

Optimization Of Land Use

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Prepared by

**Miss Eva LIU
Mr Jackie WU
Mr Joseph LEE**

**Research and Library Services Division
Legislative Council Secretariat**

4th Floor, Central Government Offices (West Wing)
11 Ice House Street, Central, Hong Kong
Telephone : (852) 2869 7735
Facsimile : (852) 2525 0990

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EXECUTIVE SUMMARY

1. Optimization of land use refers to :
 - promoting an acceptable standard of environment and amenity for the population;
 - ensuring an appropriate balance between the population and the capacity of infrastructure required to service it; and
 - maintaining an efficient intensity of land use and safe levels of development and population.
2. Accurate population projections are crucial in planning for the provision of land and infrastructure. Based on population projections, territorial plan such as Territorial Development Strategy and local plans such as outline zoning plans (OZPs) are formulated. These plans outline the current and future requirements of land and infrastructure, which subsequently affect the residential density of an area. When population projection under-estimated actual growth, housing demand and flats and land requirements were also under-provided.
3. Similarly, when population growth was under-estimated, infrastructure developments (e.g. highway network and railway network) for the community became under-estimated and under-provided. As infrastructure is a constraint to raising the plot ratio (PR) of a certain site, under-provision of infrastructure hinders the efficiency in the intensity of land use for development.
4. Besides, there lacks a contingency plan which safeguards the achievement of the original targets if there is an under-estimation of population growth. Similarly, there is a lack of safety margin in population projections. The lack of this safety margin aggravates the under-provision of land and infrastructure.
5. Based on the projection made in 1992 that the population would be 6.5 million in 2011, one of the main targets of the Metroplan was to restrict population in the metro area to 4.2 million. That is to say, the non-metro area has to accommodate the remaining 2.3 million (now projected to be 3.6 million) population. This would burden the infrastructure in the non-metro area, particularly when actual population grew faster than planned.
6. Although the government recognizes the need to provide sufficient transport infrastructure and has earmarked funds for housing-related infrastructure projects, spending on transport-related projects remains low and late. This is due to the administrative delays in processing these works.

7. Environmental standards have become a significant constraint in optimizing land use because they reduce the number of flats allowed to be built. However, the problem can be resolved by the adaptation of environmental standards taking into account such factors as efficient intensity of local land use and an acceptable standard of environment and amenity for the local population.
8. Re-development can take place to achieve optimization of land use if planning is done now to make use of appropriate opportunities. Re-development of Ma Tau Kok can be such an opportunity. This re-development could take place progressively over the next five to 10 years which would allow the government to upgrade the infrastructure to meet the demands of the new land use.
9. A low PR limits the number of flats that can be built in an area and therefore restricts its development potential. More than a quarter of the zoned residential area in Hong Kong is designated for very low density (PR less than 1) development in OZPs. The problem is most acute in the rural areas of the New Territories, where 96.4% of the zoned residential area has a PR of less than 1.
10. A review of the residential density guidelines seems necessary, as there have not been any major revisions since the Hong Kong Planning Standards and Guidelines was adopted in 1979.
11. Production of housing and infrastructure on time to meet the population needs is one crucial element in maintaining an efficient intensity of land use. However, delays have been caused by the differing requirements of different government departments. Further delays are brought about by the lack of a time limit, in the case where the revision of the PR is rejected and the applicant decides to appeal.
12. The central business district is over-concentrated in certain areas. This generates huge pressures on the transport system. Measures aiming at decentralizing the central business district so as to achieve a more balanced distribution of jobs should be considered.

Abbreviations

| | |
|-------|---|
| ASD | Architectural Services Department |
| CDA | Comprehensive Development Area |
| CED | Civil Engineering Department |
| CPLD | Committee on Planning and Land Development |
| CSD | Census and Statistics Department |
| CWRF | Capital Works Reserve Fund |
| DPA | Development Permission Area |
| DPO | District Planning Office |
| DR | Development Ratio |
| DSD | Drainage Services Department |
| EPD | Environmental Protection Department |
| GF | Gross Floorspace |
| GFA | Gross Floorspace Area |
| GIC | Government/Institution/Community |
| HA | Housing Authority |
| HB | Housing Branch |
| HD | Housing Department |
| HKPSG | Hong Kong Planning Standards and Guidelines |
| HOS | Home Ownership Scheme |
| HS | Housing Society |
| HWD | Highways Department |
| LD | Lands Department |
| NEA | Net Estate Area |
| NSA | Net Site Area |
| OZP | Outline Zoning Plan |
| PB | Planning Brief |
| PD | Planning Department |
| PELB | Planning, Environment and Lands Branch |
| PR | Plot Ratio |
| PRH | Public Rental Housing |
| PSPS | Private Sector Participation Scheme |
| R1 | Residential Density Zone 1 |
| R2 | Residential Density Zone 2 |
| R3 | Residential Density Zone 3 |
| R4 | Residential Density Zone 4 |
| RLS | Research and Library Services Division |
| RR1 | Rural Residential Density Zone 1 |
| RR2 | Rural Residential Density Zone 2 |
| RR3 | Rural Residential Density Zone 3 |
| RR4 | Rural Residential Density Zone 4 |
| RR5 | Rural Residential Density Zone 5 |
| SCH | Sandwich Class Housing |
| SRDS | Sub-regional Development Strategy |
| TD | Transport Department |
| TDD | Territory Development Department |
| TDS | Territorial Development Strategy |
| TPB | Town Planning Board |
| WB | Works Branch |
| WSD | Water Supplies Department |

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OPTIMIZATION OF LAND USE

PART 1 --- INTRODUCTION

1 Background

1.1 At the request of the Sub-committee on Long Term Housing Strategy Review of the Legislative Council Panel on Housing, the Research and Library Services Division (RLS) of the Legislative Council Secretariat conducted a research on the optimization of land use in Hong Kong. This follows the studies on Land Supply in Hong Kong (RP08/96-97) and Supply of Flats (RP09/96-97), both completed in April 1997.

1.2 Optimization of land use¹ refers to :

- promoting an acceptable standard of environment and amenity for the population;
- ensuring an appropriate balance between the population and the capacity of infrastructure required to service it; and
- maintaining an efficient intensity of land use and safe levels of development and population.

2 Objective and Scope

2.1 The objective of this report is to provide analysis on the optimization of land use. The report also examines briefly the government policy on residential density.

2.2 Part 2 of this report gives an overview of the planning system in Hong Kong. This comprises discussions on :

- planning in Hong Kong;
- density zoning policy;
- residential density; and
- zoning in Hong Kong.

¹ This follows the objectives of density policy of the government and is echoed by academics and professional bodies.

2.3 Part 3 outlines the procedures that need to be adopted in revising residential density. Private housing and public housing are discussed separately. Difficulties encountered by private developers and public development agencies are also presented.

2.4 Part 4 provides analysis on the optimization of land use in the context of Hong Kong.

3 Methodology

3.1 To obtain the necessary information and statistics, the RLS reviewed materials including Hansard, Legislative Council papers and government reports. Moreover, the RLS discussed with government officials, academics, and representatives of professional bodies and research institutes. Enquiries were sent to Housing Branch (HB), Planning, Environment and Lands Branch (PELB), Works Branch (WB), Housing Authority (HA), Housing Society (HS), Housing Department (HD), Planning Department (PD), Real Estate Developers Association of Hong Kong, Hong Kong Institute of Real Estate Administration, Hong Kong Association for the Advancement of Real Estate and Construction Technology, Hong Kong Institute of Planners, Hong Kong Institution of Engineers, Hong Kong Institute of Architects, and Hong Kong Institute of Surveyors.

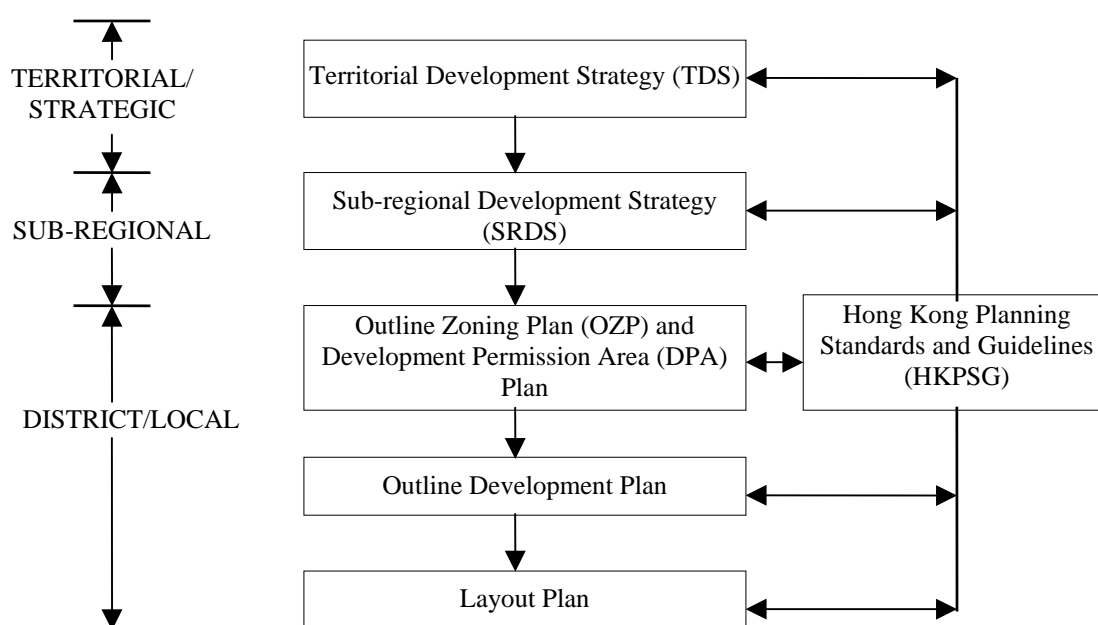
3.2 This research report is based on the available information from these sources.

PART 2 --- PLANNING AND ZONING IN HONG KONG

4 Planning in Hong Kong

4.1 In Hong Kong, planning forms the basis for the integration of government policies on land use, balancing population settlement, infrastructure development and environmental and amenity concerns. Planning is carried out at three levels: the territorial, sub-regional and district planning. Figure 1 presents the types of plans involved in each level. Appendix I elaborates in detail the purpose and use of these plans.

Figure 1 - Hierarchy of Plans



Source : PD, "Town Planning in Hong Kong: A Quick Reference"

5 Density Zoning

5.1 Density zoning policy sets the framework for residential development in the main urban area in Hong Kong. Approved by the Executive Council in 1966 and incorporated in the HKPSG, it sets limits to the intensities of residential development in the main urban areas of Hong Kong Island and Kowloon. The main urban areas, shown in Figure 2, are divided into the three Density Zones :

- | | |
|---------------------|--|
| Density Zone 1 (R1) | <ul style="list-style-type: none">• covers the major part of the built-up areas of Hong Kong Island and Kowloon• permitted maximum plot ratio (PR)²: 8 to 10 (Appendix II) |
| Density Zone 2 (R2) | <ul style="list-style-type: none">• covers mainly the Mid-levels on Hong Kong Island and parts of Central Kowloon• permitted maximum PR: 5 |
| Density Zone 3 (R3) | <ul style="list-style-type: none">• covers the lower density residential areas e.g. the Peak, Repulse Bay and areas to the north of Lung Cheung Road• permitted maximum PR: 3 |

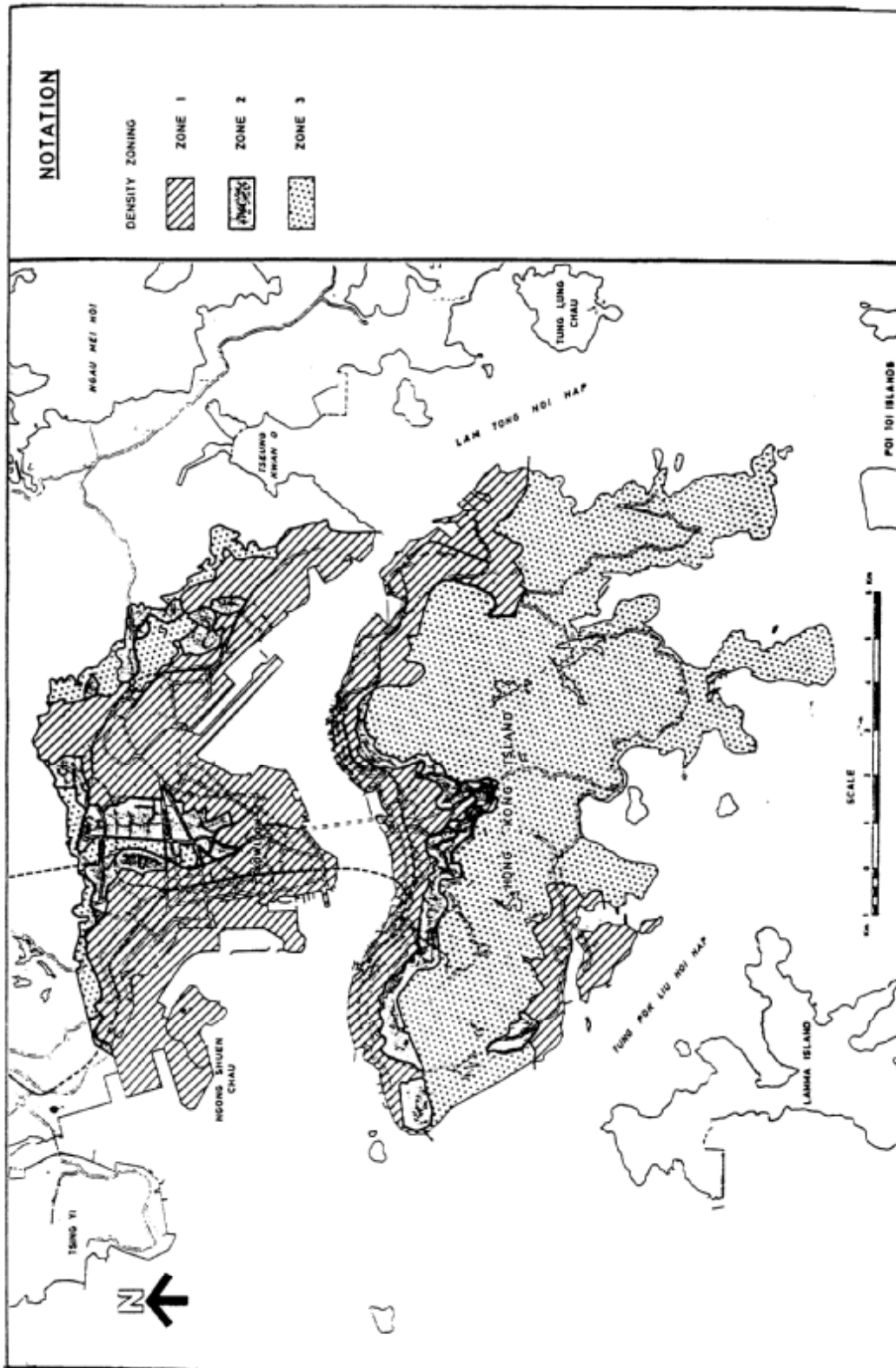
5.2 In addition, a Density Zone 4 (R4) is applied in some areas of the New Territories. The maximum PR is 0.4. This zone is applied to areas where, for topographical, geotechnical, infrastructure, conservation, environmental or other reasons, low-rise and low-density residential developments could be permitted. Appendix III discusses the density zoning system in greater detail.

