeholders to uphold the industry's ethical integrity by (*Para. 8.5*):
- working closely with the Independent Commission Against Corruption to curb corruption
 - recommending the Government to review the levels of fines for sub-standard building works
 - urging professional institutes and trade associations to develop a Code of Practice and other sanction systems
40. To introduce short-term measures for meeting the completion of the large number of new flats in 2000/01 by (*Para. 8.8*):
- conducting more surprise checks by the HD's Project Managers and audit teams
 - contracting out part of the final inspection work of new flats
 - drawing up a special operation plan for a mass in-take of new flats

Chapter 1: The Challenges Ahead

1.1 The construction industry has been the locomotive of Hong Kong's economic and social development. It has provided the city with a world-class infrastructure thus enabling it to develop and prosper. It has assisted the Housing Authority (HA) in providing over 900,000 public housing units which accommodate nearly half of Hong Kong's population. These achievements have not only won worldwide recognition, but have also laid down a solid foundation for Hong Kong to meet the challenges of the new millennium.

1.2 In 1998, the construction industry employed 320,000 people, nearly 10% of Hong Kong's total workforce. It contributed 6% to Hong Kong's Gross Domestic Product. Looking ahead, it is clear that the industry will continue to play a vital role in maintaining Hong Kong as world-class metropolitan city. In the coming decade, amongst much other infrastructure, it will help us to build -

- new housing for an increasing population. The public sector alone will build 50,000 flats annually
- a series of new strategic rail and road networks, including the West Rail, new extensions to the Mass Transit Railway
- modern community and social facilities which will enrich our livelihood
- new enhancements to the city's economic attractions, including the Science Park, Cyberport and Disneyland

Maintaining a modernized and efficient construction industry is thus crucial for sustaining our continuing development.

Meeting the Quality Challenge

1.3 Whatever our success, there is always room for improvement. Although the construction industry has assisted Hong Kong to deliver many large complex projects, its performance in delivering quality housing has been less promising. There has been growing dissatisfaction amongst stakeholders^{Note 1} on building quality. Recently, poor workmanship in some public housing projects has aroused

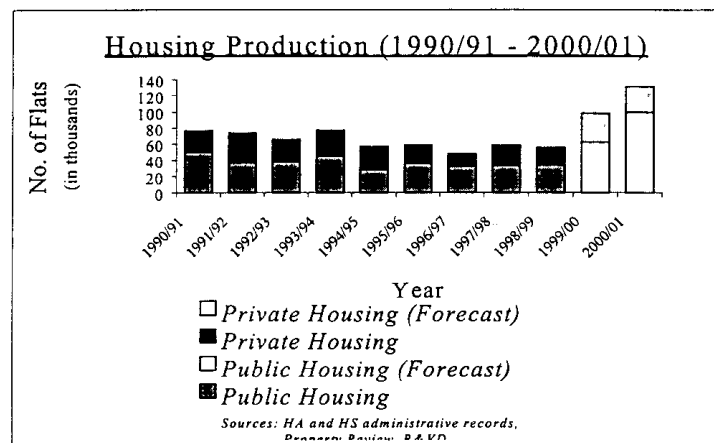
Note 1 Stakeholders in this document generally refer to all those involved in housing production, including: the HA, the HD, contractors, consultants, workers, suppliers, training authorities, professional institutes and trade associations, tenants and owners

much public concern. In a few instances, the quality problems were associated with piling works which could have undermined structural safety. This is not acceptable. The HA is determined to enhance the quality of public housing in Hong Kong.

1.4 Indeed, other countries have carried out similar reviews to uplift the quality and the competitiveness of their construction industry. For example, in the United Kingdom, a Construction Task Force headed by Sir John Egan was established to examine means to modernize the operations of the construction industry. The Task Force published their findings in a report entitled "Rethinking Construction" in 1998. Similarly, in Singapore, a Construction Manpower 21 Committee was set up in May 1998 to address the problems in its own construction industry. The Committee published its recommendations in a report entitled "Construction 21" recently. Hong Kong is therefore not alone in meeting this building quality challenge.

Chapter 2 : Problems Perceived

2.1 The HA is the largest housing provider in Hong Kong. To date, it has provided about 645,000 rental and 300,000 home ownership units. Its construction programme is huge, with work underway on 140 sites, comprising about 190,000 new housing units. Capital construction expenditure in 1999/2000 is budgeted at HK\$28billion. In 2000/01 alone, the HA will complete over 90,000 new units. This level of housing production is unprecedented.



2.2 As the largest housing developer in Hong Kong, the HA has been taking a leading role in promoting building quality. In the 1990s, we have upgraded quality assurance in the industry by requiring International Organization for Standardization (ISO) certification for our contractors and consultants. We have promoted the employment of trade-tested workers and site safety campaigns through contract requirements. We have improved construction productivity and quality through the use of prefabricated components and large-panel formwork. Public housing designs and buildability have also been improved with the introduction of the Harmony and Concord blocks. With the concerted efforts from the Government and the industry, we have assisted in upgrading the buildability of public housing and the professionalism of the industry.

Rising Community Expectation

2.3 Given the community's rising expectation on building quality, the quality agenda will be broadened to "Total Quality" in the 21st Century. Apart from satisfying customers' rising expectation in design and engineering quality, we need to address increasing emphasis on technological and process improvement. We also need to tackle growing community concerns on how construction will impact on our workforce, economic competitiveness and the environment.

2.4 Our recent indepth diagnosis of building quality problems suggests that there are some inherent weaknesses in both the construction industry and the public housing production system, which together compromise building quality. The particular pressure of the recent production peak has exposed these weaknesses. These weaknesses and the problems of building quality which flow from them can be viewed from the perspectives of both stakeholders and the community. The views of both are set out below to provide a context for our proposals for change.

Perspective of Stakeholders

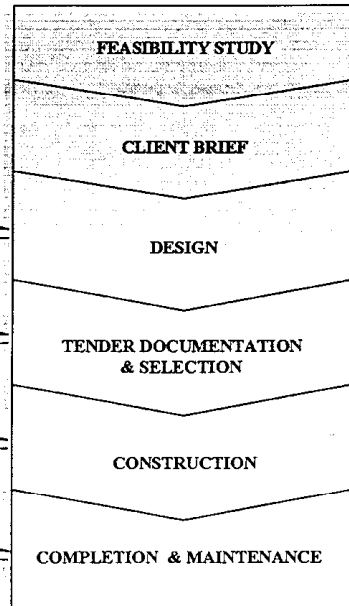
2.5 Building is a complex business, involving inputs and participation from many stakeholders. In the case of public housing, we may appraise the problems from the perspectives of three key stakeholders: the industry, the HA and customers.

Involvement of Stakeholders throughout Housing Production

PROJECT DEVELOPMENT STAGES

STAKEHOLDERS (The industry)

- Consultants including architects, engineers & quantity surveyors
- Contractors and sub-contractors
- Suppliers
- Government
- Professional institutes
- Contractors associations
- Training authorities
- Workers



STAKEHOLDERS (Housing Authority / Housing Department)

- Developer
- Project manager
- Project teams including architects, planners, engineers and quantity surveyors
- Management and maintenance teams

• Tenants & owners

STAKEHOLDERS (Customers / Public)

- (a) *From the industry's perspective*, perceived problems include : heavy workload and tight construction programmes; cut-throat competition in tendering; high mobility of workers and sub-contractors; unfair reward and punishment mechanism; lack of skilled workers and professionalism; periodic general labour shortages; changing expectations of customers; lack of mutual trust with developers; cumbersome and inflexible practices of the Housing Department (HD).

- (b) *From the HA's perspective*, perceived problems include : confusion in roles and responsibilities amongst stakeholders; heavy and uneven workload and tight completion schedules; lack of partnering with contractors and consultants; inadequate supervision by consultants and contractors; overly rigid systems and practices within the HD.
- (c) *From the customers' perspective*, perceived problems include : poor workmanship; lack of adequate avenues for recourse against developers; lack of third-party audit on public housing; over-emphasis on tender prices rather than quality; lack of incentive for public bodies to improve and innovate; poor project supervision; and multi-layered sub-contracting activities.

Perspective of the Community

2.6 From a macro perspective, the community expects the industry to perform better in three areas -

(a) *Reducing construction costs*

Hong Kong's building costs are amongst the highest in developed countries.

