Working Paper Series 1:
National Policy, Planning and Funding Context of MUTPS since 1945

Working Paper 1.5

Planning, Managing and Financing Mega Urban Transport Projects in Hong Kong by the Public Sector and Public-Private Partnership

DRAFT NOT FOR CITATION

Mee Kam Ng and Frederik Pretorius,
Department of Real Estate and Construction, The University of Hong Kong, Hong Kong.

1. Introduction

Hong Kong is famous for its efficiency in launching mega-infrastructure development in a multi-modal transportation environment. Anyone who has flied to Hong Kong must be impressed by its Airport Express which can transport arrival passengers to the heart of the city in less than 30 minutes. The Tsing-Ma Bridge, the world's 6th largest suspension bridge, that joins the once remote Lantau Island where the current international Chek Lap Kok Airport locates with the metropolitan area, is now an icon of the city. Although the government of Hong Kong runs an efficient system in providing infrastructure, it is also one of the pioneers in fostering public-private-partnership. Its success in build-operate-transfer (BOT) operation has provided a framework for others to follow. All the three harbour-crossing tunnels are BOT projects. Furthermore, the city's largest people mover carrying more than 2.5 million passengers each day, the 'privatized quasi-public' Mass Transit Railway Corporation with its concomitant property development is now a model for development in other parts of Asia. This paper explores in more detail the planning, managing and financing mechanisms that enable the construction of these mega-transport projects. Unlike other countries, the institutional regime governing the provision of these infrastructure projects have experienced little changes until recently when the executive-led government is increasingly challenged by the maturing civil society.

The following section first outlines general history of development in Hong Kong. Unlike other great places, Hong Kong was just a humble unknown fishing village with 'hardly a house upon it' some 160 years ago. It was only after the arrival of the British colonizers in the 1840s that larger scale "development" started to take place. Most of the mega-projects undertaken then were reclamation projects. However, major 'developments' did not take place in the former British colony after 1949 when the People's Republic of China was set up and Hong Kong became a city of "transferred industrialisation" and "refugees". The third section discusses the general background of Hong Kong as an executive-led government with a strong and efficient bureaucracy, working within well-established procedures written clearly either in ordinances or in administrative guidelines. As this structure has evolved over a number decades when Hong Kong was largely a refugee society with a 'borrowed time borrowed place' mentality, one can see very little role for the civil society in the planning and monitoring of the public works programmes which are discussed in section four. Section five outlines the public-private partnership schemes experimented in the city, focusing on two specific modes—the build-operate-transfer mode and the rail-property mode pursued by the railway corporations particularly the Mass Transit Railway Corporation. Section six concludes the paper.

2. Executive-led Government in Hong Kong

Hong Kong is a Special Administrative Region under the 'One Country, Two Systems' arrangement stipulated in Article 31 of the Constitution of the People's Republic of China. Hong Kong can be described as an administrative state. The Chief Executive that heads the government is elected by an 800-member electoral college, which includes some 28 constituencies (with about 180,000 eligible voters), religious groups and district and legislative councillors. There is no secret that the candidacy for the Chief Executive needs the tacit consent of the Central Government. The most important body in policy making is the Executive Council, which consists of official and unofficial members appointed by the government. Under the Chief Executive are the Secretary for Justice, the Chief Secretary for Administration and the Financial Secretary. The Chief Secretary for Administration oversees 11 policy-making bureaux and their executive departments. Since July 2002, the government has implemented the Principal Officials Accountability System (POAS). The three most senior civil service positions – the Chief Secretary, Financial Secretary and Justice Secretary – were converted to 'political' appointments and 11 political appointees were added to run the 11 policy bureaux (Ng, 2006, p.318). Figure 1 shows the structure of the administration.

- Figure 1 -

The Legislative Council in Hong Kong is a unicameral legislature. The current Council has 60 members, 30 were directly elected by universal suffrage from geographical constituencies and 30 were elected from functional constituencies. Hence for the 180,000 functional constituency voters, they have two votes in electing their legislators. As a society with rule by law, the court system is also well established with a Court of Final Appeal. However, according to Article 158 of the Basic Law, Hong Kong's mini-constitution, the power of its interpretation is vested in the Standing Committee of the National People's Congress in Beijing.

These relationships of the executive, legislative and judicial branches ensure the perpetuation of an executive-led government.

The city is in fact rather small in size with a total area of 1,108 km^2, of which 264 km^2 are developed land (23.8% of the total area). Among the developed land, 78 km^2 (7% of the total area) are for residential development (HKSAR Government, 2005). Close to 40 per cent of the land is zoned as Country Park where land is conserved and generally no development is allowed.

3. A Brief Overview of Development in Hong Kong

From a Fishing Village to an International Financial Centre

Before 1841, Hong Kong was just a small fishing village at the southern gate of the 'Middle Kingdom' (China). Had it not been ceded to Britain following the defeat of the imperial empire in the Opium War, it probably would not be too different from a 'barren island with hardly a house upon it'. However, becoming a British colony had changed the fate of the city. In the subsequent century (1840s to 1940s), economic activities including trade, commercial development, entrepot port functions and some industrial development began to take root. After 1949, that is, the setting up of the People's Republic of China, and the 1950s, transferred industrialization from the mainland to the British Colony saved the dying entrepot port from the UN embargo on Chinese products as a result of the Korean War. The city was industrialized almost overnight, thanks to the influx of capitalists and their capital goods and the refugees as readily available labour force. The 1960s and 1970s saw the economic take-off of Hong Kong, accompanied by rapid industrialization and spatial growth. As the economy grows, restructuring set in propelling the city to 'tertiarize' and become an international financial centre in the 1980s. Economic restructuring has deepened since the 1990s, a result not unrelated to Hong Kong's return to Chinese rule, the regionalization of the cross-boundary economies of Hong Kong and the Pearl River Delta and the rise of the civil society.