5.3 Apart from density control, there are other development controls including the control imposed by the Town Planning Ordinance, Buildings Ordinance, and other ordinances. Details are presented in Appendix IV.

5.4 For information, there were major revisions of the density zoning policy in 1979. The revisions mainly concerned upgrading living environment and promoting amenity for the population in part through amending residential density and in part through administrative measures. Since then, the basic density zoning regime remains unchanged.

² Plot ratio (PR) is a ratio between gross floorspace area (GFA) and net site area (NSA).

Figure 2 - Density Zoning of Hong Kong and Kowloon



Source : PD, HKPSG

6 Residential Density

6.1 Residential density is a significant factor in land use planning. Residential density is a quantitative measure of the intensity with which land is occupied by either development or population. Residential density controls the distribution of population, which in turn determines the planned provision of infrastructure such as transport, utilities and community facilities.

6.2 Housing development is controlled through a ratio of habitable floor space to ground area. Although the broad approach to residential density is similar for private and public housing, there are differences in site area definitions between the two sectors, as shown in Figure 3. Density guidelines are therefore presented separately.

Private Housing

6.3 The density of development in private housing is controlled through plot ratio (PR). PR is a ratio between gross floor area (GFA) and net site area (NSA). In other words,

$$\text{GFA} = \text{NSA} \times \text{PR}$$

6.4 Given a fixed NSA, the only means to increase GFA is to raise PR. Conversely, if PR is restricted, GFA is restricted, thereby restricting the development potential of the site.

6.5 PR governs the amount of GFA in buildings, but affects population density indirectly due to other factors such as flat size and person per flat ratio.

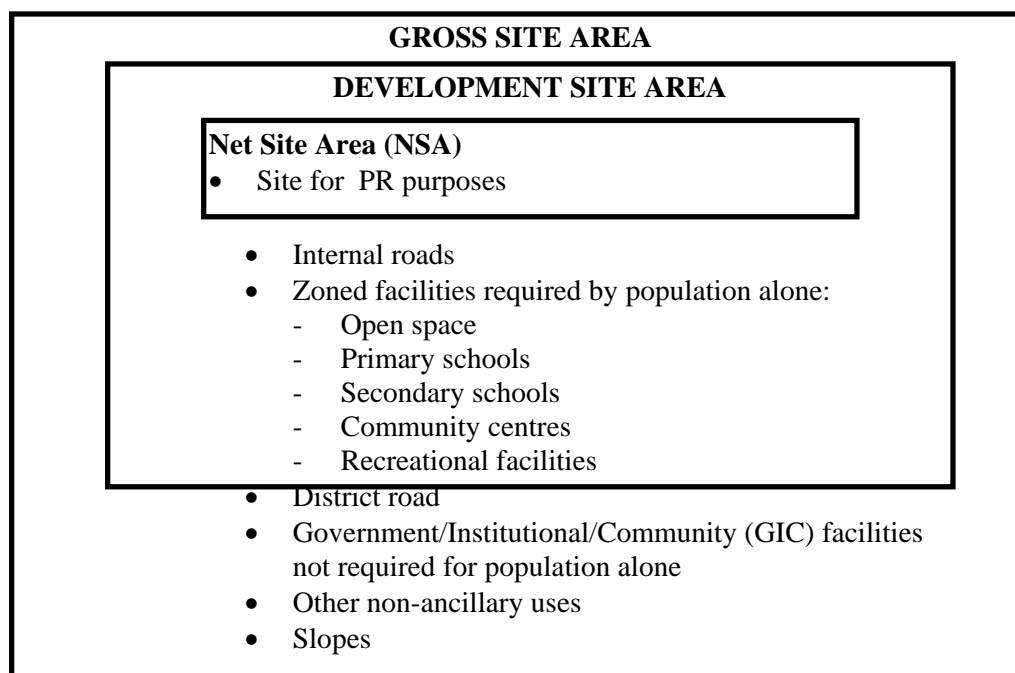
Building Density Guidelines

6.6 The ultimate maximum PR permissible in Hong Kong is set by the First Schedule of the Building (Planning) Regulations. Restrictions below this level can be enforced through :

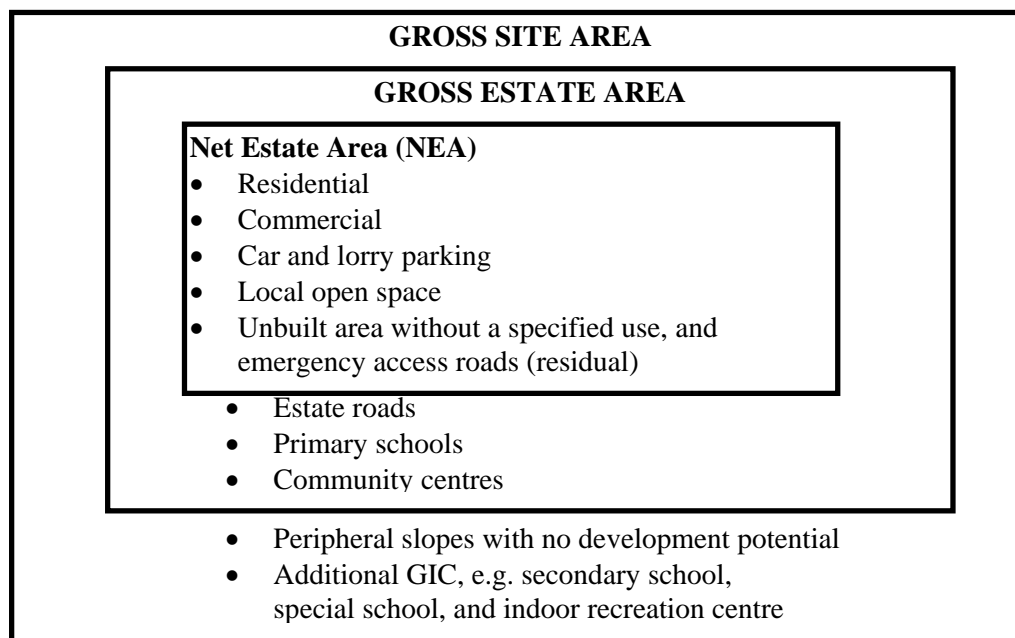
- statutory controls incorporated in OZPs;
- airport height restrictions (indirectly);
- conditions imposed on development under new or modified land leases; or
- planning permissions granted under Section 16 of the Town Planning Ordinance.

Figure 3 - Site Area Definitions

Private Housing



Public Housing



Source : PD, HKPSG

Public Housing

6.7 Public housing comprises public rental housing (PRH), home ownership scheme (HOS), and private sector participation scheme (PSPS). For public housing density guideline purposes, PSPS is excluded because such developments are similar to private sector housing schemes and are guided by the private sector density guidelines.

6.8 The density of development in public housing is controlled through Development Ratio (DR). DR, used as the basis for preparing planning briefs³ of public housing estates, is a ratio between gross floorspace (GF) and net estate area (NEA). In other words,

$$\mathbf{GF = NEA \times DR}$$

6.9 Hence, given a fixed NEA, the only means to increase GF is to raise DR. The DR is similar to the PR used in private housing development but is based on a different definition of both the site area (Figure 3) and gross floorspace. A detailed comparison between PR and DR is given in Appendix V.

6.10 For PRH and HOS estates, a common DR range of 5 to 7 on the NEA is used in the HKPSG. The range is intended to reflect the diversity of site constraints :

- on PRH, HOS and combined PRH/HOS estates, the aim is to achieve a DR of 6 on average sites (i.e. those which are not unduly constrained by physical or planning limitations);
- on severely constrained sites⁴, DR may be set at 5; and
- on markedly unconstrained sites (where, for instance, sites are flat and regularly shaped, have good accessibility and no height restrictions), DR may be set at 7.

³ A planning brief (PB) is a statement of the planning intention, guidelines and requirements for the development of a site.

⁴ Constrained sites are those whose potential are limited by either physical or planning constraints. Physical constraints include sites where steep slopes or non-estate roads break up the site into small or awkwardly shaped building areas. Planning constraints include requirements to provide a lower than usual building or population density, height restrictions and accessibility.

7 Zoning in Hong Kong

7.1 At present, Hong Kong is covered by some 100 OZPs and DPA plans. Both OZP and DPA plans show the road system and the proposed land uses. Examples of land uses include residential, commercial, industrial, village type development, comprehensive development area (CDA), open space, government/institution/community (GIC) facilities, green belt, conservation areas, open storage or other specified purposes.

7.2 As at end-March 1997, these plans cover a total area of 48,820 hectares (against the background of a total land area of 109,500 hectares, of which 17,500 hectares are developed lands). Of this, 4,972.34 hectares (10.2%) of land is zoned for residential use (Figure 4).⁵ Table 1 shows the distribution of residential development as controlled through the different categories of PR: high density development ($5 < PR \leq 8$), medium density development ($3 < PR \leq 5$), low density development ($1 < PR \leq 3$), and very low density development ($PR \leq 1$).

7.3 Among those areas zoned for residential use, 2,258 hectares (45.4%) have unspecified PR (Table 1 and Figure 5). This represents more than half of the land zoned for residential use in Hong Kong Island and 84% of residential land in the new towns of the New Territories. PR unspecified in OZPs or DPA plans does not imply a lack of density control. Such control is ultimately restricted by Building (Planning) Restrictions, which in most cases allow for a higher intensity of land use.

Table 1 - Residential Development by PR in OZPs and DPA Plans (hectares)

| Plot Ratio (PR) | HK Island | Kowloon | New Towns of New Territories | Rural Areas of New Territories | TOTAL |
|---------------------------------------|-------------------|-------------------|------------------------------|--------------------------------|---------------------|
| PR ≤ 1 | 121.58 (14.8%) | 12.47 (1.2%) | 202.46 (9.4%) | 966.51 (96.4%) | 1,303.02 (26.2%) |
| $1 < PR \leq 3$ | 191.95 (23.4%) | 108.07 (10.8%) | 85.28 (4.0%) | 24.99 (2.5%) | 410.29 (8.3%) |
| $3 < PR \leq 5$ | 80.58 (9.8%) | 61.96 (6.2%) | 54.13 (2.5%) | 4.89 (0.5%) | 201.56 (4.0%) |
| $5 < PR \leq 8$ | 0.00 (0.0%) | 799.70 (79.9%) | 0.00 (0.0%) | 0.00 (0.0%) | 799.7 (16.1%) |
| PR unspecified | 425.94 (52.0%) | 18.72 (1.9%) | 1,806.51 (84.1%) | 6.60 (0.6%) | 2,257.77 (45.4%) |
| Area Zoned for Residential Use | 820.05 | 1,000.92 | 2,148.38 | 1,002.99 | 4,972.34 |

Remarks : 1 Figures in parentheses are percentage shares of the column total.
2 New towns in New Territories include Tsuen Wan, Kwai Chung, Tsing Yi, Tuen Mun, Yuen Long, Tin Shui Wai, Sha Tin, Ma On Shan, Tai Po, Fanling/Sheung Shui, Tseung Kwan O and Tung Chung.

Sources : OZPs and DPA Plans

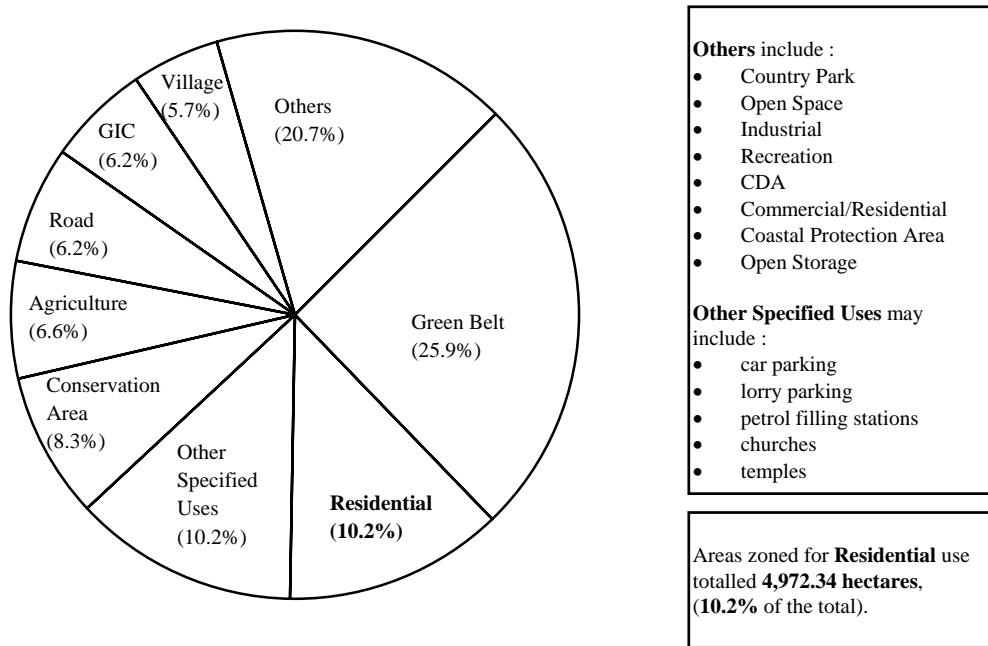
⁵ Note that areas zoned for CDA, village type development, and commercial/residential may also have residential development.

7.4 The majority of the land zoned for residential use in Kowloon is high density, having a PR of 5 to 8, a restriction set by the 16 OZPs gazetted on 24 December 1993. At present, Kowloon is covered by 18 OZPs: the 2 OZPs being gazetted later.

7.5 Table 1 and Figure 5 also show that 26.2% of the land total zoned for residential development has a PR of less than 1. A low PR restricts GFA, in turn restricting the number of flats that is permitted to be built; overall, it restricts the development potential of an area. The problem is most acute in the rural areas of the New Territories. Of the 1,002.99 hectares of land zoned for residential development in these less accessible areas, 966.5 hectares (96.4%) has a PR of less than 1.