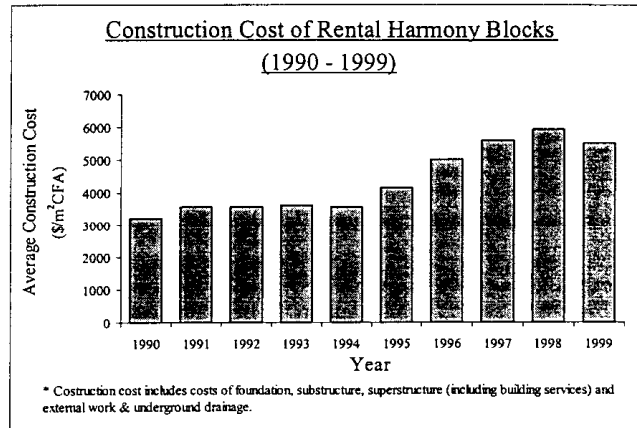
**Comparison of private residential construction costs
amongst major developed countries
(August 1998)**

Multi-storey Buildings	Hong Kong	United Kingdom	Australia	Singapore	United States
High quality	1,300-1,750	1,225	900-1,100	1,000	850-950
Medium quality	1,200-1,300	1,000	850-900	800	700-800
Ordinary quality	1,000-1,200	850-1,050	800-850	700	-

(Source: *Levett & Bailey Chartered Quantity Surveyors and Franklin & Andrews (Hong Kong) Ltd. All costs are in US\$ per Construction Floor Area (CFA) m²*)

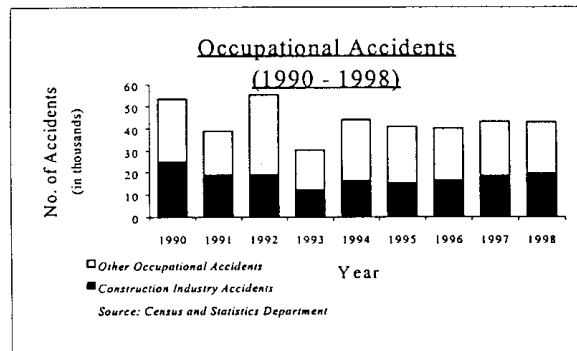
(Note: *Costs may vary as exchange rates fluctuate. Variations in building designs and regulations in different regions will affect comparisons*)

Indeed, the construction cost of the HA's rental Harmony blocks increased by nearly 55% between 1994 and 1999.



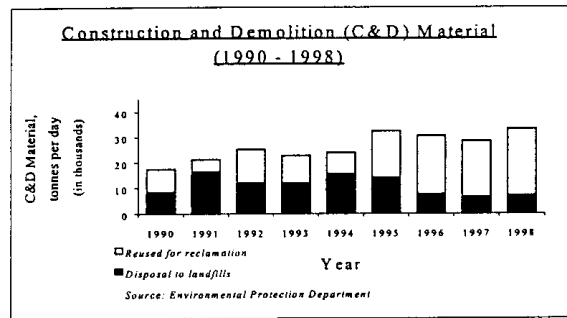
(b) Reducing accidents

Construction sites have traditionally been regarded as dangerous places. Despite the safety campaigns launched in recent years, the industry's safety record is poor. In 1998, the number of accidents in construction industry accounted for nearly 45% of all occupational accidents in Hong Kong and fatal accidents constituted 80% of the overall total. Inadequate site safety management, lack of safety awareness amongst workers and supervisors, and time-based bonus systems may contribute to this.



(c) Reducing waste

Between 1994 and 1998, the total volume of construction and demolition material^{Note 2} increased by 40%. In 1998, about 7,000 tonnes of construction and demolition waste were brought to landfills each day, while about 27,000 tonnes of public fill were reused for reclamation daily.



2.7 Some of these problems have existed for a long time and recent incidents serve as an over-due wake-up call. They can help the industry to focus on these problems and re-think the operations. It is time for all stakeholders to tackle these problems decisively and together to enhance building quality and safety in the new millennium.

^{Note 2} Construction and demolition (C&D) material is a mixture of inert and organic material arising from site clearance, excavation, construction, refurbishment, renovation, demolition and road works. The inert material, known as public fill such as excavated soil and rock, concrete and debris from demolition, is suitable for reuse in reclamation and site formation works. Some of it can also be used for recycling into material for construction. The organic non-inert material called C&D waste such as timber, paper, glass, junk, general garbage should be disposed of at landfills.

Chapter 3: Vision for Change

3.1 In mapping out the direction for reforms, it is important to identify the core problems involved, set the vision for change and develop reform strategies. Having analyzed the problems identified in the previous chapter, we have drawn up a 4-pronged strategy aimed primarily at enhancing public housing quality, but which we sincerely hope will also engender a wider industry reform.

Lessons from Problems

3.2 The perceived problems from different stakeholders and the community can be summarized as follows -

- (a) Heavy workload and fluctuating production arising from previously uneven land supply
- (b) Lack of a common drive to deliver quality housing, with time and cost considerations often preceding quality
- (c) Confusion of roles and responsibilities amongst stakeholders on project implementation and quality supervision
- (d) Fragmented production process which hinders product improvement and process re-engineering
- (e) Lack of partnering and mutual trust between developers and contractors
- (f) Primitive industry structure which is labour-intensive and characterized by multi-layered sub-contracting
- (g) Inadequate level of training and employment stability amongst construction workers
- (h) Little investment in research and product development
- (i) The HD's overly rigid systems and cumbersome practices
- (j) Inadequate project supervision

- (k) Insufficient commitment to social goals, including site safety, the environment and construction costs

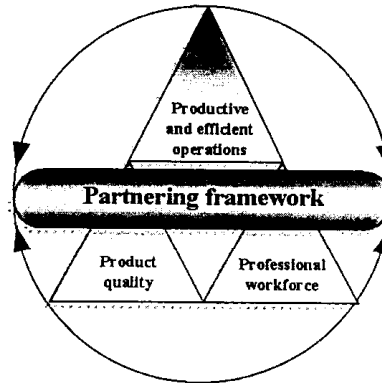
Our Vision

3.3 The above problems are all inter-related. To tackle them effectively, we need to set out our vision for reform clearly. In our view, the vision for the construction industry in the new millennium should be-

"To provide quality housing together with all stakeholders through partnering and sustained improvement such that the community can take pride in our housing construction"

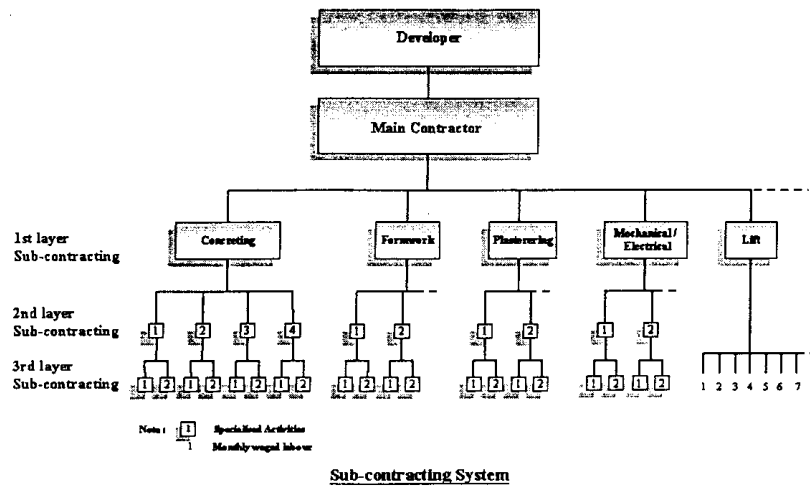
3.4 Quality construction should not be judged solely by the final product. It should also be reflected in the production process. All stakeholders should have a sense of commitment and common purpose in striving to achieve this vision. Thus in order to realize this vision, we intend to adopt a 4 "P" strategy which focuses on -

- (a) **Partnering** : Building up a partnering framework amongst all stakeholders
- (b) **Product quality** : Assuring product quality
- (c) **Professionalism** : Investing in a professional workforce
- (d) **Productivity** : Striving for productivity and efficiency



Partnering Vision under the 4 "P" strategy

In subsequent chapters, we will demonstrate how our vision for quality housing can be achieved through the 4 "P" strategy.



7.7 While recognizing the need for the sub-contracting system, we notice that some unscrupulous main contractors and sub-contractors have assigned their entire jobs to others. They act as little more than brokers. This kind of unrestrained multi-layered sub-contracting activity has given rise to two main problems -

- (a) Main contractors have lost control over the quality and progress of works by sub-contractors.
- (b) Because of the profiteering activities in-between different contractors, the final delivery agents have to work on unrealistically low budgets and are hence tempted to cut corners.