Before the 1950s: minimal efforts by the Colonial Government

Hong Kong was more or less just an entrepot port for China for about two third of its 156 years of colonial history. When Captain Elliot negotiated the ceding of the Hong Kong Island from the Chinese government after the Opium War, the then British Foreign Secretary, Lord Palmerston, was not at all happy with the deal. To him, Hong Kong was just "a barren island with hardly a house upon it" and Captain Elliot had not tried his best to strike for a better deal for his country. In fact, Captain Elliot started to "sell" land well before the signing of the Treaty of Nanking in 1842. During the first century of the British colonial rule, Hong Kong was an entrepot port and so not surprisingly mega transport projects were basically related to reclamation or the building of praya (waterfront) for road construction, marine access, pier and related works (to facilitate trading activities), solving problems of rapid urbanization and hygiene concerns.

In 1842, a Land Committee was formed by Governor Pottinger to investigate land allotments; define the locations of the plots already sold or granted; plan the roads; remove encroachments; control reclamation etc. (Bristow, 1984, p.25). By 1843, the Public Works Department and the Crown leases system were in place, which have impacted on land use development since. However, for land sales conducted in 1841 before the formal signing of the Treaty of Nanking, terms were vague and some actually involved illegal reclamations. Since the government had little financial means to reclaim land, harbourfront land owners were asked in 1856 to shoulder the construction costs of piers, seawalls and reclamation as well as to pay rent for the use of the reclaimed land in exchange for their marine access right. However, in 1867, the government lost a court case and the Supreme Court made the proposed praya the financial responsibility of the government.

Unlike the controversies surrounding reclamation in the Central district, reclamation continued apace by the private sector in other parts of Hong Kong, especially by the Chinese community: the landholders were responsible for the reclamation and had the rights to use the reclaimed land. By 1883, the Survey Department was in charge of all infrastructure & reclamation works. The Praya Reclamation Public Works Unit under the Public Works Department had the remit on port development & reclamation works. Between 1892 to 1918, 3.8 million sq. ft. were reclaimed through government-co-ordinated private efforts.

In 1905, reclamation took place to provide land for the construction of the Kowloon-Canton Railway. Between 1915 to 1920, land was reclaimed at Kai Tak (the former international airport) by the Kai Tak Land Development Corporation to build private housing. The Corporation had to construct infrastructure such as roads and nullahs and it had to transfer its rights after completion, paid land premium and land rent but had no marine access rights. All these various versions of public-private partnership perhaps help explain why Hong Kong has been so successful in delivering infrastructure through public-private partnership in recent decades.

1950s-: Forced Government intervention as a Result of Rapid Urbanisation & Industrialization

Influx of capitalists and refugees from the Mainland after the setting up of the People's Republic of China; depletion of housing stocks due to war damages and economic opportunities created by the Korean War had triggered transferred industrialization which accelerated reclamation by the Government. In 1948, Sir Patrick Abercrombie recommended the Abercrombie Plan which outlined new town development to facilitate industrialization and urbanization. In the 1950s, the Public Works Ordinance was enacted which allowed for consideration of claims and compensation. The 1950s also saw the expansion of the Kai Tak Airport.

In 1965, the Colony Outline Plan was made. However, because of the riots in Hong Kong in 1966 to 1967, the Plan was not approved by the Land Development Planning Committee until 1971 and the Executive Council in 1972. By 1973, the Ten Year Housing Programme was launched and the new towns programmes started after the oil crises. All these involved a lot of reclamation work. Government was responsible for infrastructure developments after reclamation. In the 1980s, construction of the Hong Kong Mass Transit Railway (MTR) was completed by MTR Corporation. In 1984, the first Territorial Development Strategy was announced and the spatial strategy had gone from decentralization (new towns development) to recentralization (tertiarization of the economy) which includes many reclamation & infrastructure projects (including the then possible relocation of the Kai Tak Airport) around the central Harbour area. By then, Hong Kong has developed quite a sophisticated public works programme to deliver these projects.

4. Public Works Programme

Planning and Development in General

Unlike its motherland, Hong Kong has refrained from socio-economic planning as a 'proof' of the government's endorsement of a 'minimum intervention and maximum support' economic philosophy. However, the city does have a hierarchy of plans to direct development (Figure 2). At the top level is the strategic territorial development plan, the most current version of which is called Hong Kong 2030. It is an administratively done 'spatial' plan that helps earmark 'growth areas'. At the second level is the regional development strategy for the

metropolitan area and each of the four rural sub-regions. At the local level are the statutory Outline Zoning Plans and the administratively done outline development and layout plans. However, it would be wrong to assume that Planning Department formulates all the strategic mega-transport projects. Since the division of labour within the bureaucracy is relatively fine, the Planning Department is mostly responsible for population forecast and demand for various kinds of land uses. Regarding the actual location and alignment of various transport projects, most planners tend to claim that they have little say. There is a grain of truth in this argument as the alignment of roads in statutory plans, strangely, is not gazetted under the Town Planning Ordinance but rather, rests with the Roads (Works, Use and Compensation) Ordinance. However, planners are the ones to forecast transport demand based on planned land uses. Therefore, while the planners may have no say in the alignment of transport corridors, they are not totally innocent of deciding on the scale of infrastructure projects. In other words, it is the planned land uses that drive transport demand. Figure 3 tries to highlight the major departments, their respective advisory bodies and the related government-based committees and legislation in planning and development in Hong Kong.

- Figures 2 & 3 -

As Hong Kong does not have socio-economic plans and the spatial land use plans may not be updated enough to inform strategic development, infrastructure development naturally becomes a function of individual policy areas which may or may not be included in the strategic spatial plan. According to the Government's Project Administration Handbook (2006, p.1.17), 'All engineering projects are formulated and approved in accordance with the policies set down by the Government through individual policy committees or on recommendations of the appropriate advisory committee'. Table 1 below lists some most relevant policy areas for mega-infrastructure development.