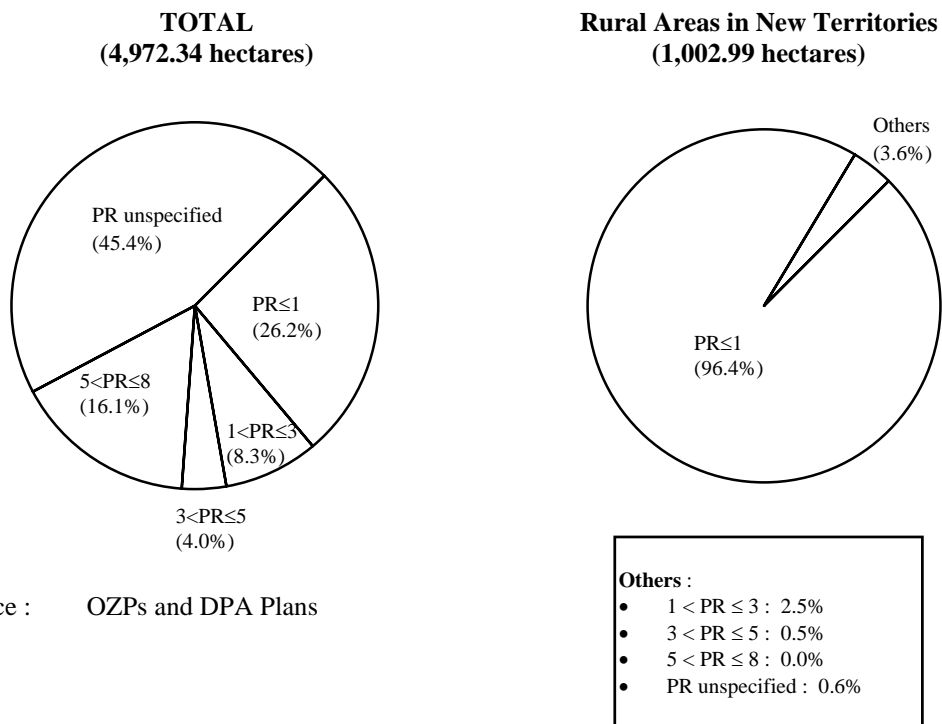
Figure 4 - Planned Land Use in OZPs and DPA Plans

(Total Planning Scheme Area: 48,820 hectares)



Source : OZPs and DPA Plans

Figure 5 - Residential Development by PR in OZPs and DPA Plans



Source : OZPs and DPA Plans

PART 3 --- REVISING THE RESIDENTIAL DENSITY

8 Private Housing

8.1 Raising the residential density will increase the intensity in land use. This change will need to be matched by a corresponding increase in the provision of infrastructure. When the revision is being processed, the developer may have to delay their works. If the revision is not approved, the development for the original residential density will begin - but lagging population changes.

8.2 To apply for a relaxation over PR, one needs to follow one or a combination of the following procedures :

- rezoning;
- planning application under Section 16 of the Town Planning Ordinance⁶;
- objection raised under the Town Planning Ordinance; and
- administrative measures.

8.3 The procedures involved in the application of **rezoning** are shown in Figure 6. The Town Planning Board (TPB) has to reply within three months. In the case where the application is rejected and the applicant decides to appeal, there is no time limit for the TPB to review the case: the time taken may be much longer.

8.4 The procedures involved in the **planning application under Section 16** of the Town Planning Ordinance are shown in Figure 7. The TPB has to reply within two months. In the case where the application is rejected and the applicant decides to appeal, again there is no time restriction for TPB to respond.

8.5 The procedures involved in the **objection** to an OZP are shown in Figure 8. There is no time limit for processing the objection.

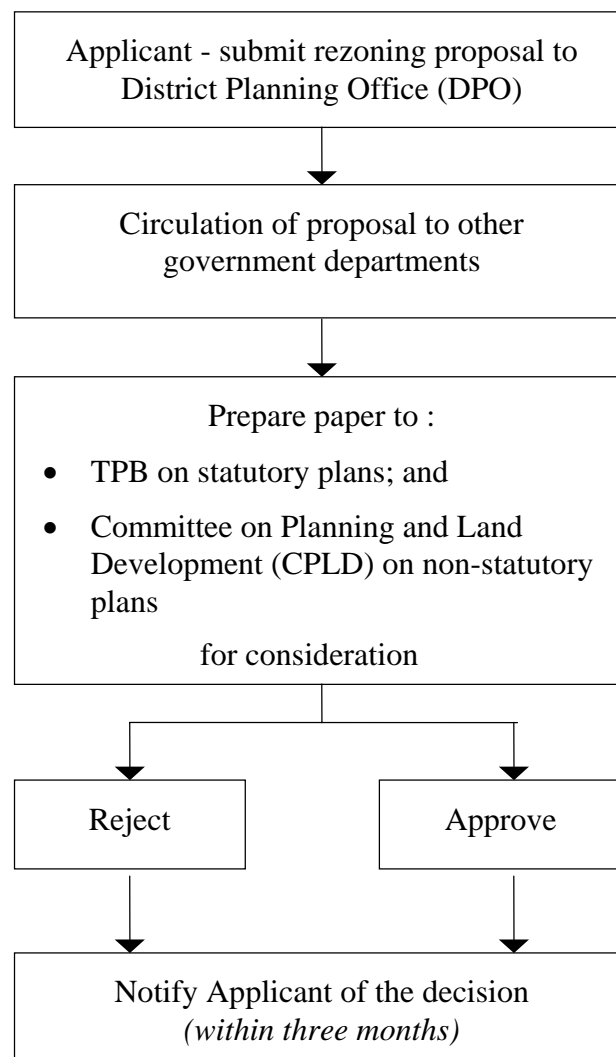
8.6 In considering a relaxation over PR, various government departments are **consulted**. Depending on the application, these government departments may include PD, Transport Department (TD), Highways Department (HWD), Territory Development Department (TDD), Environmental Protection Department (EPD), Lands Department (LD), Buildings Department (BD), Drainage Services Department (DSD), Water Services Department (WSD), Fire Services Department, and Civil Aviation Department. This can be time-consuming, as each department assesses the case from its own schedule of responsibilities.

⁶ Section 16 of the Town Planning Ordinance is shown in Appendix VI.

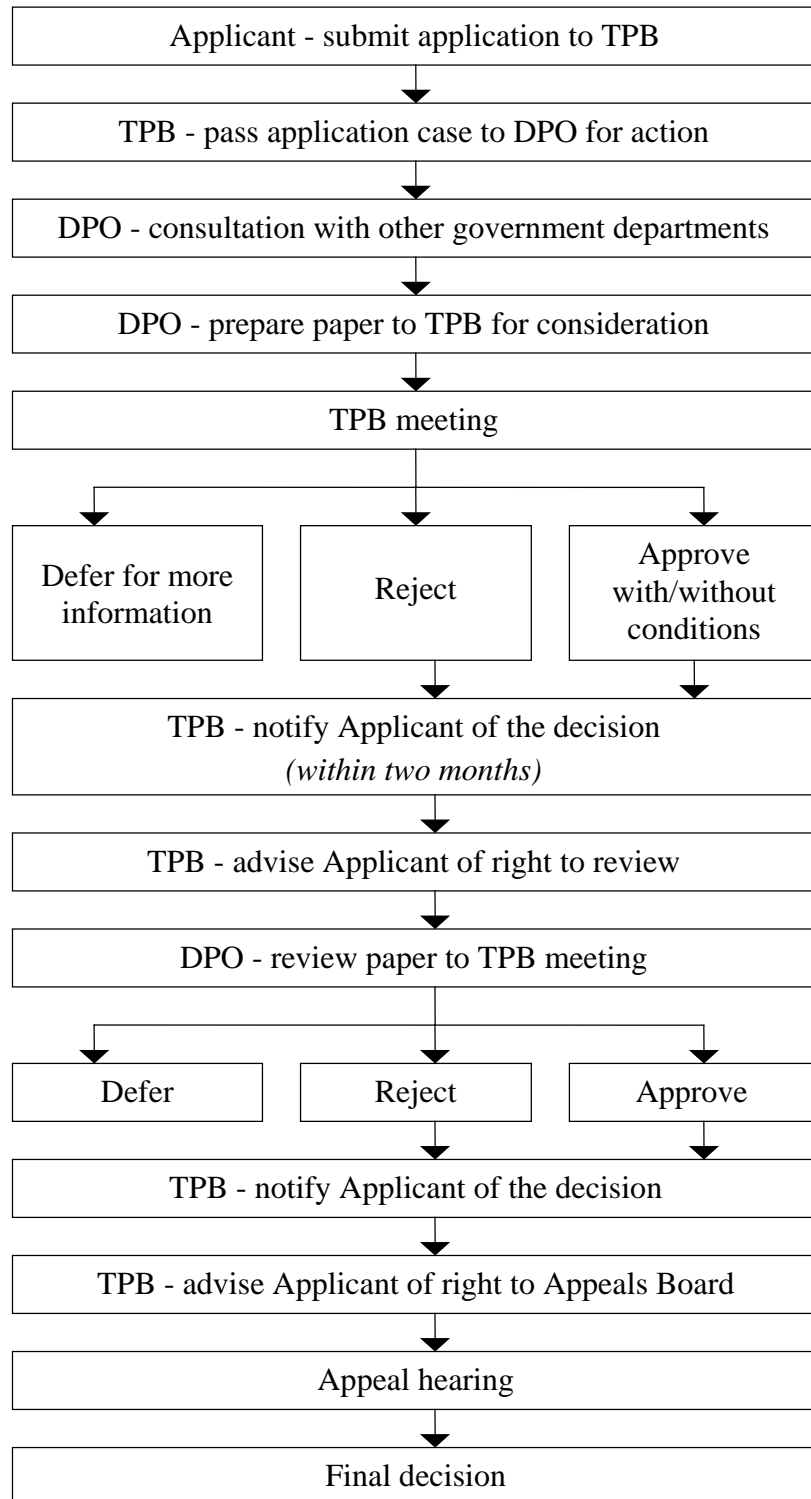
8.7 According to PD, the common reasons for rejecting a PR revision are one or a combination of the following :

- infrastructure constraints;
- incompatibility with the intensity of adjoining developments;
- lack of or inadequate planning justifications for application;
- recommended increase being too substantial;
- bad precedent; and
- exceeding airport height limits.

Figure 6 - Procedures in Rezoning Application

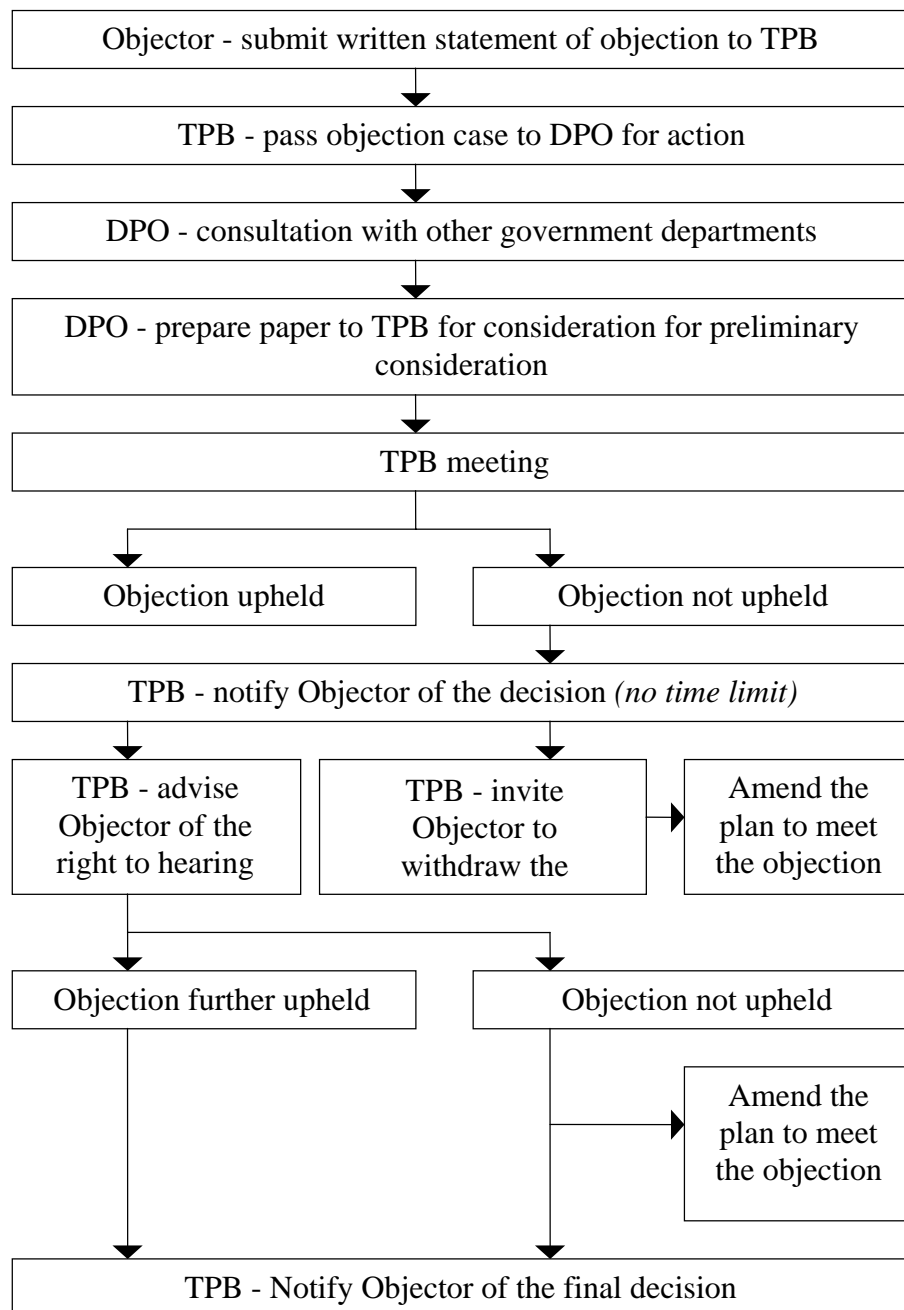


Source : PD

Figure 7 - Procedures in Planning Application under Section 16

Source : PD

Figure 8 - Procedures in Objection Cases



Source : PD

9 Public Housing

Housing Authority

9.1 To determine DR, feasibility studies are conducted on each site. The DR is finalized after negotiations with different government departments during the PB design stage. Under the HKPSG, the range of DR for public housing is 5 to 7. However, a DR exceeding 7 may be allowed depending on infrastructure and environmental constraints.

9.2 Table 2 shows the DR of sites that are to be completed in the coming five years between 1997-98 and 2001-02. More than half of these sites are in DR of 5 to 7; one-third of these sites has a DR beyond the upper limit of the range. At the same time, DR of 11% of the sites are lower than 5.0. HD replied that these were mainly due to environmental and planning constraints, airport height restrictions, and site configuration. Details of these sites are shown in Appendix VII.

Table 2 - DR of Sites to be Completed by HA between 1997-98 and 2001-02

| Development Ratio (DR) | Number of Sites | (share) |
|------------------------|-----------------|---------------|
| DR ≤ 5.0 | 4 | 11.1% |
| 5.0 < DR ≤ 5.5 | 0 | 0.0% |
| 5.5 < DR ≤ 6.0 | 5 | 13.9% |
| 6.0 < DR ≤ 6.5 | 3 | 8.4% |
| 6.5 < DR ≤ 7.0 | 12 | 33.3% |
| DR > 7.0 | 12 | 33.3% |
| TOTAL | 36 | 100.0% |

Remarks : 1 Infill sites are not included because they are small sites aiming at building one to two blocks within existing housing estates.

2 The PBs of the 36 sites were approved or amended between 1992-93 and 1996-97.

Source : HD

Initiatives Taken To Optimize Land Use

9.3 HD indicated that initiatives taken to optimize land use include :

- improving road networks (Table 3);
- using podium to accommodate car parking and recreational facilities while allowing residential blocks to be constructed on podium (Table 4); and
- adopting new block designs (including building higher and using single aspect blocks to mitigate environmental constraints) which suit the topography of different sites (Table 5).