7.8 The HA recognizes that some degree of sub-contracting is necessary but does not allow total assignment of works under existing contractual provisions. We also recognize that the problem of multi-layered sub-contracting cannot be resolved easily. Hence, we will expect the Government and the industry to address the issue jointly. **From the HA's viewpoint, we will -**

4.4 Part of realizing this quality objective relies on stakeholders taking pride in their work and having a sense of ownership of the final product. **The HA will reinforce the commitment of stakeholders to delivering quality housing at two levels -**

- (a) At the strategic level, **we will draw up a Quality Partnering Charter to signify and reinforce stakeholders' commitment to delivering quality housing.** We will invite our business partners and stakeholders to sign the charter and pledge their commitment in producing quality buildings through partnering.
- (b) At the project level, **we will reinforce the commitment of stakeholders to the success of projects by highlighting their participation.** We will consider erecting foundation stones in all new public housing developments to register the names of consultants, contractors, suppliers and HD's project teams. We will also examine the feasibility of listing their names in our sale brochures and publications. These measures serve both to symbolize the partnering spirit and to increase the sense of ownership and commitment of stakeholders during project implementation.

Clear Roles and Responsibilities

4.5 The existence of a large number of stakeholders has sometimes meant that some confusion in roles and responsibilities is unavoidable. However, this confusion, if not properly addressed, can compromise the partnering spirit and even building quality. For example, some stakeholders still believe that responsibility for delivering quality housing falls squarely and solely on property developers. However, as illustrated in the previous supply chain, housing production requires input from all stakeholders at different stages. Quality housing is the business of every stakeholder. **It is important to define clearly the roles and responsibilities of key stakeholders and thereby maximize the benefits of their contributions and interaction.**

4.6 In the case of public housing, we believe that the key roles and responsibilities of main stakeholders should be reflected as follows -

(a) *The Government, as the policy-maker and regulator should -*

- (i) assess long-term housing demand and set realistic and steady production targets for the public housing sector
- (ii) provide a steady and sufficient serviced land supply to facilitate an even housing production
- (iii) facilitate the construction industry to strive for quality improvement

(b) *The HA, as the largest public housing developer, should -*

- (i) provide public housing to meet demand as assessed by the Government
- (ii) establish a policy framework and formulate strategies for the delivery of quality public housing
- (iii) establish clear project requirements, quality benchmarks and acceptance standards
- (iv) facilitate quality improvement and innovation
- (v) oversee the HD in delivering the public housing programme

(c) *The HD, as the executive arm of the HA, should -*

- (i) advise the HA on the best means to provide quality public housing cost-effectively
- (ii) set out clear and realistic project requirements and guidelines for contractors, consultants and suppliers under the HA's policy framework
- (iii) ensure statutory compliance in planning, design and construction of public housing
- (iv) monitor and inspect the work of consultants and contractors to make sure that they meet the HA's requirements on quality, time and budget

- (v) provide specialist advice and support to the HA

(d) *Consultants, may perform one of the following three main roles, depending on the nature of work for which they are engaged in -*

- (i) As design team leaders, they should provide professional support and advice to the HA in terms of planning, design and statutory compliance
- (ii) As commissioned contract managers, they should -
 - manage and inspect contractors' works, as if they are the HD's in-house contract managers
 - ensure works is in compliance with the HA's requirements and statutory safety provisions
- (iii) As specialist service providers, they should -
 - advise on new designs and technologies
 - provide technical support or advice according to their expertise

(e) *Contractors and workers, as the works delivery agents, should -*

- (i) supervise the construction process to meet safety and professional standards
- (ii) deliver work on time, within budget and up to contract requirements

(f) ***Professional institutes and trade associations, as the industry's guardians of professional standards, should -***

- (i) maintain and develop codes of practice to uphold the industry's ethics and professionalism
- (ii) facilitate compliance of professional ethics and standards amongst members
- (iii) facilitate the development of new ideas and products for continuous improvement

(g) ***Training authorities, as the training agents, should -***

- (i) provide continuous training to participants in the industry
- (ii) develop new training programmes for meeting the industry's new needs and requirements
- (iii) conduct trade-testing for workers

(h) ***Tenants and owners, as customers of the final product, should -***

- (i) be able to expect quality housing and have recourse against developers for any defects
- (ii) provide feedback so that improvements can be made in the production process where practicable

4.7 The above broad classifications of roles and responsibilities is by no means exclusive and does not aim to segregate the contributions of different stakeholders. Rather, it aims to assist in focusing on their main roles and the interaction between them.

Equitable Risk-sharing

4.8 Equity is fundamental to building up an effective partnering framework. Construction is an inherently risky business and an equitable sharing of risk is a pre-requisite for cultivating a win-win philosophy for all parties. While risks may not be removed completely, we should reduce them pro-actively. As a responsible developer and partner, **the HA will review current risk-sharing arrangements with contractors and consultants. In particular it will -**

- (a) **widen the use of the "engineer's design" for piling projects in sites with complicated geotechnical conditions.** This will reduce piling contractors' risks arising from uncertain site conditions.
- (b) **review the basis for determining liquidated damages for piling and building contracts.** At present, the levels of liquidated damages are derived from consequential revenue loss arising from delay in completion of the whole project.
- (c) **set clear time-frames for submission/substantiation of claims for time and money by contractors and the HD's response/assessment.** This will give both sides clear indicators on service standards.
- (d) **review the payment of prolongation costs arising from the granting of time extensions due to inclement weather in the extended contract period.**
- (e) **review the effectiveness of on-demand bonds for building and piling contractors by the end of 2000 when the scheme has been in operation for a year.**

Feedback and Communication

4.9 Candid and continuous communication amongst stakeholders is indispensable to fostering a cordial partnering framework. The HA will initiate a series of measures to ensure that stakeholders' views and feedback are properly reflected throughout the production process.

4.10 To start with, **we will strengthen our communication channels with key stakeholders at all levels and stages -**

- (a) At the top level, **the HA will host a partnering conference annually with the top management of major contractors, consultants and suppliers to exchange views and map out directions for improving the delivery of quality public housing.**
- (b) At the departmental level, **the HD's directorate staff will hold workshops regularly with the senior management of contractors, consultants, suppliers, professional institutes, to look into new methods for improving buildability and to address issues of common concern.**
- (c) Before project commencement, **the HD's project teams will hold partnering meetings with all project consultants and contractors so that the implementation approach can be mapped out and agreed beforehand.** Thereafter, we shall continue with our established monthly meetings to monitor the progress of projects. These progress meetings should also facilitate the resolution of works-related problems.
- (d) After project completion, **the HD's project teams will conduct review workshops with suppliers, contractors and consultants to appraise the overall implementation process and identify areas for improvement.**

4.11 Some disputes are unavoidable and existing contracts include arbitration and mediation clauses to facilitate their resolution. However, experience shows that most stakeholders rely on more costly and time- consuming routes such as litigation and extended arbitration to resolve problems. We believe that it is not healthy and therefore **we will explore the use of adjudication and/or Dispute Resolution Advisers (DRA) in complex building contracts.** We are aware that DRA have been used in Government's large-scale projects and the feedback has been very positive. Our guiding principle will be a swift resolution of problems. At the operational level, issues must be settled within a pre-determined time period, failing which, parties should be able to raise any unresolved

problems immediately to higher levels with the expectation of a speedy decision. Similarly, all parties should be able to expect a quick, clean and economical process for resolving contractual disputes.

4.12 In addition, we must address the needs of customers as end- users of our product proactively, bearing in mind that their expectations are rising progressively. Thus, **we will -**

- (a) **step up the collection of feedback from tenants and owners on building designs and quality through regular surveys and focus group meetings.** The HD's design and project teams will solicit first-hand information from customers direct.
- (b) **commission regular consultancy studies to tap the market's latest feedback and trends on housing designs.**
- (c) **set up a dedicated unit in the HD to study market trends and customer needs for making future improvements.**

Objective Performance Appraisal

4.13 The HA is committed to maintaining an objective, open and fair performance appraisal system for contractors and consultants. For building contractors, the Performance Assessment Scoring System (PASS) has been the key device to assess their performance since 1990. However, having regard to their feedback on the objectivity and sampling coverage of the current PASS, **we will introduce PASS 2000 from April 2000 onwards to enhance its representativeness and coverage.** Under PASS 2000, the outcome will be derived objectively through a three-tier system: including daily site inspection records from site staff, monthly reports from project professionals and quarterly reports from an independent team.