Table 1: Major Policy Areas related to Mega-infrastructure Development

Land development and Reclamation
Committee on Planning and Land Development (CPLD)
Antiquities Advisory Board
Land Acquisition and Clearance Committee (LACC)
Marine Works
Ports Committee
Standing Committee on Waterborne Transport (SCWT)
Port development strategy and programming
Port Progress Committee (PPC)
Hong Kong Port Development Council
Port Co-ordination Committee (PCC)
Road projects
Transport Policy Co-ordinating Committee (TPCC)
Transport Advisory Committee (TAC)
Standing Conference on Road Use (SCRU)
Advisory Committee on the Appearance of Bridges and Associate Structures (ACABAS)
Antiquities Advisory Board
Sewage Treatment / Disposal and Environmental issues and mitigation measures
Advisory Council on the Environment (ACE)

Source: CEDD, 2006, p.1.17.

In fact, many of these policy areas have conducted strategic studies with approved recommendations forming the future development framework in Hong Kong. These study reports include:

(a) The Third Comprehensive Transport Study (CTS-3),
(b) Port Development Strategy Review (PDSR),
(c) Railway Development Strategy 2000 (RDS-2000) and Second Railway Development Study (RDS-2),
(d) Harbour Area Treatment Scheme (HATS),
(e) Hong Kong 2030: Planning Vision and Strategy, and
(f) Study on Sustainable Development for the 21st Century (SUSDEV 21).
(g) Study on Review of Metroplan and The Related Kowloon Density Study Review' (CEDD, 2006, p.1-37).

Although the strategic spatial plan may not have integrated the land use needs of these policy areas, the Hong Kong Planning Standards and Guidelines (HKPSG), however, are the basic planning standards for development projects outlining provision standards, location factors and site requirements of individual land uses. The HKPSG are not set in stone and local variations are allowed at the local level according to variations of socio-economic structure of the population, population density, location, and topography (op cit., 2006, p.1.18). Besides the general HKPSG, Table 2 below lists other specific documents that need to be compiled with in the launching public works.

Table 2: Detailed Project Planning and Design Standards

PWP projects
Project Administration Handbook for Civil Engneering Works
Project Management for the Public Works Programme - Technical Manual
Traffic, roads and highway structures
Structures Design Manual for Highways and Railways
Transport Planning & Design Manual
Hong Kong Planning Standards and Guidelines, Chapter 11, Section 7 – Use of Land Beneath
Flyovers and Footbridges
Highway projects
Highways Department Road Notes, Highways Department Guidance Notes, Pavement Design
Manual, Public Lighting Design Manual and, Highways Department Standard Drawings
Port works
Port Works Design Manual
CEDD Standard Drawings
Control of wave reflection in Victoria Harbour
Geotechnical works - A list of technical guidance documents used by the GEO, CEDD as defacto geotechnical standards is given in Technical Guidance Note No. 1 (TGN 1) and CEDD Standard Drawings
Waterworks
WSD Project Management Manual
WSD Civil Engineering Design Manual
WSD Project Administration Manual
Hong Kong Waterworks Standard Requirements

WSD Standard Drawings
WSD Technical Notes
WSD Departmental Instructions
A note on Unit Cost Ready Reckoner System
WSD Guidance Notes / Manual of Mainlaying Practice
Environmental protection
Environmental Protection Department (EPD) Technical Memorandum on Environmental Impact Assessment Process
EPD Professional Persons Environmental Consultative Committee Practice Notes (ProPECCPNs)
EIAO Guidance Notes
Greening
Hong Kong Planning Standards and Guidelines, Chapter 4, Section 2 – Greening
WBTC 25/92 - Allocation of Space for Urban Street Trees
Cyber manual for Greening as detailed in ETWB TCW 11/2005

So how does the public works programme proceed[1]?

Public Works Cycle

The Public Works Programme (PWP) is a list of public works project grouped under specific expenditure heads, which includes land acquisition, port and airport development, buildings, drainage, civil engineering, highways, new towns and urban area development, waterworks and housing. However, a need has to be established before any project could be included in the PWP. According to CEDD's Project Administration Handbook (2006, p.1-8), 'the need for a project may arise:

(a) to meet planning and development requirements,
(b) to improve existing facilities/services,
(c) to complete an existing development programme,
(d) to address issues raised in Policy Address and/or Policy Agenda, or
(e) to enhance the reliability of the existing service

In order to establish the need for a project, general consideration should be given to:

(a) the problem requiring action,
(b) solution options, including an assessment of relative merits and demerits,
(c) reasons for the choice of the preferred option vis-a-vis other possible solutions, and
(d) consequences of doing nothing.'

Figure 4 describes the project inception. In order to translate this need into a tangible project in the Public Works Programmes (PWP), the Policy Bureau needs to develop a Project Definition Statement (PDS). Then, the appropriate works department should prepare a Technical Feasibility Statement (TFS) 'to ascertain the viability, identify development constraints, formulate an implementation strategy, and prepare the project estimates' (CEDD, 2006, p.1-7). CEDD (2006, pp.1-9-10) further specifies that at 'the commencement of preliminary project planning and in the preparation of a PDS, the following requirements should be observed:

(a) the need for the project has been identified and justified,
(b) the proposed project will meet the need in full or in part,

[1] Unless stated otherwise, the following discussion is extracted from Ng and Lo, 2007, Chapter 3.

(c) the proposed project will not duplicate or be in conflict with any other existing or planned projects, and
(d) the proposed project is in line with approved policy and approved plans.

- Figure 4 -

Preliminary consideration in TFS should then be given to:
(a) Project Scope.
(b) Land Requirements.
(c) Development Constraints. For very major projects, sustainability assessment may be required.
(d) Environmental Considerations. The project department should identify environmentally sensitive areas and try to avoid impacts on the environment. The project department should, in consultation with the Director of Environmental Protection (DEP) where necessary, categorize the project as either a designated project or a non-designated project under the Environmental Impact Assessment Ordinance (EIAO) and undertake to carry out the subsequent assessment/review and/or mitigation measures as required by the DEP.
(e) Project Programme.
(f) Capital Cost Estimates. The capital cost estimate should be provided in the TFS.
(g) Legal Considerations. For a project involving reclamation proposal within the boundaries of the harbour, the requirements under JTC 1/2004 should be followed.'