Table 3 - Examples of Sites where Road Improvement Works are Needed

| Site | Road Improvement Works | | | |
|--|------------------------|-----|-----|-----|
| | (A) | (B) | (C) | (D) |
| 1 Homantin South and Homantin Estate | ✓ | ✓ | ✓ | |
| 2 Tsz Wan Shan | ✓ | ✓ | | ✓ |
| 3 Choi Wan Estate infill site | ✓ | | | |
| 4 Ko Chiu Road/Yau Tong/Lei Yue Mun | ✓ | ✓ | | |
| 5 Lai Chi Kok | ✓ | ✓ | | |
| 6 Lok Fu Shopping Centre Improvement Phase 2 | ✓ | | | |
| 7 Shek Yam Estate | ✓ | ✓ | | |
| 8 Shek Lei Estate | ✓ | ✓ | | |
| 9 Kwai Chung Estate | ✓ | ✓ | ✓ | |
| 10 Po Lam Road Platform | ✓ | ✓ | | |
| 11 Sau Mau Ping Estate | ✓ | | ✓ | |
| 12 Valley Road Estate | ✓ | | | |
| 13 Yuen Tung Temporary Housing Area | ✓ | | | |
| 14 Infill sites at Hing Tung and Yiu Tung | ✓ | | | |
| 15 Tung Tau and Inverness Road | ✓ | | ✓ | |
| 16 Upper Ngau Tau Kok | ✓ | | | |
| 17 Tuen Mun Area 56 | ✓ | ✓ | | |
| 18 Tsing Yi Area 10 | ✓ | ✓ | | |
| 19 Pak Tin Estate | ✓ | | ✓ | |

Remarks : (A) Junction improvement
 (B) Road widening
 (C) Road realignment
 (D) New road

Source : HD

Table 4 - Examples of Sites Using Podium Design in Public Housing Estates

| Site | Feature |
|---|---|
| 1 Cheung Sha Wan West (DR: 7.04) | Podium A <ul style="list-style-type: none"> Podium comprises 2-storey commercial block 6-storey ancillary facilities block with 2-storey Housing for Senior Citizens above Podium B <ul style="list-style-type: none"> Podium comprises 4-storey car parking 2 single aspect blocks above |
| 2 Ho Man Tin South (DR: 7) | <ul style="list-style-type: none"> Podium accommodates car parking and clubhouse Podium also mitigates adverse traffic noise 4 to 9 domestic storeys of specially designed small household flats above |
| 3 Lei Yue Mun Road Redevelopment (DR: 6.8) | <ul style="list-style-type: none"> Podium accommodates car parking Podium also mitigates adverse traffic noise 37-storey Concord blocks and modified single aspect Concord blocks above |
| 4 Yau Tong Phases 3 and 5 (DR: 6.81) | <ul style="list-style-type: none"> Podium accommodates car parking and commercial facilities Podium also mitigates adverse traffic noise 11 Concord blocks above |

Source : HD

Table 5 - List of Block Design Adopted by HA

| Block Type (Year of First Implementation) | No. of Flats Per Block | Feature |
|---|-----------------------------------|---|
| Harmony 1 Option 5, 6 Option 7, 9 Option 8, 10 (late 1989) | 799 719 614 | <ul style="list-style-type: none"> 40 storeys domestic floor cruciform compact block shape link block for Option 6, 9, 10 possible to locate on podium structure |
| Harmony 2 Option 1, 2, 4, 5 Option 3 (late 1989) | 714 833 | <ul style="list-style-type: none"> 40 storeys domestic floor highest flat number for Option 3 |
| Harmony 3 Option 1 Option 2, 3 (late 1989) | 510 480 | |
| Harmony 3A Option 1 Option 2, 3 (late 1989) | 450 420 | <ul style="list-style-type: none"> linear block shape most suitable for urban redevelopment or infill sites possible to locate on podium structure |
| New Cruciform Block (1984) | 370 | <ul style="list-style-type: none"> 37 storeys compact cruciform block shape |
| New Annex Type 1, 3 Option 1 Option 2 (1995) | 140 180 | <ul style="list-style-type: none"> up to 21 storeys small footprint in different configuration to suit site constraints |
| New Annex Type 2, 4 (early 1997) | 160 | <ul style="list-style-type: none"> type 2 and 4 with free pedestrian traffic allowed at ground floor |
| Concord Type 1 Concord Type 2 (early 1997) | 320 180 | <ul style="list-style-type: none"> type 1 : 40 storeys domestic floor compact cruciform shape type 2 : 30 storeys link block possible allow to locate on podium structure |
| Lowrise Housing for Senior Citizen (late 1995) | Up to 197 | <ul style="list-style-type: none"> up to 3 storeys of 197 flats possible to locate on top of car parking or podium structure |
| Single Aspect Block (late 1996) | Varies | <ul style="list-style-type: none"> non-standard design to maximize development potential of the noise constrained sites |
| Small Households Developments (mid-1995) | Varies | <ul style="list-style-type: none"> design with standard flat modules to suit specific flat mix and site constraints |

Source : HD

9.4 HD indicated that it had reached an agreement with Education Department in March 1997 to integrate the school development into estate design in order to optimize land use. Instead of stand-alone standardized schools, tailor-made school design to be integrated with the housing estate design can also be considered.

Problem Encountered by HA In Optimizing Land Use

9.5 HD reported that one of the problems in optimizing land use is the different and sometimes conflicting regulatory constraints imposed by various government departments. These constraints reduce the number of flats that can be built; their conflicting views delay the programme. Table 6 shows such an example in West Kowloon Reclamation, which is not yet resolved to date.

Table 6 - Regulatory Constraints Encountered by HA in Developing West Kowloon Reclamation

| Date | Events |
|-------|--|
| 06/92 | <ul style="list-style-type: none"> • Negotiations over the housing sites in West Kowloon Reclamation (WKR) started. • The sites were identified as Category 3 sites by EPD, i.e. sites requiring environmental studies to determine their suitability for housing development. • HD objected as the sites were agreed for housing development on the WKR Outline Development Plan. • EPD agreed subject to a 45m set back from the West Kowloon Corridor. • Meanwhile, PD insisted on a maximum DR 6 instead of DR 7 as proposed by HD in order to limit the overall population of WKR to 91,000 which was considered to be the maximum population supportable by the area's infrastructure capacity. |
| 09/93 | <ul style="list-style-type: none"> • HD prepared a PB based on DR 6 and a 45m environmental set back. • PD did not support the PB because of the condition required by EPD. • HD examined the use of single aspect blocks in a PSPS development to mitigate noise impact so that any set back was not required and population can increase by 40%. |
| 08/94 | <ul style="list-style-type: none"> • EPD agreed. • However, TDD refused to re-examine the traffic impact as a result of the 40% increase in population. HD employed its own consultant. The result indicated that the traffic capacity could cope with the population increase subject to minor modifications. • PD however objected to the increase as it would exceed the population ceiling. • The matter remained unresolved and PD appealed to Development Progress Committee for a resolution in 08/94. • Development Progress Committee compromised on a 25% increase. HD's proposed increase of 40% would be considered subject to a review of the overall WKR study. |
| 11/94 | <ul style="list-style-type: none"> • HD re-submitted to Development Progress Committee a proposal based on the 25% increase and Development Progress Committee approved. |
| 01/97 | <ul style="list-style-type: none"> • HD proceeded with the PSPS development while pending the PRH portion for the result of the WKR Review Study. The WKR Review Study indicated that an increase of 40% population was acceptable with minor improvements. |
| 02/97 | <ul style="list-style-type: none"> • TD however objected to the population increase insisting that the transport network could not cope with the population increase and the issue still remains unresolved. |

Source : HD

Housing Society

9.6 HS developments are similar to private sector housing as the development intensity is expressed in the form of PR. The PR of sites that are to be completed between 1997-98 and 2001-02 is shown in Table 7. The majority of the sites has a PR of 5 to 8. Details of these sites are shown in Appendix VIII.

Table 7 - PR of Sites to be Completed by HS between 1997-98 and 2001-02

| Plot Ratio (PR) | Number of Sites | (share) |
|-----------------|-----------------|-------------|
| PR ≤ 1.0 | 0 | 0% |
| 1.0 < PR ≤ 3.0 | 1 | 4% |
| 3.0 < PR ≤ 5.0 | 8 | 32% |
| 5.0 < PR ≤ 8.0 | 13 | 52% |
| 8.0 < PR ≤ 10.0 | 3 | 12% |
| TOTAL | 25 | 100% |

Source : HS

Revision of PR

9.7 HS reported that it experienced delays in obtaining approval for revising PR. An example is a site in Ma Tau Kok. HS applied for a lease modification through a Section 16 planning approval, as the intensity of the site permitted under lease was lower than that permitted under statutory control. The process took one and a half years to complete before it was approved. If preliminary planning was included, over two years were spent. Details of the revision is shown in Table 8.

Table 8 - Revision of PR: A Site in Ma Tau Kok

| | PR | GFA | Number of Flats |
|-----------------|-------|--------|-----------------|
| Original Scheme | 5.35 | 60,435 | 824 |
| Revised Scheme | 6.963 | 78,680 | 900 |

Source : HS

9.8 During the revision process, HS consulted PD, TD, EPD and LD for their views on the proposed increase in development intensity. HS indicated that the major difficulty was to convince the relevant departments to accept the revised scheme and considerable time was spent in the process.

Problem Encountered by HS In Optimizing Land Use

9.9 HS reports that environmental control is an important constraint in optimizing the development potential of some sites. Examples are shown in Table 9. In worse cases, sites intended for the development by HS have been rejected due to environmental restrictions and topographic reasons (Table 10).

Table 9 - Examples of Constraints Encountered by HS

| Site | Constraint | Resolved By | Delay |
|--|--|----------------------------------|--------------------|
| 1 SCH at Lung Pung Street | noise | taller blocks | 9 months |
| 2 SCH at Tseung Kwan O Area 13 | noise | special design | 7 months |
| 3 SCH at Ma On Shan Area 77 | noise; height restriction | special design; taller blocks | 9 months |
| 4 Kai Tak Garden (Kai Tak Redevelopment) | noise; height restriction | special design | not applicable* |
| 5 Bo Shek Mansion (Bo Shek Dai Ha Redevelopment) | noise; smoke from nearby industrial developments | resolved with PELB's support | 2 years |

Remark : * construction and negotiation work in parallel.

Source : HS

Table 10 - Sites Intended for HS but Rejected

| Site | Constraint |
|---------------------------------------|--|
| 1 Lai Cho Road and Lai King Hill Road | noise; shape of site, topography and access problem |
| 2 Mei Lai Road | noise |

Source : HS

PART 4 --- ANALYSIS

10 Points of Concern

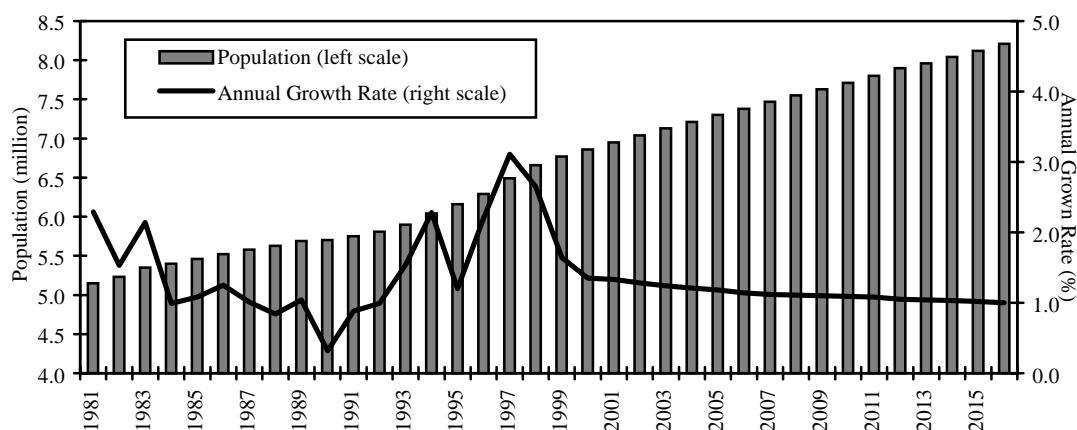
10.1 In the optimization of land use, several points deserve our attention. These include :

1. population projections;
2. the Metroplan;
3. the provision of infrastructure;
4. environmental standards;
5. re-development;
6. zoning of the territory;
7. a review of residential density;
8. conflicting requirements of government departments; and
9. over-concentration of central business district.

Population Projections

10.2 Accurate population projections are crucial to planning for the provision of land and infrastructure. Based on population projections, territory plan such as TDS and local plans such as OZPs are formulated. These plans outline the current and future requirements of land and infrastructure, which subsequently affect the residential density of an area. Figure 9 shows the actual population and the projected population between 1981 and 2016.

Figure 9 - Population (million) and its Annual Growth Rate (%)



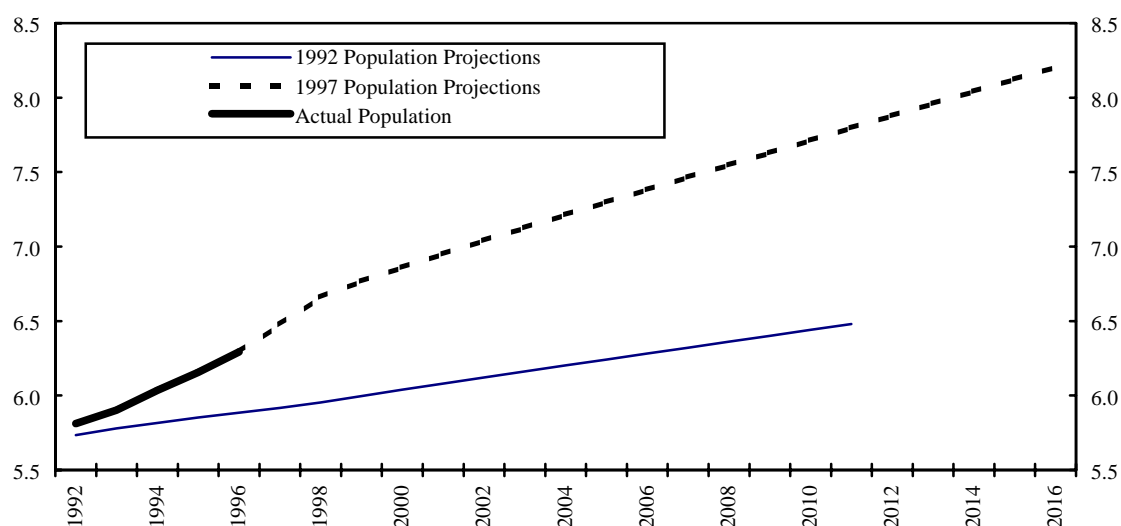
Source : Census and Statistics Department (CSD)

Table 11 - 1992 Population Projections and Actual Population (thousand)

| Population (Mid-Year) | 1992 Population Projections (a) | Actual Population (b) | Under-estimation of Population (a)-(b) |
|-----------------------|---------------------------------|-----------------------|--|
| 1992 | 5,734.9 | 5,811.5 | -76.6 |
| 1993 | 5,779.4 | 5,901.0 | -121.6 |
| 1994 | 5,816.3 | 6,035.4 | -219.1 |
| 1995 | 5,852.2 | 6,156.1 | -303.9 |
| 1996 | 5,884.7 | 6,292.0 | -407.3 |

Table 12 - 1992 and 1997 Population Projections (thousand)

| Population (Mid-Year) | 1992 Population Projections (a) | 1997 Population Projections (b) | Discrepancy in Projections (a)-(b) |
|-----------------------|---------------------------------|---------------------------------|------------------------------------|
| 1997 | 5,916.9 | 6,478.5 | -561.6 |
| 1998 | 5,954.1 | 6,659.4 | -705.3 |
| 1999 | 5,996.3 | 6,768.9 | -772.6 |
| 2000 | 6,039.5 | 6,860.0 | -820.5 |
| 2001 | 6,080.5 | 6,951.0 | -870.5 |
| 2002 | 6,120.6 | 7,040.2 | -919.6 |
| 2003 | 6,161.7 | 7,127.6 | -965.9 |
| 2004 | 6,202.2 | 7,213.9 | -1,011.7 |
| 2005 | 6,242.3 | 7,299.2 | -1,056.9 |
| 2006 | 6,282.1 | 7,382.6 | -1,100.5 |
| 2007 | 6,321.7 | 7,465.4 | -1,143.7 |
| 2008 | 6,361.3 | 7,547.9 | -1,186.6 |
| 2009 | 6,400.8 | 7,630.6 | -1,229.8 |
| 2010 | 6,440.3 | 7,713.6 | -1,273.3 |
| 2011 | 6,479.8 | 7,797.1 | -1,317.3 |

Figure 10 - Comparison of 1992 Population Projections with Actual Population and 1997 Population Projections

Sources : CSD, Hong Kong Population Projections 1992-2011
 CSD, Hong Kong Population Projections 1997-2016
 CSD, Hong Kong Monthly Digest of Statistics

10.3 Population projections are made by CSD, which have turned out to be too low⁷. They are made after each population census/by-census. The latest population census was conducted in 1991 and by-census in 1996. Hence, population projections were made in 1992 and 1997.