4.14 The performance of consultants is currently assessed through the HD's consultant performance reports. However, there have been complaints that the system is too subjective and does not provide clear guidelines for appraisal. At the same time, gradings tend to be too narrow for effective demarcation of different levels of performance. Hence, **we will further review the appraisal system for consultants to enhance its objectivity and consistency. We will draw up clear guidelines to provide benchmarks for performance evaluation.**

Balanced Reward and Punishment

Disciplinary Mechanism

4.15 At present, the HA's Building Committee (BC) is responsible for reviewing the listing status of contractors and consultants and taking disciplinary actions in the form of tendering suspension, demotion, or removal from listings. The List Management Committee (LMC) and the Consultants Review Board (CRB) are the HD's fora to monitor contractors and consultants' performance respectively and provide recommendations to the BC for decision. The HA will take a hard-line against all non-performing contractors and consultants.

4.16 Whilst recognizing that the HA's decisions on hiring contractors are essentially commercial, some contractors and consultants have expressed the view that the existing disciplinary mechanism is not sufficiently objective, as the BC is both a decision-making and review body. In order to enhance the independence and objectivity of our disciplinary mechanism, **we propose -**

- (a) **reviewing the composition and terms of reference of the LMC and the CRB so that they will become decision-making bodies.** We recommend that non-official members to chair these fora and BC members to be included to increase its transparency and accountability.
- (b) **drawing up more detailed guidelines for decision-making by the LMC and the CRB.**

- (c) **designating the BC as a separate review mechanism over decisions of the LMC and the CRB.** The establishment of a separate review channel in the BC should strengthen public confidence in the objectivity of our disciplinary mechanism.
- (d) **taking prompt action against non-performing contractors and consultants, and impose severe penalties when necessary.** We will send a clear message to the industry that the HA will only team up with responsible and competent partners.
- (e) **publishing the performance scores of contractors and consultants when the performance appraisal systems mature.**
- (f) **engaging independent agents to conduct investigation for major malpractices discovered in the construction process.**

Tendering

4.17 As an accountable public body responsible for a very large budget, the HA is duty bound to ensure that its procurement policies secure value-for-money. The HA has thus for many years operated an open and competitive tendering to identify competent business partners for both works and consultancy contracts. The HA always supports healthy competition within the industry for making improvements.

4.18 There is a common perception, however, that the HA always awards contracts to the lowest bidders and hence quality is sacrificed. This is not the case. Our tender evaluation covers assessments on technical, financial, performance, workload and contractual aspects. The general principle is to award the contract to the lowest bidder provided that he satisfies all other technical requirements. The system thus strikes a balance between tenderers' potential performance and also their fee submissions.

4.19 Recently, we have improved our tendering system to encourage good performance from building contractors through the introduction of the Preferential Tender Award System (PTAS) and the Bonus Scheme. The PTAS has been in place since September 1999 and uses a 80:20 score weighting between tender price and performance to assess the performance and capability of contractors systematically. Under the Bonus Scheme introduced for projects tendered out from September 1999 onwards, good performers will be rewarded with a bonus up to \$7.5 million or 1% of net contract sum, whichever is the lower. The bonus is awarded with regard to contractors' performance at both the completion and maintenance stages.

4.20 **As a further step towards enhancing our tendering system, we will address five issues -**

- (a) **First, we will extend the PTAS and the Bonus Scheme to cover building services and piling contracts.** We believe that the basic principles enshrined in these two schemes can be applied to all works contracts, with corresponding upgrading in the relevant performance appraisal systems.
- (b) **Second, we will tighten up our listing and tendering arrangements to ensure that only competent contractors will be allowed to join the tendering exercises.** On the other hand, we will encourage competent new players to become our partners.
- (c) **Third, we will review the current 80:20 score weighting between price and performance by the end of 2000 when the new scheme has been in operation for one year.** We shall also re-examine the methodologies and components for determining the price and technical scores.
- (d) **Fourth, we will explore the means to exclude exceptional low bids from tenderers.** We may make reference to our cost estimates, median tender prices or other relevant indicators to screen out exceptionally low bids from tender evaluation.

- (e) **Fifth, we will explore the feasibility of establishing strategic partnerships with consistent top performers.** While it is our firm belief that the tendering system must be open, fair and competitive, we also treasure the opportunities and benefits from building up a "long-term" relationship with strategic partners, who consistently deliver very promising quality work. Strategic partnering may indeed induce contractors to invest more in new technologies and demonstrate more commitments in upgrading the professionalism of the industry. Initially, **we will consider -**
- (i) **establishing a "premium league" so that top performers with consistently outstanding performance may enjoy better tendering opportunities than others.** For very large-scale building projects for example, we might confine the tendering exercise to a few top performers
 - (ii) **offering serial contract opportunities for subsequent phases of very large projects subject to outstanding performance**
 - (iii) **awarding special and urgent projects to very top performers through negotiation rather than tendering.**

The strategic partnering concept, if adopted, would supplement our competitive tendering system but would not replace it.

4.21 For consultancy projects, the split between technical and fee scores is 50:50 for normal design projects and 70:30 for complex projects. Feedback from both consultants and the community favours putting greater emphasis on performance and technical capability. **We will improve the tendering arrangements for consultancy projects, including -**

- (a) **revising upwards the weighting between technical and fee scores from 50:50 to 70:30 under the "Two- envelope System"**
- (b) **exploring the exclusion of exceptional low bids from tender assessment**

- (c) **establishing a "premium league" of consultants**
- (d) **tightening up listing and tendering requirements of consultants to focus on competent players**

4.22 With a common quality-driven agenda, all stakeholders should contribute in enhancing building quality progressively. We believe that the proposals in this chapter will foster a partnership for continuous cooperation and a culture of quality.

Chapter 5: Assuring Product Quality

5.1 The partnering framework that exists at the strategic level will provide an environment conducive to the delivery of quality buildings. Within this framework, we must also develop an effective supervision system to ensure that quality output is delivered at the project level. Quality assurance is thus a major target throughout the construction, completion and handover stages. In this chapter, we will elaborate the HA's initiatives on quality monitoring, site supervision, third-party audit, defect rectification and use of guarantees. Indeed, quality housing should also start with good designs and improving buildability which we will explain our initiatives in greater details under Chapter 7.

Quality Monitoring

5.2 Minute and continuous supervision at every stage and step of the housing construction process by the HA/HD is unrealistic and would be highly inefficient. With the partnering arrangements described in the last chapter, it should also be unnecessary. Instead we must have an effective and focused quality monitoring system, including, three key elements, namely : benchmarking, milestone monitoring, and quality supervision plans.

5.3 Benchmarking is a crucial step in defining the acceptance standard of a project. It translates contract specifications into physically and visually accessible standards for appreciation and adherence amongst contractors, customers, workers and supervisory staff. It has always been the HA policy that sample flats built at construction sites should represent the minimum acceptance standard for all projects. In response to the suggestion of contractors that there should be a clearer indication of our quality benchmark, we **intend to identify "designated sample flats" from construction sites to provide realistic acceptance benchmarks for contractors in submitting tenders and to follow during construction.** We will make sure that sample flats in each project are clearly identified and accessible to all site staff at all times. **We also intend to produce video tapes or CD ROM on building methods/installation procedures to strengthen contractors and workers' awareness of desirable working procedures.** These will cover critical items, such as plastering, tiling, concrete finishes, painting, metal work and plumbing. We will liaise with the Hong Kong

Construction Association (HKCA) and the Construction Industry Training Association (CITA) on this.

5.4 As construction is a lengthy process, we must also establish an effective progress monitoring system. **We will draw up a list of milestone check-points against all critical activities to monitor contractors' progress**, such as staged completion of superstructure and installation of building services. This will help contractors to rectify problems at source and hit sequential project targets on time and quality. **We will consider linking up these milestone achievements to the Bonus Scheme, contract payments and performance appraisal.**

5.5 As the majority of construction activities are carried out on site, effective site management is crucial. In 1997, the Buildings Department introduced a Site Safety Supervision Plan under which building professionals and contractors are required to submit to the Buildings Authority a supervision plan on site safety before consent is granted. The plan specifies the minimum staffing and qualification requirements on safety supervision according to the complexity of works involved. Taking this spirit one step forward, **we intend to require all contractors and consultants to submit Quality Supervision Plans at the tendering stage to set out their project management proposals.** This plan will cover staff resources, including both the number and their qualifications attained, that will be deployed for project management, a tentative supervisory plan for sub-contractors and workers, and a preliminary plan to achieve building quality and site safety. With clear Quality Supervision Plans, the HA, contractors and consultants should have a more solid basis for monitoring the construction process and safeguarding building quality.