It should be noted that the realisation of an executive-led government is realized throughout the planning of these projects as all government departments are consulted to ensure 'smooth coordination'. Besides the government, the client department would also consult other relevant bodies such as the district councils, etc. For mega-projects, the Environmental Protection Department and their comments on the project are necessarily part of the documentation of the TFS. If the TFS were approved by the Secretary for Environment, Transport and Works, then the project would be included as Category C of the PWP. However, this category gives no guarantee to funding support. This is where the mechanism of Resource Allocation System (RAS) which is designed to ensure the best use of resources in the planning, design and construction of these projects has to be brought in. The RAS is managed and coordinated by the Treasury Branch under the Financial Services and the Treasury Bureau. It provides for the planning of capital works expenditure on a six-year basis having regard to the Government's priority and the affordable level of expenditure. However, if a Category C project could not get into the Resource Allocation Exercise within three years, it would be deleted from the PWP.

Expenditure on public works project falls under the Capital Works Reserve Fund (CWRF) which is administered by the Financial Secretary for the purposes of the PWP. According to CEDD (2006, p.2-15), the 'CWRF was established on 20 January 1982 by Resolution of the Legislative Council for the purpose of financing the PWP and acquisition of land. On 15 May 1985, a third Resolution was passed by the Legislative Council as a consequence of the Land Annex to the Joint Declaration. The 1985 Resolution, which was subsequently amended and the latest amendment was on 6 January 1995, in relation to the funding of the PWP, sets out that:
(a) there be credited to the Fund such appropriations from the general revenue as may be approved by the Legislative Council,

(b) the Financial Secretary may expend from the Fund for the purposes of the PWP and for the acquisition of land, in accordance with such conditions, exceptions and limitations as may be specified by the Finance Committee,
(c) the Director of Accounting Services shall, under the authority of the funds warrant issued by the Financial Secretary, pay from the Fund such sums as may be required to meet the expenditure from the Fund,
(d) the Financial Secretary at his discretion may authorize investment in such a manner as he may determine, of any unexpended balance held in the Fund at any time, and
(e) the Financial Secretary may from time to time transfer from the Fund to general revenue any balance in the Fund which is not required for the purposes of the Fund.'

According to the Project Administration Handbook (CEDD, 2006, pp.2-18-19), each year, the Secretary for Financial Services and Treasury set out in a Circular Memorandum the procedures to be followed in the annual RAE. 'Bids for new projects to be started in the six-year RAS period are put forward by Directors of Bureaux (DoBs), who have authority to set relative priorities between bids from Departments under their purview. Once DoBs' works programmes for the relevant resource allocation period have been accepted, DoBs have authority to alter the timing or priority of projects in their programmes, provided that the estimated overall expenditure over the six-year forecast period is not exceeded, and subject to the ability of the works departments to accommodate the design and supervision requirements.' Table 3 below lists the normal procedures of the RAE:

Table 3: Normal Procedures in the RAE

May/June
FSTB to invite Works departments to update the cashflow requirement and programme schedule of all existing Cat A and B projects
June/July
FSTB to issue call circular for the year's RAE
Policy Bureaux to submit new bids for capital works projects including existing Cat B projects and new projects September
ETWB to advise on the capacity of the Works Departments to implement the projects under the RAE bids
Committee on Resource Allocation to decide on allocation provisions
October
FSTB to inform Policy Bureaux/departments of final results of the RAE

Source: CEDD, 2006, pp.2-18-19.

The Public Works Subcommittee (PWSC) of the Finance Committee (FC) of the Legislative Council acts as the advisory body to make recommendations to the FC on the approval of the CWRF. 'The terms of reference of the PWSC are:
(a) The upgrading of projects to or downgrading from Category A of the Public Works Programme;
(b) Changes to the scope and/or approved project estimates of projects currently in Category A of the PWP;
(c) The approval of new commitments for capital subvention works projects funded under CWRF Head 708; and
(d) Changes to the scope and/or approved project estimates of works projects approved for

funding under CWRF Head 708'.[2]

This power of the PWSC under the Finance Committee of the Legislative Council has become critical in recent years in face of a growing civil society. In the past when Legislative Councillor were appointed, LegCo's control of public finance was more apparent than real. However, these days when many projects have become centre of civic debates, the power of the Legislative Council's Finance Committee can mean a difficult battle for the government to take its projects off ground.

The Environment, Transport and Works Bureau (ETWB) is responsible for the delivery of public works projects. It also oversees, and has policy responsibility for the activities of the six Works Departments – Architectural Services Department, Civil Engineering and Development Department, Drainage Services Department, Electrical and Mechanical Services Department, Highways Department and Water Supplies Department (Figure 5) (HKSAR Government, 2006, Chapter 12, http://www.yearbook.gov.hk/2005/tc/12_02.htm).

- Figure 5 -

Table 4 below and Figure 3 illustrate the financial procedures and delivery process of the projects under the system.

Table 4: Financial Procedures

Before admission into Category C	Policy Bureau prepares a Project Definition Statement, Works Department assesses preliminary technical feasibility and prepares a Technical Feasibility Statement
Category C projects	Project will be admitted into Category C after the Technical Feasibility Statement is approved by ETWB. Works Department carries out preparatory work such as preliminary planning and inviting expressions of interest from consultants. Project stands ready for bidding for resources under Resource Allocation Exercise. It will be deliberated at the Committee on Resource Allocation (CoRA) having regard to available resources. Will be upgraded to Category B once approved.

[2] Legislative Council, http://www.legco.gov.hk/english/index.htm, accessed on 15 June 2007.