10.4 When compared with actual population, the 1992 Population Projections under-estimated the 1996 population by 407,000 (Table 11 and Figure 10). The 1992 Population Projections anticipated a population of 5,884,700 at mid-1996, but the actual population turned out to be 6,292,000.

10.5 Using population at mid-1996 as a reference for comparison, the population projections in 1977, 1987 and 1992 all under-estimated the actual figure (Appendix IX). The latest projection for year 2011 made in 1997 shows a shortfall of 20% (1.3 million) when compared with the 1992 projections (Table 12). This shortfall produces several negative effects on the provision of housing and infrastructure in Hong Kong.

10.6 First, housing demand has been under-estimated. The government estimates housing demand by a housing demand model⁸. Then, flats and land requirements are estimated according to population growth. If population is under-estimated, flats and land requirements are also under-estimated. (Appendix X shows these steps in greater detail).

10.7 Secondly, plans formulated on inaccurate population projections fail to meet the infrastructure needs of the people. When population was under-estimated, infrastructure developments (e.g. highway network and railway network) for the community were under-provided in the TDS. Subsequently and consequently, infrastructure under-provision became a constraint to raising the PR. Local plans such as OZPs based on the TDS in turn suffer the same failure.

10.8 Thirdly, the shortfall in estimation has a magnified impact now because of the larger population base. For instance, the 1992 Population Projections projected an annual growth rate of 0.7% between 1991 and 1996. However, the actual growth rate averaged 2.0% per annum over the period. The under-estimation of 1.3% meant under provision for 407,300 people (Table 13).

⁷ The past four population projections (i.e. population projections in 1997, 1982, 1987, and 1992) were shown in Appendix IX.

⁸ A study was conducted by the RLS on the housing demand model in October 1996. Please refer to RP01/96-97.

Table 13 - Population Projections in 1992

| | Population at Mid-1996 | Population Growth Rate Per Annum Between 1991 And 1996 |
|---------------------------------|-------------------------------|---|
| 1992 Population Projections (a) | 5,884,700 | 0.7% |
| Actual Population (b) | 6,292,000 | 2.0% |
| Under-estimation (a)-(b) | -407,300 | -1.3% |

Sources : CSD, Hong Kong Population Projections 1992-2011
CSD, Hong Kong Monthly Digest of Statistics

10.9 If the 1997 Population Projections again under-estimate population growth by 1.3% per annum between 1996 and 2001, this would mean an under-estimation of population by 454,000 up to 2001. The subsequent impact on land and infrastructure requirements will be more serious.

10.10 Fourthly, population growth in the coming ten years will be affected by the immigration policy. Between 1996 and 2016, population is projected to increase by 1,913,900, of which 1,095,000 (57%) are immigrants from China. This is based on the assumption of the continuation of the current policy of 150 China immigrants per day settling in Hong Kong.⁹ If there is any relaxation on the quota, population will again be under-estimated.

10.11 Fifthly, there is a lack of a contingency plan which would make up for any shortfall in achieving the original targets as soon as an under-estimation is recognized. Similarly, there is a lack of safety margin in population projections. If land and infrastructure are provided according to population projections plus a safety margin, then the problem of under-provision of land and infrastructure will be mitigated.

10.12 Sixthly, reviews of plans have taken place with time lags. Lengthy consultation periods are not uncommon before the action plan can be finalized and implemented.

⁹ The quota of China immigrants holding one-way permits arriving at Hong Kong each day is 150. This represents an increase of 54,750 (150 x 365) in a year. For a period of 20 years between 1996 and 2016, a total increase of 1,095,000 (54,750 x 20) is expected.

The Metroplan

10.13 The Metroplan is a study carried out in 1990-91 which aimed to¹⁰ :

- provide opportunities to satisfy housing needs according to what people can afford and where they would like to live;
- achieve a more balanced distribution of jobs;
- reduce population densities; and
- provide a multi-choice, high capacity transport system that is financially viable, energy efficient and makes provision for the safe and convenient movement of pedestrians.

10.14 Following the Metroplan study, the government conducted the Kowloon Density Study in 1993, which was followed by the gazette of the 16 OZPs in Kowloon on 24 December 1993. In effect, these 16 OZPs reduced the PR in Kowloon in general. Moreover, the Metroplan concept was extended to new towns and other parts of the New Territories later, restricting the residential density there.

10.15 A number of assumptions in the Metroplan were based on the 1992 Population Projections. Based on the projection that the population would be 6.5 million (now projected to be 7.8 million) in 2011, the Metroplan would restrict population in the metro area¹¹ to 4.2 million. That is to say, the non-metro area has to accommodate all the additional 2.3 million (now projected to be 3.6 million) population. Examples of planned development in the non-metro area include Tseung Kwan O, Tung Chung, and Tin Shui Wai. This implies much extra burden on infrastructure facilities in the non-metro area, particularly when actual population grew faster than planned.

10.16 Another drawback of the Metroplan is that its Stage I Review commenced only in November 1996. This timing had to accommodate a large unestimated increase in population that occurred in the previous few years. Future reviews should be carried out more frequently. Furthermore, it is better to have an indication of a time table specifying the completion of the review any subsequent consultation and any action plan to follow up.

The Provision of Infrastructure

10.17 The provision of infrastructure is crucial to an efficient intensity of land use. Inadequate infrastructure in Hong Kong has been brought about by delays of works as a result the tardiness in recognizing an error in population estimation and the length of time taken to obtain statutory or administrative approvals.

¹⁰ The Metroplan includes other aims which are given in full in Appendix XI.

¹¹ The metro area comprises Hong Kong Island, Kowloon, New Kowloon, and the Districts of Tsuen Wan and Kwai Ching.

10.18 In the response to the Consumer Council's report "How Competitive is the Private Residential Property Market?", the government acknowledges that there is a need to provide adequate transport infrastructure in less accessible areas so as to tie in with new housing developments. The government has earmarked funds, controlled by the Secretary for Housing, to speed up housing-related infrastructure projects. Up to April 1997, HB has identified 63 projects and the preliminary estimated expenditure amounted to \$14.5 billion. Table 14 shows the 63 projects categorized by government departments. Appendix XII lists the details of the 63 projects.

Table 14 - Housing-related Infrastructure Projects

| Department | Number of Projects | Expenditure (\$ million) | (share) |
|--|--------------------|--------------------------|---------------|
| Territory Development Department (TDD) projects | 13 | 4,185.47 | 28.9% |
| Water Services Department (WSD) projects | 13 | 6,963.76 | 48.0% |
| Highways Department (HWD) projects | 10 | 1,705.46 | 11.8% |
| Civil Engineering Department (CED) projects | 3 | 157.28 | 1.1% |
| Architectural Services Department (ASD) projects | 23 | 1,452.04 | 10.0% |
| Housing Department (HD) projects | 1 | 29.82 | 0.2% |
| TOTAL | 63 | 14,493.83 | 100.0% |

Source : HB

10.19 Of the \$14.5 billion, almost half is planned for projects related to water services; ten highways projects comprise 11.8% and four projects under TDD¹² are also transport-related. Altogether, the 14 transport-related projects will account for 38.3% of all housing-related infrastructure projects planned.

10.20 Seven of these 14 projected are category B projects while the remaining seven will require preliminary project feasibility studies.¹³ That means these projects can be completed only in a few years, despite the unplanned growth in population.

10.21 Secondly, infrastructure is provided with delays. According to the Capital Works Reserve Fund (CWRP) 1996-97 Estimates Performance Report, of the 135 projects that were expected to start during the year, 47 projects (35% of the total) experienced delays of more than a year. These projects may start in 1997-98 or later. Table 15 shows a breakdown of the 135 projects by category.

¹² Source : HB

¹³ A project usually requires a preliminary project feasibility study to be conducted and endorsed by Secretary for Works and Secretary for the Treasury before it can be accorded a Category B status. Next, detailed design of the project follows and the project is to be upgraded to Category A for work to commence upon approval by the Finance Committee.

Table 15 - Capital Works Projects Expected to Start in 1996-97 by Category

| Category | Projects expected to start during 1996-97 | Projects started ahead of schedule | Projects started on schedule | Projects started late but within 1996-97 | Projects start after 1996-97 |
|---|---|------------------------------------|------------------------------|--|------------------------------|
| Port and Airport Development | 6 | 0 | 2 | 0 | 4 |
| Buildings | 35 | 3 | 9 | 15 | 8 |
| Drainage | 18 | 2 | 10 | 3 | 3 |
| Civil Engineering | 4 | 0 | 1 | 0 | 3 |
| Highways | 9 | 0 | 5 | 1 | 3 |
| New Towns and Urban Area Development | 36 | 3 | 9 | 6 | 18 |
| Capital Subventions and Major Systems and Equipment | 16 | 0 | 6 | 4 | 6 |
| Waterworks | 8 | 1 | 5 | 1 | 1 |
| Housing | 3 | 0 | 0 | 2 | 1 |
| TOTAL | 135 | 9 | 47 | 32 | 47 |

Source : WB

10.22 Of the 47 delayed projects, 18 (38%) were projects under the category of “new towns and urban area development”. These projects concerned transport and environmental protection. Other delayed projects concerned “highways” and “drainage”.

10.23 The main reason given in the CWRP 1996-97 Estimates Performance Report for the delays was “longer than expected time to obtain the necessary statutory and administrative approvals or decisions”; another significant reason was “rescheduling required to tie in with related works or to meet special requirements”. Table 16 lists the combinations of the reasons. These delays in particular aggravate the suffering of the population caused by under-capacity of infrastructure in new towns and old urban areas.

Table 16 - Reasons for Delays in Capital Works Projects

| Reasons | No. of Projects Affected |
|--|--------------------------|
| 1. Longer than expected time to obtain the necessary statutory and administrative approvals or decisions | 25 |
| 2. Rescheduling required to tie in with related works or to meet special requirements | 16 |
| 3. Objections from the public or concerned parties | 11 |
| 4. Delays in the completion of associated works | 8 |
| 5. Refinement or review of project scope or programme | 7 |
| 6. Non-availability of sites on time | 5 |
| 7. Deferment as a result of policy review | 5 |
| 8. The need and hence longer time taken to ensure compliance with environmental requirements | 2 |

Source : WB

Environmental Standards

10.24 Feedback from private developers and public development agencies indicates that environmental standards have become a significant constraint in optimizing land use. In some cases, when a certain site is facing a main street, setback is required to mitigate noise pollution. This reduces the number of flats to be built.

10.25 However, professional bodies have commented that the problem of noise pollution can be dealt with by a number of measures including noise shelter, podium design, double-glass window and air-conditioned living rooms and bedrooms. The setback requirement can be adapted to local conditions and handled with flexibility, taking into account such factors as efficient intensity of land use and an acceptable local standard of environment and amenity for the population.

Re-development

10.26 Re-development can take place to achieve optimization of land use if planning is done now to make use of appropriate opportunities. Professional bodies have expressed the view that the closure of Kai Tak Airport will result not only in major relaxation of height controls, but also in a major shift in land use requirements. Ma Tau Kok, for instance, is currently zoned for industrial use, occupied principally by freight-forwarders and others engaged in airport-related activities. When Kai Tak closes, their presence will become redundant.

10.27 Professional bodies suggested that Ma Tau Kok can be rezoned for residential use since the predominant land use neighbouring Ma Tau Kok is residential. Redevelopment could take place progressively over the next five to 10 years which would allow the government to upgrade the infrastructure to meet the demands of the new land use.

Zoning of the Territory

10.28 A low PR restricts the optimization of land use as it limits the number of flats that can be built in an area, thereby reducing its development potential. As mentioned above, more than a quarter of the residential area zoned in OZPs and DPA plans is designated for very low density ($PR \leq 1$) development. The problem is most acute in the rural areas of the New Territories where 96.4% of the zoned residential area has a PR of less than 1.

10.29 One of the reasons for assigning such a low PR to these areas is due to the lack of infrastructure. If infrastructure is upgraded, the PR of these areas can be raised. In turn, these rural areas will be able to accommodate a larger population, thereby optimizing land use.

A Review of Residential Density

10.30 Population of Hong Kong has increased significantly over the past 20 years. The residential density guidelines incorporated in the HKPSG in 1979 may need to be reviewed.

10.31 There have not been any major revision since the HKPSG was adopted in 1979, apart from minor modifications in 1981-82 to include specific New Town development standards. A review took place in 1993-94 (final report of the review published in November 1994), but it did not intend to change the density regime set out in Chapter 2 of the HKPSG and in the Metroplan.

Conflicting Requirements of Government Departments

10.32 Production of housing and infrastructure on time to meet the population needs is one crucial element in maintaining an efficient intensity of land use. In determining the PR of a certain area or in considering a revision to the PR, different government departments may have different views which are contradictory in some cases.

10.33 In appeal cases of PR revisions, there is no time limit for the government to make a final decision. Private developers and public development agencies have indicated that the process can take as long as two years. Such uncertainty and delay hinder an efficient land use.