Site Supervision

5.6 We fully recognize public concern over the importance and adequacy of site supervision. Indeed, the HD, contractors and consultants should strengthen their resources in this aspect. Specifically, we should strengthen professional input so that resident professionals will be available as field commanders to resolve site problems and to ensure that high construction standards are met at all times. Adequate and competent site supervisory staff should also help to strengthen the productivity of workers. **We will strengthen on-site supervision at three levels, i.e. the HD, consultants and contractors -**

(a) **For the HD, we will -**

- (i) **deploy resident professionals to all piling projects and large-scale building projects e.g. those involving commercial centres.** This will strengthen professional input on sites to monitor progress and performance.
- (ii) **provide adequate and competent supervisory staff to all sites according to their expertise.** We will ensure that one Works Supervisor will be deployed for each building block and one Clerk of Works and one resident professional will be provided for multi-blocks projects. In the next six months, we shall deploy additional site staff, comprising four Clerks of Works and twenty-five Works Supervisors, to take care of building contracts.

(b) **For consultancy projects, we will require consultants to -**

- (i) **deploy resident professionals to supervise their projects,** similar to the practice and the manning scale of the HA's in-house projects.
- (ii) **deploy their own professional staff as site staff if open recruitment is difficult.**

(c) **For contractors, we will -**

- (i) **raise the professional requirements of core site supervisory staff in contracts,** including Quality Control Engineers, Site Agents, Site Foremen and etc.

- (ii) **explore the feasibility of requiring contractors to designate staff with professional qualifications and sufficient experience as Quality Control Managers to oversee the quality of construction works and site safety issues.**

5.7 Strong, dedicated and competent site supervision teams are crucial to ensure that all critical steps in the building process are carried out properly. They should tackle problems at source rather than leaving defects to be rectified at the completion stage.

Third-party Audit

5.8 As "government buildings", the HA's housing projects have been exempted from the scrutiny under the Buildings Ordinance. This however does not imply that our buildings are in any sense sub-standard. Far from it, the HA's building standards and requirements are entirely comparable and consistent with those set by the Buildings Department for private developments.

5.9 While there are no doubts that the HD staff are competent to enforce these requirements, we recognize the community's legitimate expectation that there should be an objective third-party scrutiny of our work. Hence, **we have no objection to put the HA's buildings under the control of the Buildings Ordinance in the long run and will discuss with the Government on this proposed transfer.** As the proposal involves vast legislative, programming and resource implications, we will need to study them carefully and take time to arrive at an amicable arrangement with the Government. In the meantime, we shall strengthen the internal audit function within the HD.

Dealing with Defects

5.10 We will ensure that contractors address any defects discovered after occupation speedily without undue disturbance to tenants and owners. We will hence step up both before and after-sales services.

5.11 A number of sections of the HD are now involved in the final inspection stage for project handover. Contractors consider this plurality of checking parties tends to generate confusing messages and duplication

of work. **We will streamline our handover inspection procedures to minimize overlapping in inspections and establish clear acceptance authority.** Our aim is to provide clear and consistent directions on defect rectification and handover standards.

5.12 Since 1998, the HA has introduced a series of measures to improve our after-sales services. We have agreed to use the project vote temporarily to rectify latent defects in advance and seek reimbursements from contractors' afterwards. Any unresolved disputes between the HA and contractors on repair responsibilities will not affect our services to customers. In addition, we have set out under contract provisions a time schedule for contractors to make good general defects.

5.13 On top of these measures, **we will ask contractors to attend to defects after in-take more speedily -**

- (a) **For new contracts, contractors will be asked to provide standby defect rectification teams** with multi-skilled workmen to tackle defects speedily.
- (b) **For existing contracts, term maintenance contractors will be engaged to provide repair services if project contractors do not respond speedily.** We will seek reimbursement from original contractors afterwards.
- (c) **The amount of retention money will be increased to 2% of the contract sum** and the pace of release will tie in with contractors' progress and performance in dealing with defects.
- (d) **The Defect Liability Period will be extended from 1 to 2 years** to better safeguard the interests of residents against defects which may only surface after a full seasonal cycle.

Structural Guarantee

5.14 The HA fully recognizes customers' legitimate expectation for quality housing. We are indeed committed to achieving this goal. To give firm quality assurance to customers, **the HA will provide a 10-year structural safety guarantee for all new and existing Home Ownership Scheme (HOS) and Private Sector Participation Scheme (PSPS) developments from the date of completion. The terms and conditions of the structural guarantee will be similar to those under the Tenants Purchase Scheme^{Note 3}.** For HOS, the HA will provide the guarantee as a developer. For PSPS, we will recommend the Government requiring all PSPS developers to provide similar guarantees for new projects to be tendered out in future. For existing and uncompleted PSPS developments, the HA will undertake structural repairs for and on behalf of owners if the PSPS developers fail to repair upon the legitimate demands from owners. We will seek reimbursement for such repairs from PSPS developers so liable separately. There are altogether about 152,000 HOS and PSPS units completed between 1990 and 1999. The HA will always ensure that all new units to be sold are structurally safe.

5.15 We believe that contractors should also demonstrate both their commitment and confidence in delivering quality products. **We have commissioned a consultancy study to examine the viability for contractors to provide warranties for their projects so that owners can have a direct redress channel through insurance policies secured by contractors.** This arrangement will provide a third-party check on contractors' performance, as consistently poor performance attracts a higher insurance premium. The consultancy study will be completed by April 2000.

5.16 Clear-cut quality benchmarking and a reinforced supervision system should lift output quality. Our customers should also enjoy better after-occupation services from contractors under the improved guarantee and defect rectification systems.

^{Note 3} The HA would be responsible for all structural repairs, including those necessitated by spalling and cracking, to any or all of the structural components (including all columns, beams, walls and floor slabs) deemed necessary to uphold the structural stability and integrity of the building as a whole structure within the guarantee period of 10 years.

Chapter 6: Investing in a Professional Workforce

6.1 People are the most valuable asset in the construction industry and a professional workforce is very important to the delivery of quality construction. In many developed countries, the construction industry is characterized by a professional and respectable workforce. Hong Kong lags sadly behind.

6.2 In Hong Kong, construction sites have always been regarded as dangerous and dirty places. Mobility of both workers and sub-contractors is high under the multi-layered sub-contracting and daily-wage systems. The value of training has not been fully recognized and the industry has failed to attract new blood. Substantial changes in its culture and operations are required to build up a professional workforce. This transformation however cannot be effected without the full support of the Government, property developers, contractors, workers and training authorities. In building up a professional local workforce, we need to -

- (a) uplift the industry's status
- (b) develop a visionary training strategy
- (c) recognize the value of professionalism
- (d) improve site safety

Uplift the Industry's Status

6.3 It is important to build up an industry in which workers take pride in their work. Job security and a clear career path are important elements for the industry to attract and retain talents and thereby enhance workers' commitment to quality. The Government should work closely with the industry to promote the use of direct or contract labour so as to give a sense of belonging and job security to workers.

6.4 We fully appreciate that the nature of the construction industry and the fluctuating workload make the use of casual labour inevitable. However, we also recognize that some reputable property developers and contractors are increasingly employing contract workers. The results are promising and the system does work, and we believe that the industry should actively widen the use of contract workers. The employment of contract workers should start from core trades and positions and their proportion should be increased progressively.

6.5 **The HA will consider requiring contractors to employ a certain proportion of contract workers in core trades by themselves and through their nominated sub-contractors and domestic sub-contractors**, e.g. levellers and mechanics. By providing greater job security to workers and more certainty to contractors, we can restrain multi-layered sub-contracting and uplift the professionalism of the industry. (*see also para. 7.6 below*) We indeed recognize that last year the HKCA, the CITA and the Real Estate Developers' Association (REDA) jointly proposed that contractors should employ direct labour. We will work out the implementation details with these parties and aim to introduce a pilot test for piling projects.

6.6 At the same time, the Government and the industry should jointly implement registration for workers. Currently, as there are no entry requirements for the industry, any worker or firm can simply turn up and claim to be a member. This results in poor discipline and monitoring problems. The registration system will not only provide greater recognition to the industry and workers, but will also screen out unqualified workers. **The HA will support the Construction Workers' Registration System as a means of enhancing the industry's professionalism and will be glad to see its early implementation.**

Develop a Visionary Training Strategy

6.7 While acknowledging that both the CITA and the Vocational Training Council (VTC) have provided valuable training courses to a large number of construction workers, less than 20% of the total workforce on sites are trade-tested. The HA supports the development of a visionary training strategy for the industry to upgrade the quality of the workforce through continuous learning.