Category B projects	Works Department commences the detailed planning, investigation and detailed design. Projects should start statutory procedures such as Environmental Impact Assessment Ordinance, gazette under relevant statues for certain projects and open for public objections and authorization, such as the Roads (works, Use and Compensation) Ordinance, the Foreshore and Sea-bed (reclamations) Ordinance, the Railways Ordinance and the Water Pollution Control (Sewerage) Regulations, and land acquisition. Works Department should conduct public consultation with District Councils, major residential groups and other interested bodies before the date of gazettal. After finishing the statutory procedures, Works Department can submit a funding application to LegCo Public Works sub-committee and Finance Committee for approval of funds for the projects over $15 million and upgrade to Category A. For minor works projects below $15 million, funding can be sought from the CWRF block allocations. This kind of minor projects are Category D projects.
Category A projects	When the projects are upgraded to Category A, Works Department can apply for environmental permit for designated projects and draw up detailed project requirements for tendering.

Source: Ng and Lo, 2007, 3-6, modified from ETWB Technical Circular (Works) No.4/2006)

5. Build-Operate-Transfer (BOT)Projects[3]

The first BOT project in Hong Kong was the Cross-Harbour Tunnel linking Tsim Sha Tsui and Wanchai. It started operation in 1972 and its concession period was 30 years. The project has a very high rate of return and is a successful example of BOT development. The experience has encouraged the Government to use BOT in subsequent road tunnel projects, such as the Eastern Harbour Crossing, Tate's Cairn Tunnel, Western Harbour Crossing, Route 3 Country Park Section (Tam, 1999). Table 5 outlines the development processes involved in a road tunnel project whereas Figure 6 presents the structure of typical contractual arrangements of BOT projects in Hong Kong.

- Figure 6 -

Table 5: Development process of a BOT road tunnel project

1. Feasibility study	Carried out by the Government before adopting a BOT scheme, which incorporates engineering feasibility, financial analysis, environmental impact assessment and legal aspects.
2. Information	Once the Government decides to implement a BOT project, it will prepare an Information Booklet to provide

[3] Unless stated otherwise, the discussion is based on Ng and Lo, 2007, Chapter 4.

	detailed information for prospective tenderers.
3. Tender selection process (monitored by the ICAC	Invite tender → the Government offers pre-tender clarifications → Tender assessment panel forms → Negotiation between the Government and tenderers and the tender assessments are updated → Tenderers submit revised proposals → the Executive Committee endorses the selection of the preferred tenderer.
4. Project agreement	The final terms and conditions of the project agreement and the enabling Ordinance are met after further negotiations.
5. Quality control	An independent design checker and works checker are appointed by the franchisee to ensure the quality of design and construction.
6. Toll adjustment	A toll adjustment mechanism is initiated to maintain a low and stable toll regime.
7. Operation	The franchisee submits an operation procedure for the Government's approval. It should maintain all the facilities within the franchise area during the franchise period, and also submit an annual audit report. Finally, the franchisee should transfer all assets of the project to the Government at the end of the franchise period.

Source: Modified from Kumaraswamy & Zhang, 2001

As can be seen in Figure 7, the project enabling ordinance is instrumental in managing the franchisee during the concession period. During the 'build' period, the franchisee will make use of the Turnkey contract to design and construct and at the same time use engineer, design and works checkers to ensure the quality of construction work. During the operation phase, the operation and maintenance agreement is used to ensure the quality of service provision. Table 6 below explains in more detail these various measures.

- Figure 7 -

Table 6: Agreements used in BOT Projects

Name	Parties	Major Terms
Project Agreement Enabling Ordinance	▪ Project Agreement (Govt. vs. Franchisee) ▪ Ordinance (Govt.)	▪ **Length of concession period** ▪ **Structure of the franchise** ▪ **Financial scheme** ▪ **Financial guarantees** ▪ **Financial ceiling of development & usage costs** ▪ **Construction process** ▪ **Completion time of the construction**
Construction Agreement	▪ Franchisee vs. contractors or suppliers	▪ **Design of project/ Specification of raw materials** ▪ **Contract sum**

Name	Parties	Major Terms
		▪ **Schedule of rate**
Operation Agreement	▪ Franchisee vs. operator	▪ **Usage of the facility**
Stakeholders' agreement	▪ Sponsors vs. franchisee	▪ **Ratio of debt to equity** ▪ **Detailed plan for the distribution of the expected revenues in the operation stage**
Lender's agreement	▪ **Financiers vs. franchisee**	▪ **Rate of return**

Source: Chiu, 1998, pp.11-12.

6. Rail cum Property Development Model

The railway network in Hong Kong consists of two major railway systems, which are run by the MTR Corporation Limited (MTRC) and the Kowloon-Canton Railway Corporation (KCRC). The railway network has a total length of over 200 kilometers. The Mass Transit Railway (MTR) system started its operation in 1979 and has expanded to become a railway system with a total route length of 91 kilometers including the Kwun Tong, Tsuen Wan, Island, Tung Chung, Tseung Kwan O, Airport Express and Disneyland Resort Lines. Its average number of passengers in weekdays is about 2.4 million (excluding the Airport Express Line). The Kowloon-Canton Railway (KCR) system has operated since 1910 and was electrified and double-tracked by 1983. Together with the East Rail, West Rail, Ma On Shan Rail and Light Rail, the system has a total track length of 113 kilometers and its daily average number of passengers is about 1.5 million. The two railway systems play an important role in the public account for about 35 per cent of domestic public transport in Hong Kong (ETWB, 2006).

Besides railway operation and construction, both MTRC and KCRC are actively involved in the property business. The two railway companies have committed in railway related property development with the cooperation of developers by developing residential and commercial properties above stations and depots. So far, the MTRC and KCRC have already completed 31 property projects comprising residential estates and commercial developments. In MTRC's 2005 Annual Report, the growth strategy was achieved through extension of existing network, enhancement of income from non-fare and other businesses as well as creating opportunities for property development. The report further emphasizes that property development is the cornerstone of the "rail and property" business model of MTRC, "which aims to maximise value for shareholders by integrating property development with railway construction and through prudent weighing of risk and return" (MTRC 2005 Annual Report, p.5). In addition to maximizing profit, the railway operators undertake property development to generate income to fund improvements to the existing railway network and to secure a permanent and increasing ridership for the Corporation's railways (KCRC Annual Report 2005).