Over-Concentration of Central Business District

10.34 If the central business district is over-concentrated in certain areas, the transport capacity is stretched to meet the needs of commuters. It results in an imbalance between the population and the capacity of the infrastructure required to service it. Consideration should be given to developing other districts so as to maintain a more balanced distribution of jobs, which is one of the aims of the Metroplan.

10.35 The total working population in Hong Kong was 3.0 million in 1996. Of this, almost half of the working population (46.8%) work in five districts; namely Central and Western, Wanchai, Eastern, Yau Tsim Mong and Kwun Tong (Table 17). This indicates that employment opportunities concentrate in certain areas.

10.36 However, there is a mismatch of the place of work and the place of residence. Table 17 also shows working population by place of residence. This mismatch would undoubtedly generate huge amount of traffic¹⁴.

Table 17 - Working Population by Place of Work and by Place of Residence

| District | Place of Work | (Share) | Place of Residence | (Share) |
|---------------------|------------------|---------------|--------------------|---------------|
| Yau Tsim Mong | 364,254 | 12.0% | 132,413 | 4.4% |
| Central and Western | 333,593 | 11.0% | 146,221 | 4.8% |
| Wanchai | 269,929 | 8.9% | 97,261 | 3.2% |
| Kwun Tong | 237,953 | 7.8% | 286,749 | 9.4% |
| Eastern | 218,147 | 7.2% | 310,850 | 10.2% |
| Kowloon City | 199,824 | 6.6% | 192,196 | 6.3% |
| Kwai Tsing | 199,394 | 6.6% | 228,490 | 7.5% |
| Sham Shui Po | 165,747 | 5.4% | 174,910 | 5.7% |
| Sha Tin | 154,611 | 5.1% | 282,692 | 9.3% |
| Tsuen Wan | 131,952 | 4.3% | 141,437 | 4.6% |
| Tuen Mun | 99,357 | 3.3% | 212,645 | 7.0% |
| Yuen Long | 91,101 | 3.0% | 148,797 | 4.9% |
| Southern | 89,108 | 2.9% | 145,964 | 4.8% |
| Wong Tai Sin | 76,066 | 2.5% | 183,240 | 6.0% |
| Tai Po | 66,302 | 2.2% | 127,309 | 4.2% |
| North | 54,794 | 1.8% | 100,649 | 3.3% |
| Others* | 291,566 | 9.6% | 131,875 | 4.4% |
| Total | 3,043,698 | 100.0% | 3,043,698 | 100.0% |

Source : CSD

Remark: * Others include Sai Kung, Islands and marine population.

10.37 It is obvious that there is over-concentration of central business districts. This generates huge pressures on the transport system. Measures aiming at decentralizing the central business district so as to achieve a more balanced distribution of jobs should be considered.

¹⁴ Note that a worker who resides and works in the same district may also generate traffic. However, the distance travelled is shorter on average.

11 Conclusion

11.1 Accurate population projections are crucial in the provision of land and infrastructure. There needs a mechanism or a contingency plan which safeguards that the original targets can be achieved when an under-estimation of population is recognized. In addition, there is a need for a safety margin in population projections so that the problem of under-provision of land and infrastructure can be mitigated even when there is an under-estimation of the population.

11.2 In the case of errors in population projections, reviews should take place as soon as possible.

11.3 Better co-ordination in processing capital works is required. The main reason for the delays in capital works projects in 1996-97 was administrative. If capital works projects are delayed, infrastructure necessary for housing cannot be provided on schedule, aggravating the transport under-capacity in less accessible areas.

11.4 Environmental standards need to be re-considered in the light of local conditions, taking into account such factors as efficient intensity of land use and an acceptable local standard of environment and amenity for the population.

11.5 Development of an area or re-development of an old area requires the government to upgrade the infrastructure in advance to meet the demands of the new land use.

11.6 A review of the residential density guidelines seems necessary.

11.7 Measures aiming at decentralizing the central business district can be considered so as to achieve a more balanced distribution of jobs.

Appendix I**Hierarchy of Plans**Territorial Development Strategy (TDS)

The TDS provides a long-term planning framework, upon which the sub-regional and district planning will be based, for the integration of government policies on land use, transport infrastructure development and environmental matters.

Sub-regional Development Strategies (SRDS)

SRDS are series of plans and development statements which provide a framework for more detailed district planning and work programmes for the five sub-regions of Hong Kong (i.e. the Metropolitan area, the North East New Territories, the North West New Territories, the South East New Territories, and the South West New Territories).

District Plans

District plans are detailed land use plans which translate the broad planning principles identified in the territorial and sub-regional levels to the local level. There are two types of district plans: the statutory and the departmental plans.

Statutory Plans

These plans are prepared by the TPB under the Town Planning Ordinance. They include :

- 1 OZPs show the road systems and the proposed land uses. Attached to each OZP is a Schedule of Notes setting out the uses which are always permitted (i.e. Column 1 uses) and other uses for which the TPB's permission must be sought (i.e. Column 2 uses).

- 2 DPA plans are non-urban area plans which also indicate the land use zones and are accompanied by a set of Notes specifying the uses which are always permitted and those which require TPB's permission. DPA plans are interim plans. They are effective for three years from the date of first publication and will be replaced by OZPs within the period. The provisions for enforcement will continue to be applicable in the areas after the DPA plans are replaced by OZPs.

Departmental Plans

These are non-statutory plans which include the outline development plans and the layout plans. They are usually drawn on larger scales and prepared for unformed or newly-formed land or redevelopment areas that require comprehensive planning. They set out the land uses, the road system, the land use budget and schedule of GIC uses and open space provision. A comprehensive development programme on an annual basis for the area is also included. Once approved by PD, both outline development plans and layout plans are binding on government control, land sales and the reservation and allocation of government sites.

Hong Kong Planning Standards and Guidelines (HKPSG)

The HKPSG is a policy document which sets out the provision standards, criteria for site reservation, locational factors and site requirements of various land uses. It also provides guidelines for the preparation of PBs for development projects in both public and private sectors.

At the territorial level, the HKPSG is applied to determine the total land requirements for various uses and their distribution according to long-term projections. At the sub-regional level, it is used to estimate the broad land use requirements of a sub-region and their allocation between districts. At the district level, it is applied to identify specific areas/sites for individual land uses and facilities and their orderly arrangements. The HKPSG is also used in the preparation of PBs for large-scale development projects.

Appendix II

Domestic Building Density Control: Density Zone 1 Areas

| Height of Building (x) in metres | Percentage Site Coverage | | | Plot Ratio | | |
|----------------------------------|--------------------------|--------------|--------------|--------------|--------------|--------------|
| | Class A Site | Class B Site | Class C Site | Class A Site | Class B Site | Class C Site |
| $x \leq 15$ | 66.6 | 75 | 80 | 3.3 | 3.75 | 4.0 |
| $15 < x \leq 18$ | 60 | 67 | 72 | 3.6 | 4.0 | 4.3 |
| $18 < x \leq 21$ | 56 | 62 | 67 | 3.9 | 4.3 | 4.7 |
| $21 < x \leq 24$ | 52 | 58 | 63 | 4.2 | 4.6 | 5.0 |
| $24 < x \leq 27$ | 49 | 55 | 59 | 4.4 | 4.9 | 5.3 |
| $27 < x \leq 30$ | 46 | 52 | 55 | 4.6 | 5.2 | 5.5 |
| $30 < x \leq 36$ | 42 | 47.5 | 50 | 5.0 | 5.7 | 6.0 |
| $36 < x \leq 43$ | 39 | 44 | 47 | 5.4 | 6.1 | 6.5 |
| $43 < x \leq 49$ | 37 | 41 | 44 | 5.9 | 6.5 | 7.0 |
| $49 < x \leq 55$ | 35 | 39 | 42 | 6.3 | 7.0 | 7.5 |
| $55 < x \leq 61$ | 34 | 38 | 41 | 6.8 | 7.6 | 8.0 |
| $x \geq 61$ | 33.33 | 37.5 | 40 | 8.0 | 9.0 | 10.0 |

Remarks : “Class A Site” means a site, not being a Class B site or Class C site, that abuts on one street not less than 4.5m wide or on more than one such street.

“Class B Site” means a corner site that abuts on 2 streets neither of which is less than 4.5m wide.

“Class C Site” means a corner site that abuts on 3 streets none of which is less than 4.5m wide.

Source : Laws of Hong Kong, Building (Planning) Regulations - First Schedule

Appendix III

Density Zoning in Hong Kong

Broadly speaking, Hong Kong is divided into Metroplan Area, New Towns and Rural Areas.

Metroplan Area

The Metroplan Area comprises Hong Kong Island, Kowloon and New Kowloon and the Districts of Tsuen Wan and Kwai Tsing. The Metroplan area is divided into three Residential Density Zones: R1, R2 and R3. The maximum PR permissible in these zones are set out in Annex A.

Residential Zone 1 (R1)

Covers the highest density of residential development and applies to districts well served by high capacity public transport systems, usually within 400m of a rail station or other major transport interchange. The buildings often incorporate a significant component of commercial floorspace on the lower one to three floors.

Residential Zone 2 (R2)

Covers development at a medium density and applies in locations less well served by high capacity public transport systems. There is usually no commercial floorspace component.

Residential Zone 3 (R3)

Covers the lowest density of residential development and applies to districts with very limited public transport capacity or subject to special constraints for urban design, traffic or environmental reasons.

New Towns

The New Towns are also divided into three Residential Density Zones: R1, R2 and R3, on the same basis as those in the Metroplan Area. In addition, a very low density zone, R4, may be designated where justified by severe geotechnical/infrastructure constraints or compatibility with the adjacent rural low density developments. The maximum PR permissible in these zones are set out in Annex B.

Rural Areas

In the rural areas, densities are much lower partly because of the limited capacity of transport, utility and social infrastructure, but in many cases also because of the need to protect fine natural landscape.

Six Rural Residential Density Zones cover those parts of the rural area which may be designated as suitable for development: RR1 to RR5 and Village. Guidelines are given in Annex C for both PR and typical number of storeys.

Plot Ratio Ranges

According to PD, the maximum PR set out in Annexes A, B and C are targets to be aimed for. However, a maximum PR lower than this target may be applied to where there are significant constraints on development capacity (such as transport or infrastructure limitations, or environmental, topographical or geotechnical conditions), or special design considerations. The range of acceptable PR, however, is not extended below the maximum PR for the next lower density zone.

Annex A

Maximum PR - Metroplan Area

| Density Zone | Type of Area | Location | Maximum PR |
|--------------|------------------------------|------------------------------------|------------|
| R1 | Existing Development Area | Hong Kong | 8/9/10 |
| | | Kowloon and New Kowloon | 6/7.5 |
| | | Tsuen Wan, Kwai Chung and Tsing Yi | 8 |
| | New Development Area and CDA | | 6.5 |
| R2 | | | 5 |
| R3 | | | 3 |

- Remarks :
- 1 Maximum PR of 8,9 and 10 depends on Site Class A, B and C respectively.
 - 2 If there is non-domestic floorspace, maximum PR will be lower.
 - 3 Maximum PR can be 7.5 on sites greater than 400m² which provide parking spaces and loading/unloading bays to HKPSG standards. If there is non-domestic floorspace with a PR in excess of 1.5 maximum PR will be lower.
 - 4 Higher maximum PRs may be permitted in CDAs having regard to local circumstances.
 - 5 In Special Control Areas, maximum PR may be further limited.
 - 6 For Tsuen Wan, Kwai Chung and Tsing Yi, lease modifications for higher PR than those applicable prior to September 1981 are permitted if the proposed development forms the whole or a substantial part of a comprehensive redevelopment plan prepared or approved by the planning authority.

Source : PD

Annex B

Maximum PR - New Towns (excluding Tsuen Wan)

| Density Zone | Maximum PR |
|--------------|------------|
| R1 | 8.0 |
| R2 | 5.0 |
| R3 | 3.0 |
| R4 | 0.4 |

- Remarks :
- 1 PR 8 is permitted where there are no infrastructure constraints.
 - 2 If there is non-domestic floorspace, maximum PR is lower.

Source : PD

Annex C

Maximum PR - Rural Area

| Density Zone | Maximum PR | Maximum Development Site Ratio ¹ | Typical Total Number of Storeys |
|--------------|------------------|---|---------------------------------|
| RR1 | 3.6 | - | 12 |
| RR2 | 2.1 | - | 6 |
| RR3 | - | 0.75 | 3 over car port |
| RR4 | - | 0.4 | 3 over car port |
| RR5 | - | 0.2 | 2 over car port |
| Village | 3.0 ² | - | 3 |

- Remarks :
- 1 Development Site Ratio is applied to the whole site including those parts to be devoted to roads and open space, but excluding slopes (see definition of development site area in Figure 3).
 - 2 New Territories Exempted House.

Source : PD

Appendix IV**Development Controls***Town Planning Ordinance*

Provisions for a planning application system were first incorporated in the Town Planning Ordinance in 1974. Section 16 of the Ordinance enables the TPB¹⁵ to grant permission for uses under Column 2 of the Notes. The existing use of building or land is permitted to continue until redevelopment or a change of use takes place. Redevelopment or change of use may be carried out if it conforms to the plan or, if required, after planning permission has been obtained.

In considering a planning application, the TPB would usually take into account such factors as the planning intention and government policies, social, economic and environmental impacts of the development on the wider area, traffic and infrastructure implications, and compatibility of land uses.

Buildings Ordinance

Under the Buildings Ordinance, development control is achieved mainly through the rejection of building plans :

- if they contravene the provisions of a statutory plan;
- will result in a building differing in height, design, type or intended use from buildings in the immediate neighbourhood;
- if the buildings are used for both domestic purposes and dangerous trades; and
- if the building works are to be carried out on site without adequate connexion to a public street.

¹⁵ Membership of the TPB and their background are relegated to Annex D.

Other Ordinances

Other ordinances which impose restrictions on development include :

- Antiquities and Monuments Ordinance - listing of the monument buildings with statutory protection;
- Country Parks Ordinance - providing that no new development shall be carried out within a country park area without the prior approval of the Country and Marine Parks Authority;
- Environmental legislation - this includes the Air Pollution Control Ordinance, Waste Disposal Ordinance, Water Pollution Control Ordinance and Noise Control Ordinance;
- Foreshore and Seabed (Reclamations) Ordinance - providing the publication of proposals by the Director of Lands in respect of reclamations over and upon any foreshore and seabed;
- Hong Kong Airport (Control of Obstruction) Ordinance - restricting the height of buildings in prescribed areas in the interest of aircraft safety and other related matters;
- Land Drainage Ordinance - provides for the designation of Drainage Authority Areas and the carrying out of drainage works within such areas and other connected matters;
- Marine Parks Ordinance - providing that no new development shall be carried out within a proposed marine park or proposed marine reserve without the prior approval of the Country and Marine Parks Authority;
- Roads (Works, Use and Compensation) Ordinance - provides for the publication of road proposals, the objection procedures, the authority to carry out road works and for the use of roads land; and
- Waterworks Ordinance - requiring a lessee of land within a gathering ground to drain, treat or develop his leased land in the manner the Governor may specify.

Lease

In drawing up the lease conditions, the government as the lessor can stipulate development requirements such as uses, site coverage, PR, building height, non-building areas, design and disposition, parking and loading/unloading requirements, environmental protection requirements and sometimes the provision of GIC facilities. Lease enforcement action can be taken against breaches of lease conditions, and priority is usually given to the misuse of residential premises.