6.8 **From the HA's viewpoint, training authorities should address four issues urgently.**

- (a) First, **more training courses should be provided for site management and supervisory staff** as they are key change agents in upgrading building quality. We will require more qualified supervisory staff in our new projects. As public housing has a lion share in the overall construction activities, tailor-made training courses should be provided for this purpose.
- (b) Second, **training courses should reflect the spirit of continuous learning and advancement.** The training programmes should be reviewed and intensified to match the changing needs of the industry and also the introduction of new technologies.
- (c) Third, **CITA's basic craft courses should be modified to attract new blood and to reduce the drop-out rate** which is currently at about 25%. Very often, the lack of exposure to new and tough working condition on sites is the main contributory cause. While after-graduation counselling services and the Pilot Employers Subsidy Scheme have helped to address the problem to some extent, the CITA may consider introducing on-site practice in the curriculum to enable candidates to remain within the industry after graduation.
- (d) Fourth, **training authorities should closely liaise with the Independent Commission Against Corruption (ICAC) to strengthen ethical training for candidates.** Upholding professional integrity and ethics are important to deter corruption and to enhance professional conduct.

Both the HA and the HD are willing to participate actively in drawing up new and expanded training programmes with these training authorities.

Recognize the Value of Professionalism

6.9 Proper recognition of the benefits of training is important to facilitate the development of professionalism. The provision of training must be linked up with requirements of the job market. The Government and training authorities should develop a hierarchy of qualifications for different aspects of trades so that both workers and supervisory staff can be induced to progress on the training advancement ladder. Trade-testing has proved to be an effective means to recognize the value of training. At present, the CITA provides 16 types of trade-testing for different trades at both intermediate and full test levels. The number and coverage of trade tests should be expanded progressively to uplift the overall professionalism of the industry and to keep pace with new innovations in building technology.

6.10 To promote the industry's professionalism, **the HA will put greater emphasis on the professional and trade-test requirements for site supervisory staff and workers. We will -**

- (a) **increase the proportion of trade-tested workers from 35% to 60% under our contracts in three years' time.** We aim to improve the quality of workers and recognize the value of training.
- (b) **specify and enhance the qualifications and experience requirements for site supervisory staff** under the new Quality Supervision Plans.

Improve Site Safety

6.11 A radical improvement to safety is necessary in its own right. It would also go a long way to enhancing the image of the industry. A safe working environment is a basic requirement for attracting and retaining workers. The HA has been working closely with the Government, the CITA and the Occupational Safety & Health Council to publicize the importance of site safety. The HA has been paying for Green Card/Silver Card training and the Safety Audit Scheme and has been promoting the awareness of site safety through the annual Site Safety Campaign. We have also progressively strengthened site safety requirements in contract provisions and have given increased weight in assessing tendering opportunities.

6.12 The fact that the accident rate in HA's construction sites is nearly 50% lower than the overall industry's average suggests that these measures have been effective. However, more must be done. We therefore propose to -

- (a) **implement the "Pay for Safety Scheme" to enhance contractors' safety performance.** Instead of providing a lump-sum payment to assist contractors in providing specified safety provisions, our payment will only be effected if these provisions have been provided on sites. We will also specify the minimum threshold for safety provision budget during tendering exercises.
- (b) **impose heavier penalty on non-performing contractors regarding site safety.** From August 1999 onwards, we suspended contractors from tendering if they had received Labour Department's suspension notices or were involved in the Works Bureau's panel hearings. Starting from the first quarter of 2000, we will automatically suspend contractors from tendering if they secure an unsatisfactory site safety audit score. Safety audit results will be consolidated into PASS 2000 for assessing contractors' overall performance.
- (c) **require contractors to develop more detailed site safety management guidelines under the Quality Supervision Plans.**

6.13 It is important that all stakeholders invest in the building up of a professional workforce. The Government should take the lead in this reform and the HA will contribute proactively. A safe working environment, a secure career path, good prospects for advancement and full recognition of training by the market are necessary to facilitate the professionalization of our construction workforce.

Chapter 7: Striving for Productivity and Efficiency

7.1 As stakeholders' expectations of building quality are increasing, we need to improve construction techniques and operations progressively. As part of our move along this direction, we need to demonstrate how the industry and the HA can work together in realizing these objectives by addressing the following issues -

- (a) Improved buildability
- (b) Integrated production process
- (c) Sub-contracting
- (d) Construction period and costs
- (e) Departmental reforms
- (f) Environmental conservation

Improved Buildability

7.2 To date, the construction industry is still a labour-intensive industry. As such, building quality is usually dependent on the input and quality of individual workers. Over the past decade, the HA has taken the lead in reducing this dependency through the wider use of standard block designs, precast facades, drywalls and standard building components. With these improvements, we can expect greater certainty in contractors' performance over time, cost and quality. In the years to come, **the HA will continue to promote mechanization of the construction process through the wider use of system formwork and prefabricated building components.**

7.3 Continued research and development is the key to quality improvements and production breakthroughs. For instance, with the HA's encouragement, some contractors have been using "jump lifts"^{Note 4} in construction sites to facilitate vertical transportation during construction and to enhance site safety and management. **To promote research**

Note 4 "Jump lifts" are passengers/materials transportation system at construction stage using the permanent lift shaft as the temporary support while the superstructure works progress.

within the building industry, the HA will consider the following initiatives -

- (a) **Introduce the concept of "Technology Leading to Total Quality" into tender assessments.** Tenderers who can innovate by providing proposals to enhance buildability and quality will be given higher technical scores during tender evaluation in recognition of their positive contribution.
- (b) **Establish an annual Excellence Award Scheme to recognize the contributions of new building innovations.** We will consider sharing the productivity gains with innovators on more efficient building methods and better building materials.
- (c) **Set up an HA Research Fund to encourage and assist research.** Initially, we shall set aside \$20 million for this purpose in the first year. Tertiary institutes and the industry can better explore and develop new construction methods, technologies and materials under this fund.
- (d) **Draw up a systematic research plan by the HD annually to identify major study areas.**
- (e) **Facilitate the wider use of information technology in the construction industry.**

Integrated Production Process

7.4 At present, the building process in Hong Kong is too fragmented and there is insufficient experience-sharing amongst architects, engineers, contractors, workers and suppliers. As quality buildings require a harmonious integration of the upstream design and downstream construction processes, we must ensure that a more integrated production process is developed. If contractors and suppliers cannot adjust their building processes, methods and components correspondingly, good building designs may not necessarily turn out to be quality products.

7.5 The promotion of a partnering spirit amongst stakeholders and the conduct of various partnering conferences and workshops will help us to bring stakeholders closer together. **To assist in the development of an integrated production process, the HA will -**

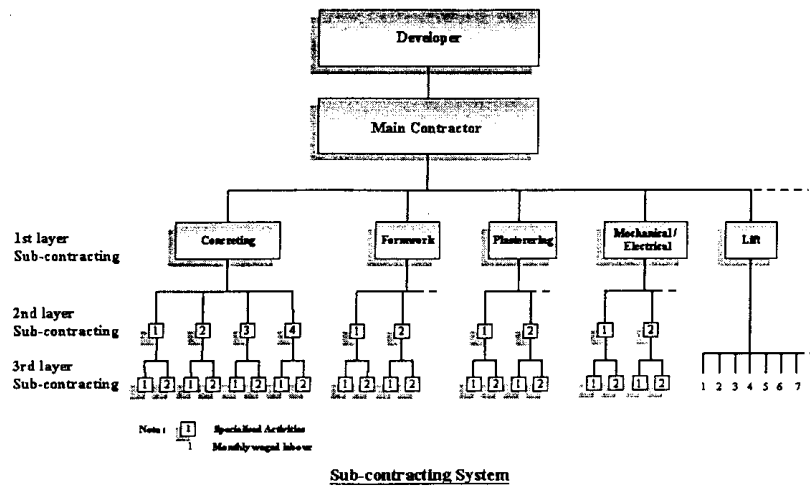
- (a) **consider launching a pilot "design-and-build" building project.** The project should serve as a model to enhance the buildability of public housing and engender a better team spirit amongst stakeholders.
- (b) **facilitate the wider use of "non-standard" building designs** to make the best use of consultants' expertise and to enrich the variety of public housing.
- (c) **conduct regular workshops with contractors, consultants, suppliers, academics and professionals to explore new means to facilitate the integration of construction process and to enhance buildability.**
- (d) **review the operation of the "Nominated Sub-contracting System" for improving production efficiency.** At present, the HA adopts a Nominated Sub-contracting System in which main contractors have to engage building services sub-contractors on our approved lists to install specialist items. Concern has been expressed that the present system may lead to segmentization of the construction process and contractual interface problems. In the private sector, main contractors have the freedom to choose other professional sub-contractors. As part of fostering a partnering spirit and construction productivity, we will review the need for this system and other alternative arrangements.
- (e) **launch a consultancy study to examine how our procurement policy in building materials and components can optimize the life-cycle costs of buildings.** Apart from considering the value-for-money of building components at the development stage, we will also consider actively their long-term implications on management and maintenance. We need to do more to secure long-term durability and ease of maintenance for our clients.
- (f) **provide greater flexibility to contractors over the use of building materials by widening the choices under our**

approved lists of building materials and allowing them to propose alternatives. We will review our approved lists of materials annually to ensure that they reflect the latest market trends and new products.