The development model of MTRC and KCRC has achieved wide international recognition as the "integrated rail-property development model", which "entails an integration of urban mass transit railway and high-density property development at the station areas' (Tang, Baldwin and Yeung, 2005, p.14). The high density population catchment areas and the profit from depot-related property development have supported the operation of the railway systems. These two factors help the railway operators, MTRC and KCRC, to achieve self-finance (i.e., to build and operate without direct government grants) (Barron, Ng & Kwok, 2001).

The integrated rail-property development model is shown in Figure 8. The railway operation can finance the construction of the railway by capturing the value through property development. Furthermore, property development can increase the population density of the land around the railway station to support the operation of the railway. The Government can also gain by capturing the land premium as a result of property development and hence it may not need to subsidise the operation of the railway. Finally, the society can achieve sustainable development as this kind of development model can achieve more efficient use of urban space, reduce noise and air pollution from road transport, improve accessibility and also the efficiency in transport and human activities (Tang, Chiang, Baldwin & Yeung, 2005).

- Figure 8 -

Figure 9 highlights the simplified development process of railway development and Figure 10 shows the institutional approach adopted by the MTRC. MTRC is central to the coordination of planning and development of the station sites. In the railway planning stage, the planning inputs will involve strategic studies of railway development, determination of railway alignment and stations, definition of development sites, preparation of Master Layout Plans and design scheme improvements. MTRC will work out the development details by negotiating and consulting with the government departments and the developers. Exclusive development rights of the station sites are granted to the MTRC and it is responsible for supervising the construction of the development. On the other hand, the institutional approach of KCRC, which is a public body, is different from MTRC since MTRC was privatised and listed in the Hong Kong Stock Exchange in 2000. As a public body, the KCRC acts as the agent for the Government in the development of the station sites, so it is operated under a different incentive and constraint structure from that of the MTRC[4] (Tang, Chiang, Baldwin & Yeung, 2005).

- Figures 9 & 10 -

The railway systems in Hong Kong do not rely on government grants to meet the construction and operation costs. The main reason is the property development around the station sites. The profit earned from the property development can contribute to the construction and maintenance costs of the railway, and the dense population of the development can enhance rider-ship and provide a steady source of recurrent income. According to a study in the financing of the MTRC, fares and other indirect funding such as property development rights, advertising, station rental and granting franchises for communication services within the railway contribute 80 and 20 per cent respectively for the operator generated funds of the MTRC (Barron, Ng & Kwok, 2001).

6. Concluding Remarks

If we review the history of public works and BOT, we can notice that before the 1990s, these matters were the prime domain of the public and private sectors and financial viability was always the most important consideration in planning decisions. Social and environmental costs did not seem to be on the radar then. Since the 1990s (some would say the 1980s), there has been rising civil awareness with for instance, green groups monitoring the environment and others keep scrutinizing eyes on the use of tax-payers' money and some even raise issues

[4] The Government reached an understanding with the MTRC and KCRC in April 2006 on the terms for merging the two railway systems. Further studies regarding the merger such as the human resources and fares are undertaken.

of social justice. We have seen campaigns against harbour reclamation, construction of a railway spur line that would destroy an established artificial wetland, etc. Though the legislation & administrative measures continue to facilitate the government's work, increasing pressure from different stakeholders who would like to have a say in these projects can be felt.

The Legislative Council though still not all elected by universal suffrage and generally not having the trust of the general public could still cause trouble because the Finance Committee is supposed to have the authority to control the approval of funding. Hong Kong also faces rising challenges by rapidly growing neighbouring Chinese cities which get things done overnight, thus causing serious environmental problems such as air pollution. Hong Kong needs to be connected with all these growth points to remain its vital role in the region. However, any major spatial restructuring to prepare Hong Kong for the new regional economic role would face challenges from the civil society and need to strike a healthy balance between "development" and "conservation", a sustainability issue that is the fundamental concern of our next paper.