Annex D

Membership and Background of the Town Planning Board**(A) Membership**

1. Secretary for Planning, Environment and Lands (Chairman)
2. Director of Planning (Vice-chairman)
3. Ms. Esther CHAN Wai-fong
4. Mr. CHAN Ka-kui, JP
5. Mr. E J DAVISON
6. Mr. FUNG Shiu-wing
7. Mr. Daniel HEUNG Cheuk-kei
8. Mr. Victor SO Hing-woh, JP
9. Mr. Edmund YOUNG Kak-sun
10. Mr. Alfred CHAN Wing-kin
11. Prof. David LUNG Ping-yee, MBE, JP
12. Mr. Edward PONG Chong, JP
13. Prof. Anthony WALKER
14. Prof. YEUNG Yue-man, OBE, JP
15. Mr. Charles Nicholas BROOKE, JP
16. Mr. Anthony WONG Luen-kin
17. Prof. JIM Chi-yung
18. Mr. John YUNG Ho-chuen
19. Mr. Daniel CHAM ka-hung
20. Dr. CHAN Wai-kwan
21. Mr. Christopher CHENG Wai-chee, OBE, JP
22. Prof. Anthony M J COORAY
23. Prof. Alan P JEARY
24. Mr. LAM Kwok-cheong
25. Prof. LEUNG Tin-pui, JP
26. Mr. Frederick LUI Lai-cheung
27. Secretary for Housing
28. Deputy Secretary for Transport (Transport Management)
29. Director of Home Affairs
30. Director of Environmental Protection
31. Director of Lands
32. Principal Government Town Planner (District) (Secretary)

(B) Background *

- 7 Government Officials
- 7 Academics
- 6 Architects / Engineers / Surveyors
- 3 Industrialists
- 2 Executives
- 2 Lawyers
- 2 Social Workers
- 1 Businessman / District Board Member
- 1 Businessman

* The background of members in Section B are not listed in the same order as that for the membership in Section A.

Source : Home Affairs Branch

Appendix V

Plot Ratio vs. Development Ratio

| | PLOT RATIO (PR) | DEVELOPMENT RATIO (DR) |
|---------------|--|--|
| Definition | $PR = \frac{GFA}{NSA}$ <p>PR is defined as the ratio between the GFA of a building and the area of site on which it is erected (NSA).</p> | $DR = \frac{GF}{NEA}$ <p>DR is defined as the ratio between (GF) in public housing development and NEA.</p> |
| Application | PR applies to private housing, PSPS and SCH development. | DR applies to PRH, HOS and mixed PRH/HOS development. |
| Stipulated by | Building (Planning) Regulations and OZPs. The approving authority for the PR to be permitted for a particular project is the Building Authority. | DR follows the administrative guidelines stipulated in the HKPSG. The approving authority for the DR is the CPLD under PELB. |
| Site Area | Site area, as defined by Building (Planning) Regulations, is the 'area of the site on which the building is erected' but takes no account of any part of any street or service lane, hence is equivalent to gross site area excluding roads. However, freestanding GIC facilities are not normally included into the gross site area of the private development. | The NEA defined at Figure 3 is used, hence is gross site area (GSA) excluding periphery slopes, freestanding GIC facilities and road. |
| Floor Area | The GFA is defined under Building (Planning) Regulations as 'the area contained within the external walls of the building measured at each floor level ..., and the thickness of the external wall of the building' but excluding 'any floor space that is constructed or intended to be used solely for parking motor vehicles, loading or unloading of motor vehicles or occupied solely by machinery or equipment for any lift, air-conditioning or heating system or any similar service'. | The GF is the sum of the domestic and commercial floorspace of a project. Domestic floorspace is calculated by the block footprint multiplied by the number of storeys (including ground floor). Hence, it includes all area within the building for non-residential uses such as lift walls, machine rooms and any similar service areas. Commercial floorspace is the gross floor area of the stand alone commercial centre. No account is taken of any floorspace for car parking or non-commercial uses. |

Sources : PD, HKPSG
HB

Appendix VI**Section 16 of the Town Planning Ordinance**

- 1) Where a draft plan or approved plan, whether prepared or approved before or after the commencement of the Town Planning (Amendment and Validation) Ordinance 1974 (59 of 1974), provides for the grant of permission for any purpose, an application for the grant of such permission shall be made to the Board.
- 2) Any such application shall be addressed in writing to the secretary to the Board and shall be in such form and include such particulars as the Board thinks fit.
- 3) The Board shall within 2 months of the receipt of the application, consider the same in the absence of the applicant and, subject to subsection (4), may grant or refuse to grant the permission applied for.
- 4) The Board may grant permission under subsection (3) only to the extent shown or provided for or specified in the plan.
- 5) Any permission granted under subsection (3) may be subject to such conditions as the Board thinks fit.
- 6) The secretary to the Board shall notify the applicant in writing of the Board's decision on an application under this section, and where the Board refused to grant permission shall also notify the applicant of his right to a review under section 17.
- 7) For the purposes of section 16(1)(d) and (da) of the Buildings Ordinance (Cap. 123), anything permitted by the Board under this section shall not be a contravention of any approved plan or draft plan prepared under this Ordinance (*Amended 2 of 1988 s.6*)

(Added 59 of 1974 s.3)

Source : Laws of Hong Kong, Town Planning Ordinance

Appendix VII

DR of Sites to be Completed by HA between 1997-98 and 2001-02

| Site | Number of Flats | Population | DR |
|----------------------------------|-----------------|------------|------|
| 1 Aldrich Bay | 4,380 | 13,584 | 7.2 |
| 2 Tin Wan | 3,862 | 11,586 | 6.26 |
| 3 Woodside | 1,750 | 5,775 | 7 |
| 4 Lai Chi Kok | 3,350 | 10,288 | 7.2 |
| 5 Shek Yam | 3,604 | 11,265 | 7.82 |
| 6 Kwai Shing East | 5,526 | 12,648 | 6.62 |
| 7 Hing Wah | 2,277 | 7,879 | 6.1 |
| 8 Sha Tin Area 14B | 4,816 | 14,883 | 7 |
| 9 Ma On Shan Area 77 | 3,440 | 10,320 | 6.99 |
| 10 Fanling Area 49A | 3,806 | 13,872 | 5.95 |
| 11 Yuen Long Flatted Factory | 312 | 936 | 7 |
| 12 Tin Shui Wai Area 30 and 31 | 9,799 | 31,376 | 7.18 |
| 13 Tin Shui Wai Area 3 | 6,580 | 20,003 | 6.92 |
| 14 Tin Shui Wai Area 102 | 9,312 | 30,686 | 6.96 |
| 15 Tuen Mun Area 52 | 5,263 | 17,118 | 7.03 |
| 16 Tseung Kwan O Area 74 | 4,558 | 14,920 | 7.53 |
| 17 Tseung Kwan O Area 57 | 1,920 | 6,260 | 7.2 |
| 18 Po Lam Road | 5,839 | 18,500 | 5.75 |
| 19 Yau Tong and Ko Chiu Road | 11,790 | 37,770 | 7.2 |
| 20 Lei Muk Shue | 10,557 | n.a. | 5.55 |
| 21 Pak Tin Redevelopment | 7,500 | 29,000 | 4.8 |
| 22 Cheung Sha Wan West | 5,585 | 16,284 | 7.04 |
| 23 Fortune Street | 2,844 | 7,868 | 7.7 |
| 24 Sau Mau Ping | 18,600 | 66,000 | 6.87 |
| 25 Un Chau Street | 4,350 | 14,960 | 7 |
| 26 Upper Wong Tai Sin | 4,493 | 15,558 | 7.01 |
| 27 Hung Hom | 1,667 | 5,635 | 6.6 |
| 28 Mong Kok West | 2,687 | 9,000 | 5.79 |
| 29 Chuk Yuen Estate | 370 | 1,220 | 7.5 |
| 30 Tung Chung Area 30 and 31 | 9,660 | 32,217 | 6.03 |
| 31 Kwai Chung | 8,512 | n.a. | 6.53 |
| 32 Tseung Kwan O Area 59 | 11,084 | 46,771 | 6.83 |
| 33 Lok Fu Phase 7 | 640 | 3,227 | 3 |
| 34 King Shan Court Phase 2 | 350 | 1,155 | 5.9 |
| 35 Wang Tau Hom Phases 13 and 14 | 1,170 | 3,530 | 3.3 |
| 36 Tung Chung Area 10 | 4,304 | 15,338 | 5 |

Source : HD

Appendix VIII

PR of Sites to be Completed by HS between 1997-98 and 2001-02

| Site | Number of Flats | Population | PR |
|---|-----------------|------------|-------------|
| 1 Lakeside Garden (Sai Kung Area 3) | 970 | 3,146 | 2.22 |
| 2 Verbena Heights (TKO Area 19B) | 2,865 | 8,236 | 6.79 |
| 3 Healthy Village Phase II | 648 | 2,268 | 9.37 |
| 4 Kai Tak Phases I and II | 1,256 | 4,396 | 7.18 |
| 5 Jubilant Place, Ma Tau Kok | 900 | 3,932 | 6.36 |
| 6 Park Belvedere (STTL 429) | 882 | 3,087 | 5.00 |
| 7 Tseung Kwan O Area 24 (TKOTL 37) | 1,424 | 4,984 | 8.00 |
| 8 Radiant Towers (TKOTL 42) | 704 | 2,464 | 8.00 |
| 9 Marina Habitat (ALCIL 127) | 992 | 3,472 | 9.18 |
| 10 Chung Hau Street (KIL 11066) | 712 | 2,492 | 7.34 |
| 11 Queen's Road Central/Hollywood Road | 536 | 1,715 | 9.62 |
| 12 Tseung Kwan O Area 13 (TKOTL 43) | 1,526 | 5,341 | 8.00 |
| 13 Lung Poon Street (NKIL 6214) | 798 | 2,793 | 7.50 |
| 14 Tak Yi Street (STTL 430) | 508 | 1,778 | 5.00 |
| 15 Hang Shing Road (KCTL 456) | 420 | 1,470 | 5.00 |
| 16 Lai Kong Street (KCTL 458) | 1,456 | 3,906 | 5.00 |
| 17 Ma On Sha Area 77 | 1,116 | 3,906 | 5.00 |
| 18 29 Ka Wai Man Rd Kennedy Town | 496 | 1,736 | 8.00 |
| 19 Tuen Mun Area 4C | 912 | 3,192 | 7.71 |
| 20 Tai Kok Tsui (KIL 11107) | 680 | 2,380 | 5.50 |
| 21 West Kowloon Reclamation (Land Development Corporation Clearees) | 1,094 | 3,105 | 5.50 |
| 22 Tin Shui Wai (Phase I) Area 103 (Part Only) | 1,500 | 5,250 | 3.90 |
| 23 Welfare Road, Aberdeen | 860 | 3,010 | 8.00 |
| 24 Tsing Shum Street, Tsing Yi | 700 | 2,450 | 5.00 |
| 25 Perowns Barracks | 500 | 1,750 | 4.33 |

Source : HS

Appendix IX

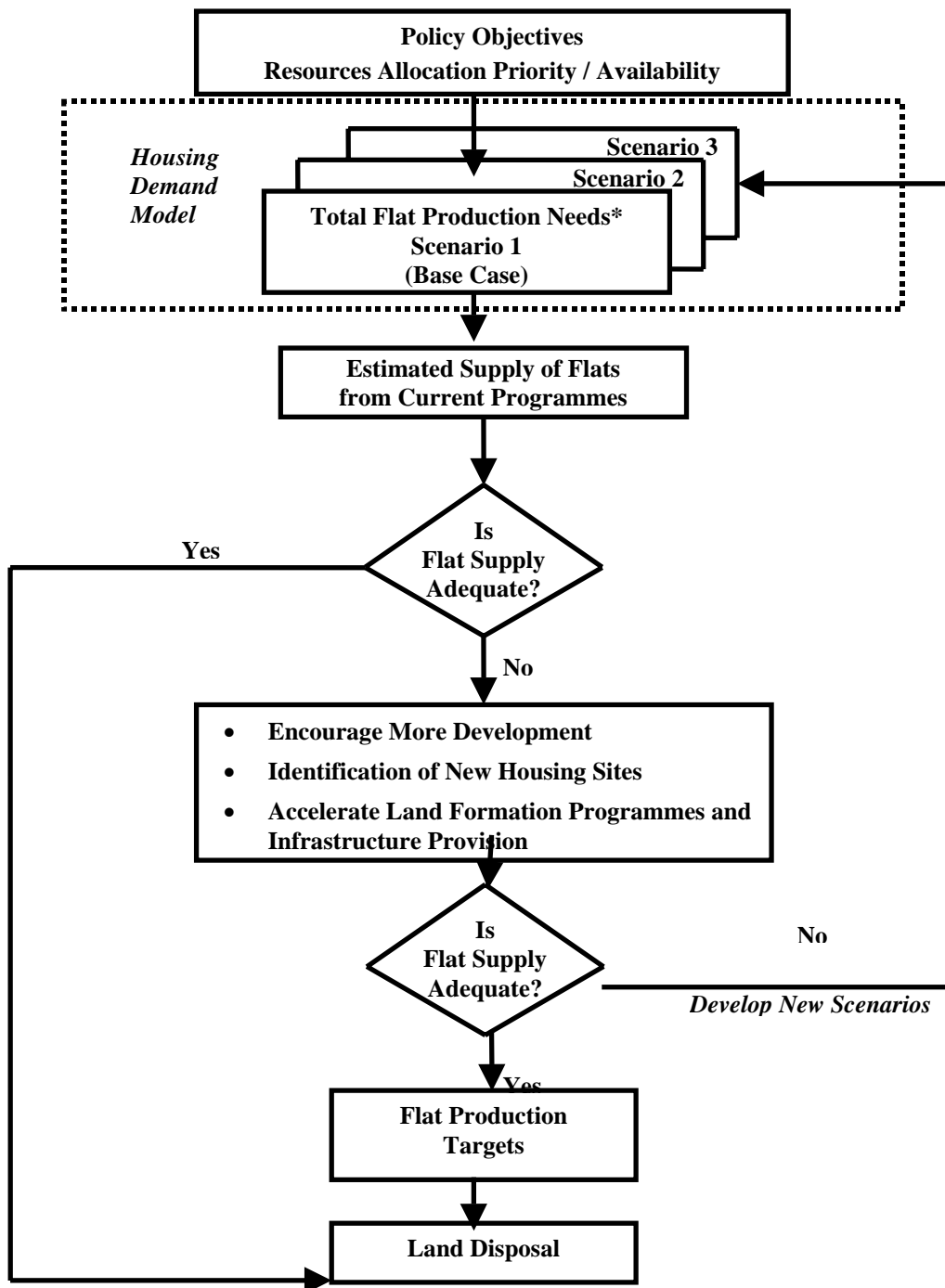
Population Projections in 1977, 1982, 1987 and 1992 (thousand)

| (Mid-Year) | Population Projections For 1977 - 1996 in 1977 Based on 1976 By-Census | Population Projections for 1982 - 2001 in 1982 based on 1981 Census | Population Projections for 1987 - 2006 in 1987 based on 1986 By-Census | Population Projections for 1992-2011 in 1992 based on 1991 Census | Actual Population |
|------------|--|---|--|---|-------------------|
| 1977 | 4,512.9 | - | - | - | 4,509.8 |
| 1978 | 4,581.4 | - | - | - | 4,597.0 |
| 1979 | 4,650.8 | - | - | - | 4,878.6 |
| 1980 | 4,722.0 | - | - | - | 5,038.5 |
| 1981 | 4,794.3 | - | - | - | 5,154.1 |
| 1982 | 4,867.9 | 5,241.8 | - | - | 5,232.9 |
| 1983 | 4,941.8 | 5,352.0 | - | - | 5,345.1 |
| 1984 | 5,016.5 | 5,463.2 | - | - | 5,397.9 |
| 1985 | 5,092.7 | 5,575.3 | - | - | 5,456.2 |
| 1986 | 5,169.2 | 5,687.6 | - | - | 5,524.6 |
| 1987 | 5,246.2 | 5,799.9 | 5,585.0 | - | 5,580.5 |
| 1988 | 5,322.5 | 5,911.4 | 5,647.1 | - | 5,627.6 |
| 1989 | 5,397.6 | 6,021.5 | 5,711.0 | - | 5,686.2 |
| 1990 | 5,471.3 | 6,129.5 | 5,775.3 | - | 5,704.5 |
| 1991 | 5,543.3 | 6,235.2 | 5,840.4 | - | 5,754.8 |
| 1992 | 5,612.7 | 6,337.6 | 5,903.2 | 5,734.9 | 5,811.5 |
| 1993 | 5,680.0 | 6,436.5 | 5,964.3 | 5,779.4 | 5,901.0 |
| 1994 | 5,744.7 | 6,532.4 | 6,023.4 | 5,816.3 | 6,035.4 |
| 1995 | 5,807.3 | 6,624.0 | 6,080.2 | 5,852.2 | 6,156.1 |
| 1996 | 5,867.1 | 6,712.4 | 6,134.6 | 5,884.7 | 6,292.0 |