- (g) **review the relative merits of appointing architect-led consultants over direct appointment of specialist consultants.** At present, where consultants assume the contract managers' role, we expect the architects to line up other professional consultants e.g. engineers and surveyors to deliver the work. This approach achieves one-stop service and provides a clear line of responsibility. Nevertheless, we have received suggestions that direct appointment of individual consultants by the HA may enable different disciplines to share experience more fruitfully. We shall review the current system and explore the feasibility of increasing the use of direct employment of consultants for major projects. In the meantime, we will review the performance appraisal system for sub-consultants to ensure that their performance is assessed objectively by the HD.

Sub-contracting

7.6 Given the complexity and wide coverage of building projects, some degree of sub-contracting is unavoidable. Main contractors have to engage specialist sub-contractors to assist them in the delivery of projects. Sub-contracting also provides a flexible means of meeting fluctuating workload and maximizing the utilisation of expertise in the industry.



7.7 While recognizing the need for the sub-contracting system, we notice that some unscrupulous main contractors and sub-contractors have assigned their entire jobs to others. They act as little more than brokers. This kind of unrestrained multi-layered sub-contracting activity has given rise to two main problems -

- (a) Main contractors have lost control over the quality and progress of works by sub-contractors.
- (b) Because of the profiteering activities in-between different contractors, the final delivery agents have to work on unrealistically low budgets and are hence tempted to cut corners.

7.8 The HA recognizes that some degree of sub-contracting is necessary but does not allow total assignment of works under existing contractual provisions. We also recognize that the problem of multi-layered sub-contracting cannot be resolved easily. Hence, we will expect the Government and the industry to address the issue jointly. **From the HA's viewpoint, we will -**

- (a) **support the formation of an Organized Specialist Sub-contractors System** which aims to provide a consolidated list of capable sub-contractors. We appreciate work already done by the HKCA, CITA and REDA on this new initiative. By confining sub-contracting to contractors with long-term commitments in the businesses, good knowledge of the trade and direct workers, we can restrain multi-layered sub-contracting and enhance the overall quality of contractors.
- (b) **require main contractors to submit a list of sub-contractors at all levels to us under the Quality Supervision Plans for reference.** This will give us a clearer understanding on the delivery of work.
- (c) **promote the use of contract workers in core trades through contract provisions and better tendering opportunities.** Wider use of contract workers will help to constrain multi-layered sub-contracting to some extent.

Construction Period and Costs

7.9 Although there is a strong and urgent demand for public housing, we will not sacrifice building quality simply to meet production targets. At present, the normal construction period of building contracts is around 26 months. We fully appreciate that the more stringent environmental and site safety standards introduced in recent years, together with our increasing emphasis on quality supervision may require lengthening of the works period.

7.10 To allow sufficient time for contractors to deliver quality housing under our new initiatives, **we will consider extending the normal construction period for new piling and building contracts by 1 and 2 months respectively.** In the long run, we believe that process re-engineering and new technological innovations will help to reduce construction period progressively. With a steady and sufficient land supply, there is no need to force the pace. We are confident that the proposed revision of contract periods will not affect our ability to achieve our various public housing pledges, including the reduction of waiting time for public rental housing.

7.11 At present, Hong Kong's building costs are amongst the highest in developed countries. Why this should be so is not clear. It may

be related to our building designs, specifications, methods of construction or a number of other factors. With the increasing emphasis on building quality and the revision of the tendering system to focus more on technical performance, tender prices may increase further in the short run. However, we strongly believe with the successful implementation of the reforms, the productivity and efficiency of the industry will increase. Improvement in buildability, reduction in non-valued-added sub-contracting activities, emergence of a professional workforce should all help to drive down construction costs progressively.

7.12 In order to better ascertain the reasons for our relatively high construction costs, **we will commission a consultancy study to analyse the causes for the relatively high construction costs for residential developments.** The study will also look into the construction costs of multi-storey residential buildings in selected foreign countries to provide comparative studies for our analysis.

Departmental Reform

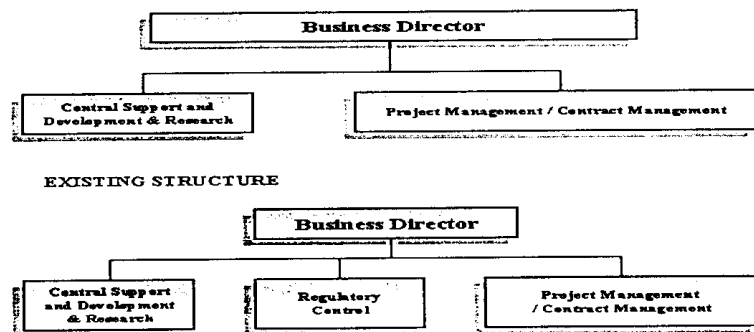
7.13 Within the HD's Development and Construction (D&C) Branch, there are three Project Divisions, each headed by a Project Director, undertaking both project management and contract management functions. The central service and support function is undertaken by the Development Division. This system has functioned well in securing the housing production targets. However, the overlapping roles and responsibilities under the current system, together with recent quality problems in construction, have prompted the need to review the current set-up. **To re-inforce our partnering with other stakeholders, the HD will reform the operations of the D&C Branch -**

- (a) **re-organize the D&C Branch into three core functional lines** : research and development, project management and regulatory control for achieving better check-and-balance.
- (b) **re-inforce the emphasis on reviewing building designs and requirements by deploying experienced and appropriate staff to undertake the reviews and related researches.**
- (c) **strengthen project management so that Project Directors** will have direct responsibility of controlling quality, budget and programming. Under each Project Director, there will

be a clear functional structure with easily identified contact points in planning, design, contract management and consultant management to enable consultants and contractors to secure our guidance and assistance. The roles and responsibilities of different units will be clearly defined.

- (d) **streamline decision-making by further delegation of authority and staff empowerment.** Directorate staff can focus more on strategic policy development and implementation. We shall streamline procedures for reducing unnecessary paper work.
- (e) **strengthen the leadership of site inspection teams by deploying resident professionals** to take on management and decision-making responsibilities on site in assuring building quality.
- (f) **strengthen the vetting and audit functions by establishing the Regulatory Control Division,** which would provide third-party monitoring independent from project management.

7.14 With a more efficient and responsive organizational culture and practice, the HD should be well placed to establish partnerships with other stakeholders in the delivery of quality housing.



NEW STRUCTURE

Existing and new structures for the HD's Development and Construction Branch

Environmental Conservation

7.15 Apart from providing quality housing, the HA is also committed to maintaining a sustainable and quality environment. As enshrined in its Environmental Policy Statement endorsed in July 1999, the HA will continually strive to improving environmental standards in the provision of public housing and related services.

7.16 Throughout the years, the HA has taken a pro-active role in reducing waste generated from construction activities. For instance, the use of large panel metal formwork in building works since 1985 has achieved an estimated saving of 783,300 metric tonnes of timber. Through our giant share in the construction market and our procurement policy, we have induced our contractors to put greater emphasis on environmental conservation.

7.17 To further demonstrate our commitment to conserve the environment and to respond to the Government's call for making Hong Kong an ideal home, **we will plan for a pilot "Green Estate" where the concept of sustainable development will be developed.** This environmental-friendly estate will comprise unique initiatives in design, waste treatment, anti-pollution and energy conservation. We will liaise with relevant government departments and environmental concern groups to develop this new concept. We intend to try out this demonstration project in an urban housing site to demonstrate the feasibility of developing such a quality estate within the city.

7.18 In addition, the HA has been working on a number of environmental initiatives. We will -

- (a) **pursue more environmental-friendly buildings under the HK-BEAM (Residential).** HK-BEAM is a system for environmental rating of new and existing buildings through the design and construction processes. The HA has assisted in the development of a new version for residential buildings. The pilot assessment trials on HA buildings commenced in December 1999.