Figure 1: Government Structure in Hong Kong

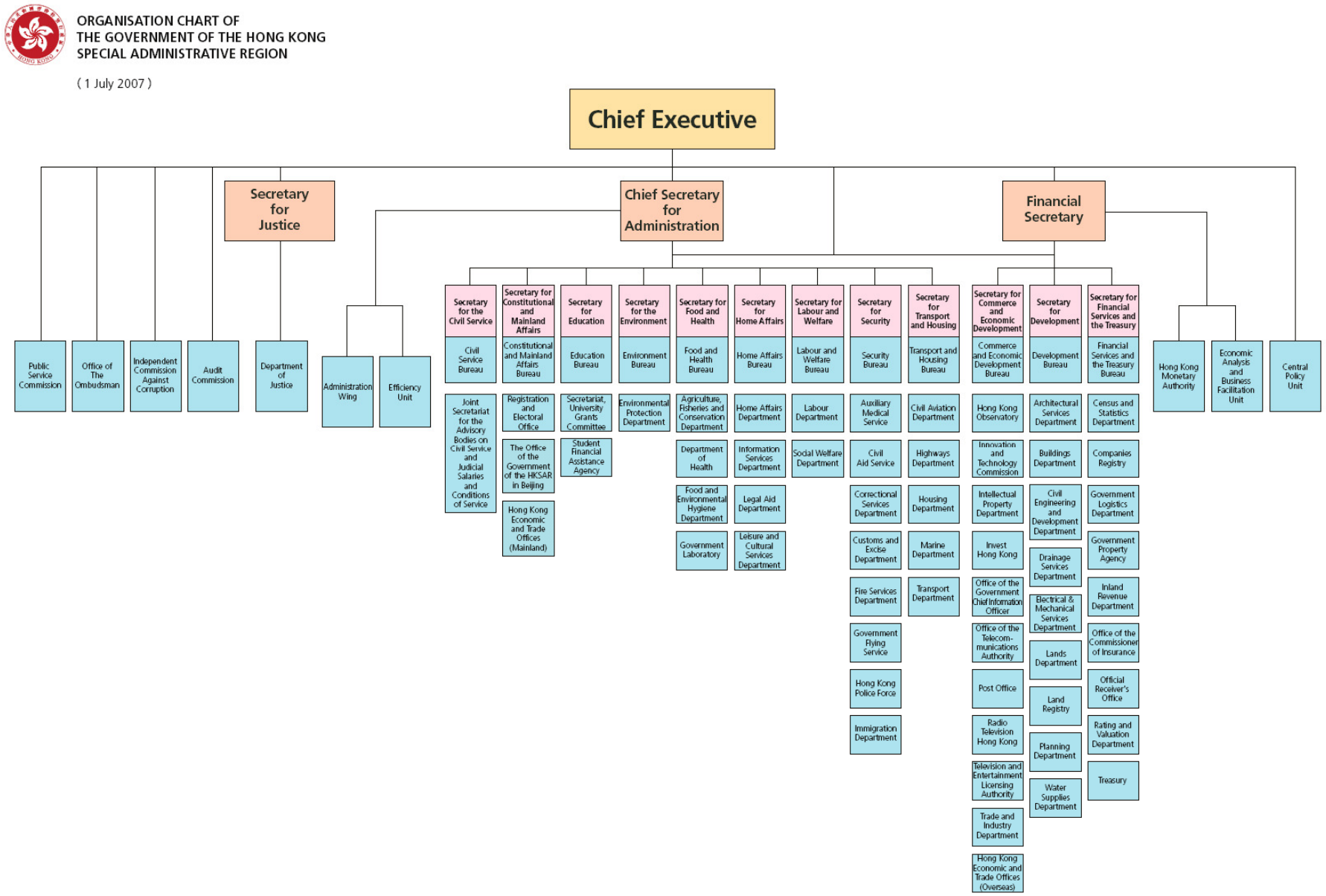
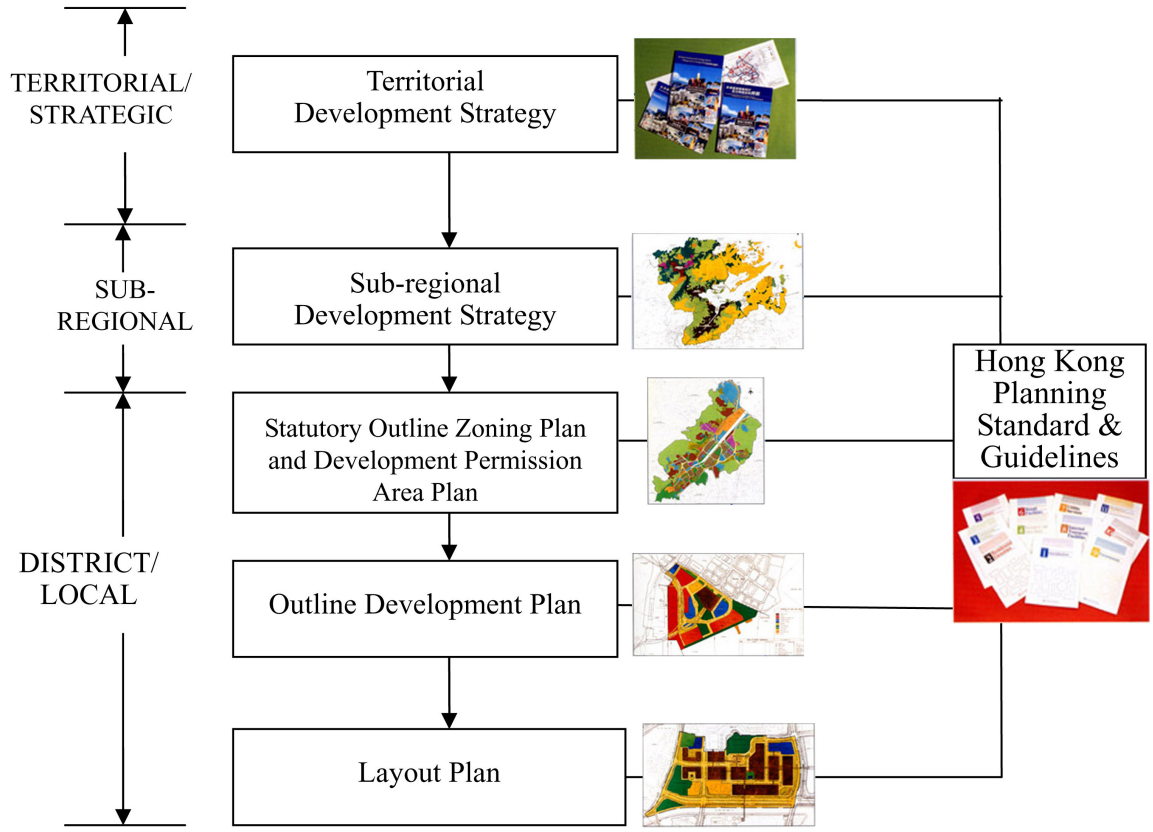
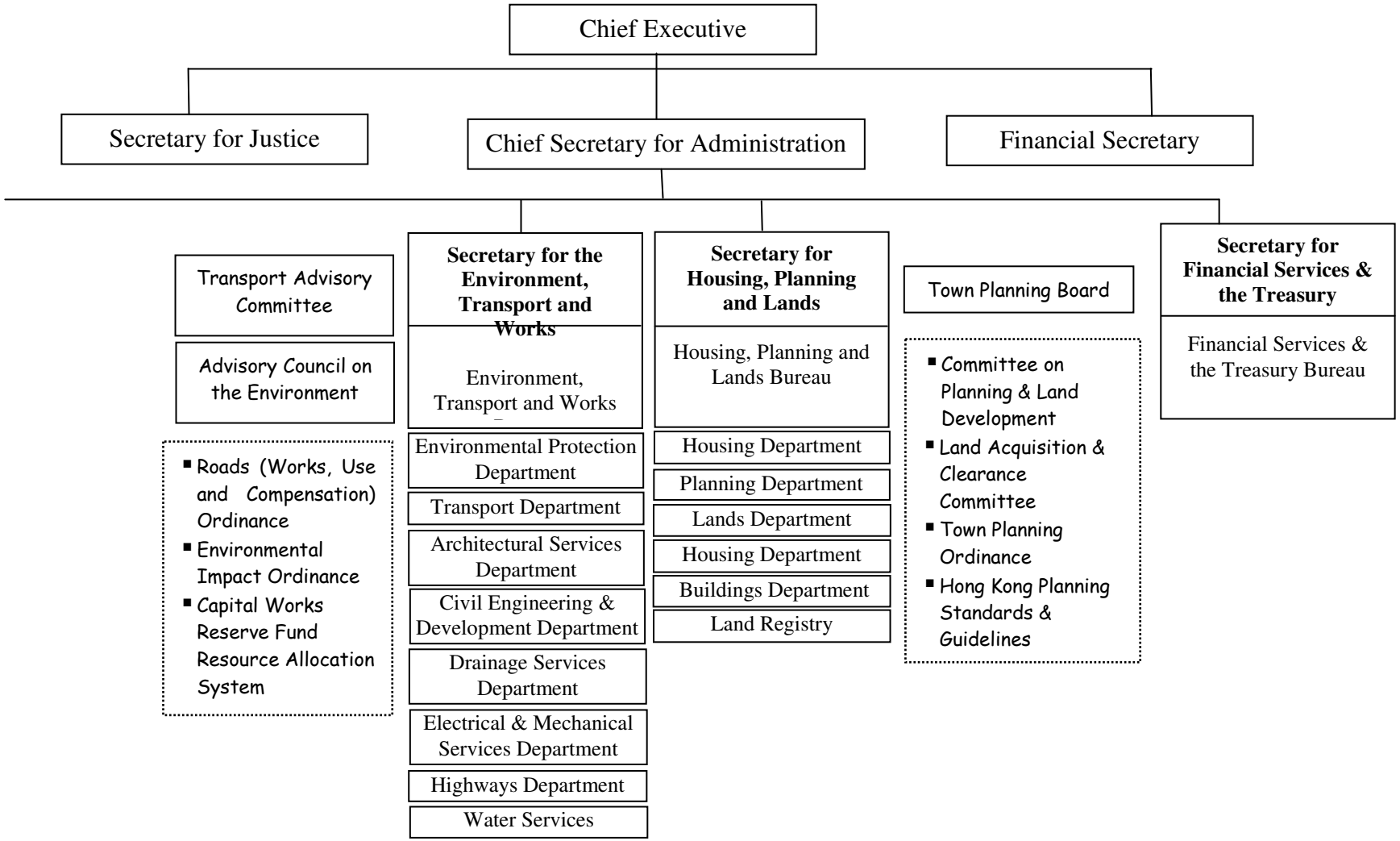