Sources : CSD, Hong Kong Population Projections 1977-1996
CSD, Hong Kong Population Projections 1982-2001
CSD, Hong Kong Population Projections 1987-2006
CSD, Hong Kong Population Projections 1992-2011
CSD, Hong Kong Monthly Digest of Statistics

Appendix X

Deriving Flat Production Targets

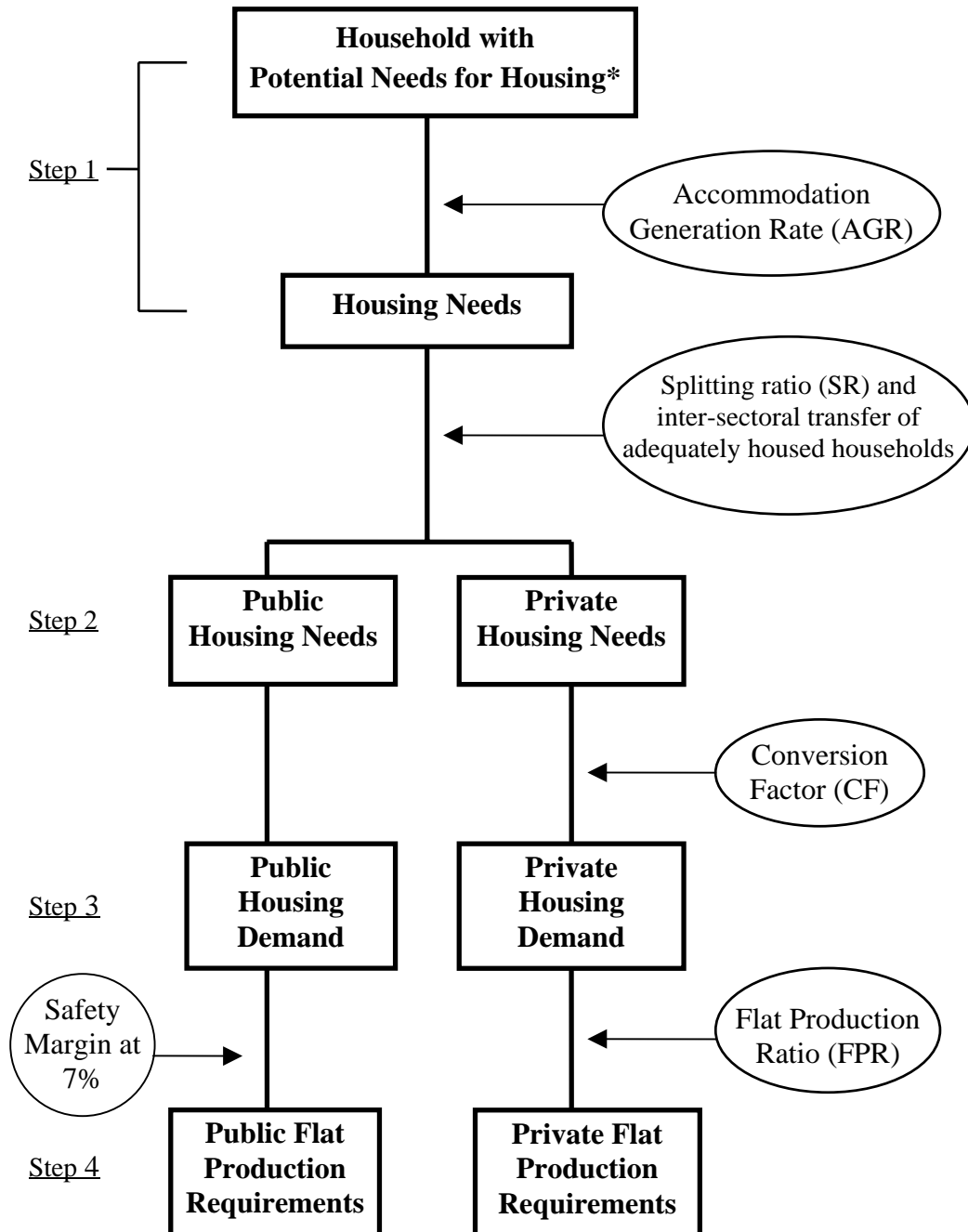


* **Population** is an input in the estimation of flat production needs. Please refer to Annex E for details of the housing demand model.

Source : HB

Annex E

Housing Demand Model



* **Population** is an input in the estimation of potential housing needs.

Source : HB.

Appendix XI

Aims of The Metroplan

The Metroplan aims to :

- enhance Hong Kong's role as an international port and airport; as an international business, finance and tourist center; as a center for a diverse range of light manufacturing industry and as the center of government for the territory;
- provide opportunities to satisfy, as far as practicable, housing needs according to what people can afford and where they would like to live;
- achieve a more balanced distribution of jobs relative to population concentrations, the locational preferences on new enterprises and the ease of travel;
- relocate activities which create severe environmental problems;
- reduce population densities by such means as spreading development on to adjoining harbour reclamations and comprehensive urban renewal;
- provide conveniently located community facilities which aim at new town standards;
- create an urban form that will foster a sense for community identity;
- conserve and enhance major landscape attributes and important heritage features;
- provide a multi-choice, high capacity transport system that is financially viable, energy efficient and makes provision for the safe and convenient movement of pedestrians; and
- provide a strategy that can be carried out by both the public and the private sectors under variable circumstances, particularly with respect to the availability of resources and significant changes of demand.

Source : PD, Metroplan: The Selected Strategy

Appendix XII

List of Infrastructure-related Projects Identified by HB

| Project | Category | Expenditure (\$ million) |
|---|----------|--------------------------|
| TDD Projects | | |
| 1. B550CL in Tin Shui Wai development - site formation in areas 101 to 108, 110, 111 and 117 (part) | B | 86.62 |
| 2. B551CL Tin Shui Wai further development - engineering investigation | A | 22.93 |
| 3. B552CL Tung Chung and Tai Ho development phase 3 - comprehensive feasibility study | A | 44.50 |
| 4. B553CL Feasibility study for intensification and extension of Tseung Kwan O New Town | A | 28.60 |
| 5. B554CL Tin Shui Wai further development - engineering works for priority sites development - consultants' fees and site investigation | B | 53.46 |
| 6. B555CL Tin Shui Wai further development - remaining site formation and engineering works for Reserve Zone development - consultants' fees and site investigation | B | |
| 7. B558CL Planning and development studies on North West New Territories - consultants' fees and site investigation | B | 47.4 |
| 8. B559CL Planning and development studies on North East New Territories - consultants' fees and site investigation | B | 35.5 |
| 9. B560CL Planning and development studies on Hong Kong Island South and Lamma Island - consultants' fees and site investigation | B | 24.0 |
| 10. B643TH Trunk Road T7 in Ma On Shan | B | 885.60 |
| 11. Tate's Cain highway and T7 improvement (between Shek Mun Interchange and T6 Interchange) in Shatin | | 171.18 |
| 12. Tin Shui Wai further development - engineering infrastructure and upgrading works for the priority sites development | | 1,388.29 |
| 13. Tin Shui Wai further development - engineering works and remaining site formation for Reserve Zone areas 101, 105 to 108, 109(b), 110 to 123 | | 1,397.39 |
| WSD Projects | | |
| 14. B082WC Fresh and flushing water reticulation system within Tin Shui Wai Reserve Zone | B | 57.33 |
| 15. B120WC Extension of Shau Kei Wan high water supply systems | B | 113.25 |
| 16. B121WC Extension of water supply to Ma On Shan | B | 187.92 |
| 17. B140WF Additional treatment and water transfer facilities for the metropolitan area and north-eastern New Territories - Stage 1, construction of Tai Po treatment works and pumping station | A | 1,339.20 |
| 18. B141WF Ngau Tam Mei treatment works - design and construction in Yuen Long | A | 2,050.92 |

| | Project | Category | Expenditure (\$ million) |
|---------------------|--|-----------------|---------------------------------|
| 19. | B202WF Additional treatment and water transfer facilities for the metropolitan area and north-eastern New Territories - investigation and preliminary design study | A | 24.47 |
| 20. | B211WF Transfer facilities from the Butterfly Valley primary service reservoirs in the metropolitan area - main laying works in West Kowloon Reclamation | A | 64.69 |
| 21. | B212WF Transfer facilities from the Butterfly Valley primary service reservoir to the secondary service reservoir in the metropolitan area - stage 1 in Shamshuipo | B | 448.51 |
| 22. | B213WF Ngau Tam Mei treatment works - laying of a trunk watermain along Castle Peak Road from Long Ha to Yuen Long | A | 164.16 |
| 23. | B217WF Ngau Tam Mei treatment works - site investigations and consultant fees | A | 48.66 |
| 24. | B219WF Additional treatment and water transfer facilities for the metropolitan area and north-eastern New Territories - detailed design | A | 52.84 |
| 25. | B270WF Yuen Long water supply - Tan Kwai Tsuen north fresh water service reservoir | B | 628.62 |
| 26. | B272WF Additional treatment and water transfer facilities for the metropolitan area and north-eastern New Territories | A | 1,783.19 |
| HWD Projects | | | |
| 27. | B578TH Wong Chuk Hang flyover and associated road works | B | 201.79 |
| 28. | B640TH Flyover at Tai Chung Kiu Road/Siu Lek Yuen Road in Shatin | B | 109.14 |
| 29. | B641TH Pedestrian subway at junction of Chai Wan Road/Tai Tam Road near Chai Wan | B | 78.19 |
| 30. | B642TH Improvements to Island Eastern Corridor section between North Point Interchange and Sai Wan Ho | B | 723.25 |
| 31. | B644TH Flyover at Pok Oi Interchange in Yuen Long | B | 155.48 |
| 32. | Sai Sha Road widening from Kam Ying Road to Tai Tung Village in Ma On Shan | | 132.08 |
| 33. | B130TH Proposed footbridge and improvements to Ap Lei Chau Bridge Road and Ap Lei Chau Drive | B | 97.74 |
| 34. | Footbridge at Wong Chuk Hang Road | | 35.64 |
| 35. | Ap Lei Chau North Coastal Road | | 49.68 |
| 36. | Widening of Clear Water Bay Road (near Tai Po Tsai) in Sai Kung | | 122.47 |
| CED Projects | | | |
| 37. | Sham Tseng further reclamation | | 122.58 |
| 38. | B556CL Planning and engineering feasibility study for development at Anderson (north-east of Sau Mau Ping) | B | 18.7 |
| 39. | B557CL Planning and engineering feasibility study for development near Choi Wan Road and Jordan Valley | B | 16.0 |

| Project | Category | Expenditure (\$ million) |
|--|----------|--------------------------|
| ASD Projects | | |
| 40. B195EP Primary school in Tin Shui Wai Area 110 | B | 48.48 |
| 41. B196EP Primary school in Tin Shui Wai Area 105 | B | 48.48 |
| 42. B197EP First primary school in Tin Shui Wai Area 102 | A | 51.95 |
| 43. B198EP Secondary primary school in Tin Shui Wai Area 102 | A | 50.87 |
| 44. B199EP Third primary school in Tin Shui Wai Area 102 | A | 50.87 |
| 45. B165ES Secondary school in Tin Shui Wai Area 110 | B | 58.91 |
| 46. B166ES Secondary school in Tin Shui Wai Area 106 | B | 58.94 |
| 47. B167ES First secondary school in Tin Shui Wai Area 102 | A | 59.83 |
| 48. B168ES Second secondary school in Tin Wai Area 102 | A | 58.86 |
| 49. Primary school in Tin Shui Wai Area 101 | | 50.72 |
| 50. Primary school in Tin Shui Wai Area 111 | | 50.72 |
| 51. Secondary school in Tin Shui Wai Area 101 | | 65.64 |
| 52. Divisional police headquarters in Tin Shui Wai | | 254.61 |
| 53. A primary school in Tin Shui Wai Area 103 | | 50.72 |
| 54. A primary school in Tin Shui Wai Area 109 | | 50.72 |
| 55. A primary school in Tin Shui Wai Area 113 | | 50.72 |
| 56. A primary school in Tin Shui Wai Area 116 | | 50.67 |
| 57. A secondary school in Tin Shui Wai Area 103 | | 65.64 |
| 58. A secondary school in Tin Shui Wai Area 109 | | 65.64 |
| 59. A secondary school in Tin Shui Wai Area 113 | | 65.64 |
| 60. A secondary school in Tin Shui Wai Area 116 | | 65.64 |
| 61. A special school in Tin Shui Wai Area 109 | | 31.33 |
| 62. A general clinic in Tin Shui Wai Reserve Zone | | 46.44 |
| HD Project | | |
| 63. Hung Hom Phase II redevelopment site formation | | 29.82 |
| TOTAL | | 14,493.83 |

Remarks : 1 All project estimates/expenditure forecasts are based on December 1996 prices.
 2 Except for projects which they themselves are consultancy studies, a preliminary project feasibility study has to be completed and endorsed by Secretary for Works and Secretary for the Treasury before they can be accorded a Category B status. Detailed design of the projects will follow and they will be upgraded to Category A for work to commence upon approval by the Finance Committee.

Source : HB

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