- (b) **reduce waste arising from the decoration of new flats by providing different levels of fitting-out.** For new sale flats, we are exploring the feasibility of providing three standards of fitting-out for purchasers' selection, i.e. basic, standard and enhanced, to better meet the needs and preferences of individual owners.
- (c) **improve the cleanliness of new estates through the installation of the Automated Refuse Collection System** for new housing projects to be completed after 2001.
- (d) **consider extending the Waste Management Plan to cover building and piling contracts.** For civil and demolition works, contractors have been required to sort out inert and non-inert materials and breakdown large debris for proper disposal or re-use.

7.19 With a renewed emphasis by the industry on research and an integrated production process, we are confident that evolving new building designs and methods will enable us to meet both new challenges and customers' expectations. In the long run, we can achieve shorter construction periods, lower costs, higher quality and environmental-friendly buildings.

Chapter 8: Addressing Existing Public Concerns

8.1 With the full implementation of new strategies and initiatives outlined in the previous sections, our building quality should progressively improve. Nevertheless, we fully appreciate the prevailing public concern and are committed to providing safe and quality buildings to our customers. We will therefore introduce a series of measures to tackle two current public concerns, i.e. piling works and the production peak.

Piling Works

8.2 The most fundamental obligation of the construction industry is to deliver safe buildings. The HA will ensure that this requirement is met at all times and without exception. We will not tolerate any sub-standard piling works. However embarrassing, the discovery by the HD of recent isolated malpractices reflects the fact that our monitoring system works. At present, the BC operates an "Early Warning System" under which the details of any sub-standard building projects are released to the public whenever they are discovered, along with the HD's proposed follow-up and remedial actions. This system has worked well and has increased our transparency. The challenge is to make it work better. In this spirit, we will introduce a series of further measures to safeguard the quality of piling works.

8.3 **In the short run, we -**

- (a) **will provide a resident engineer for each piling contract to strengthen the professional input and monitoring.** We will ensure that the resident engineer and the site supervision team will monitor and witness all critical stages of the piling works, e.g. coring, to make sure that they are properly carried out.
- (b) **are re-checking the piling works of all 106 uncompleted projects to ensure that they all meet the required standards.** The whole exercise will be completed in two months. Enhancement works will be made whenever necessary.

- (c) **will tighten up the control on sub-contracting activities of piling works.** We will require all main-contractors to seek our agreement on the use of their sub-contractors. For large-diameter bored piles and driven piles, we will require the main contractors to own and deploy at least 50% of the piling plants to demonstrate their close supervision of this important work.
- (d) **will engage independent consultants to witness and endorse the final acceptance tests at the end of the piling contracts.** These will cover critical aspects, including coring and loading tests which are necessary to verify the pile founding levels and the strength of the piles. Instead of allowing contractors to undertake final acceptance tests, we will conduct these tests by our own testing contractors to enhance the independence of the testing process. These measures will enhance the objectiveness of our piling works.
- (e) **will commission an independent consultant to audit the HD's piling works who will report direct to the BC half-yearly.** The consultant will advise on the adequacy of the HD's piling works supervision system and the performance of selective projects with a view to making further improvements.
- (f) **will review the use of pre-cast pre-stressed concrete piles and tighten up implementation specifications.** We will not use this piling method for projects where site conditions do not favour its use.
- (g) **will widen the use of engineer's design for sites with complicated geotechnical conditions.** This will reduce the risks of contractors in problematic sites.
- (h) **will deploy 37 additional dedicated site staff to supervise in-house piling works, and strengthen the manning-scale of consultants' piling projects.**

- (i) **will take a more flexible approach in considering requests from piling contractors to extend the works period of their contracts in hand where there are practical and genuine grounds for doing so.**

8.4 **In the medium to long run, we will consider -**

- (a) **increasing the qualification and experience requirements for contractors' core site staff.** We will ensure that contractors have competent staff to supervise this important task.
- (b) **extending the use of sonic tubes to all large diameter bored-piled projects so that 100% checking can be made if necessary.**
- (c) **establishing the HA's own list of piling and geotechnical investigation contractors.**
- (d) **establishing Piling PASS to assess contractors' performance more thoroughly and to introduce the Preferential Tender Award System to induce consistent good performance from piling contractors**
- (e) **reviewing the basis for determining liquidated damages for piling contracts to achieve equitable risk-sharing.**

8.5 As some of the recent piling problems may involve corruption and commercial fraud, **the HA will work closely with the Government and other stakeholders to uphold the industry's ethical integrity. We will -**

- (a) **continue to work closely with the ICAC in detecting and investigating malpractices.** We shall liaise with the ICAC to review our supervision system to identify further improvements for reducing the chances of corruption.

- (b) **recommend that the Government should review the levels of fines regarding sub-standard building works in order to provide a meaningful deterrent** against unscrupulous contractors and consultants.
- (c) **urge relevant trade associations and professional institutes in the industry to develop a Code of Practice and other sanction systems** to promote the importance of professional integrity amongst their members.

8.6 As the Building Committee's Investigation Panel on Accountability has been looking into the piling problems in Tin Shui Wai, we will make reference to the findings and recommendations of this panel for further improving our piling projects when they are available.

Production Peak

8.7 Over compensation for the land supply problem has resulted in some 190,000 new units currently under construction. This production peak has imposed particular pressure and challenges on all those in the supply chain. With the establishment of the Steering Committee on Housing and Land Supply, we look forward to having a steady land supply in the future. Feasts and famines benefit nobody in the industry. A stable land supply and hence a steady housing construction programme are crucial for the healthy development of the industry.

8.8 Despite the production peak and the strong demand for public housing, the HA will not sacrifice quality for quantity. We will stick to our established quality standards. Shoddy products will simply not be accepted even at the expense of programming delays. To cope with the completion of a large number of flats, we will -

- (a) **conduct more surprise checks by Project Managers and audit teams for all on-going projects.** This will strengthen our quality supervision and tackle quality problems at source.

- (b) **contract out part of the final inspection work of new flats to independent monitoring professionals.** This will enable the HA to deal with the upsurge in workload given the existing staff resources. It will also enhance the independence and objectiveness of our inspection work.
- (c) **draw up a special operation plan for taking over the large number of new flats scheduled for completion in 2000/01,** including providing more intensive training for property management agents and accelerating their involvement in taking over new flats, as they will be the management agents.

These three initiatives will help us to safeguard our quality standards at the completion stage and to steer through the production peak.

Chapter 9: Way Forward

9.1 If Hong Kong is to prosper, it is vital to have a world-class construction industry to lay the infrastructural foundations for development and to construct first-class commercial facilities and quality homes for the community. The industry is so important for our future that we cannot allow it to stagnate. In this public consultation document, we have outlined four broad strategies and a number of new initiatives to improve construction quality. We would value your advice and support in taking these proposals forward.

9.2 As a strategic public consultation document, we have set out only the broad directions of reform and remained silent on much of the implementation details. We have done this deliberately to stimulate a constructive and extensive discussion within the industry and the community on these proposals during a 2-month public consultation exercise which will end on 31 March 2000. We would encourage all stakeholders and interested parties to convey their views to us. Having considered these, we will refine the proposals and draw up concrete plans for implementation, covering both targets and timing. These will cover both short-term and long-term initiatives for enhancing building quality of our public housing.

9.3 As we have repeatedly emphasized, the delivery of quality housing is everybody's business. With your support and contribution, we intend to realize our vision-

"To provide quality housing together with all stakeholders through partnering and sustained improvement such that the community can take pride in our housing construction."

9.4 We expect all stakeholders to benefit from this partnering process and quality reform-

- (a) Property developers will deliver quality buildings more cost-effectively.
- (b) Contractors will deliver their jobs more efficiently and establish a cordial and long-term relationship with property developers.

- (c) Consultants will have more opportunities to contribute their expertise and new ideas into the production process and upgrade general building design and quality.
- (d) Workers will gain a new professionalism through training and commanding higher social recognition.
- (e) Customers will get quality housing and enjoy more guarantees and better services from contractors and developers.
- (f) Society as a whole will benefit from a more competitive, efficient, environmental-friendly construction industry which can sustain our future development.

Thus, it is important for all of you to let us have your comments on this document.

Feedback Channel

The public consultation exercise will last until 31 March 2000. The HA welcomes your views on the recommendations in this document. Feedback can be provided to us via -

- (a) mails : Attn: Assistant Director/Special Duties
Hong Kong Housing Authority
Headquarters
7/F., Block 1,
33 Fat Kwong Street,
Ho Man Tin, Kowloon.
- (b) e-mail : consult.quality@housingauthority.gov.hk
- (c) fax : 2762 7547

2. The contents of this document are available on the internet at :
<http://www.info.gov.hk/hd/>

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