Figure 2: Hierarchy of Plans in Hong Kong



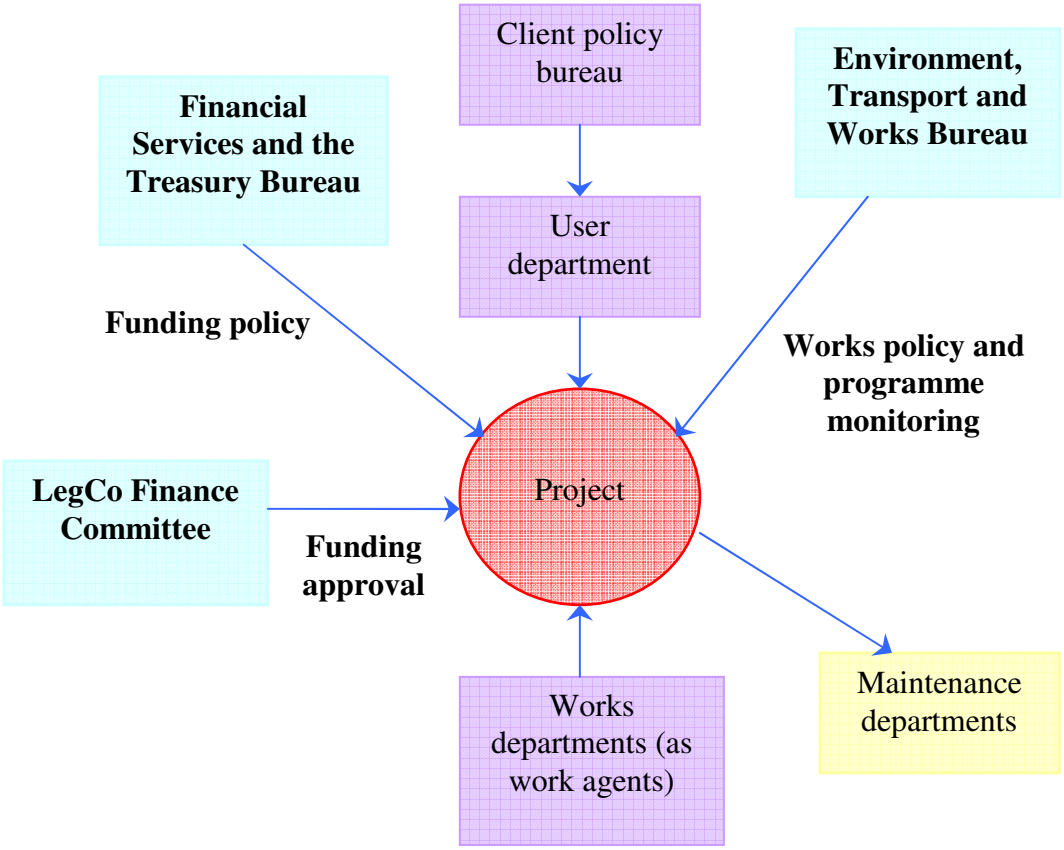
Source: Synthesized from Legislative Council Secretariat, 1997, p. 8 and Planning Department website, http://www.pland.gov.hk/press/publication/ar_06/english/about.htm, accessed on 12 January 2007.

Figure 3: Major Agencies involved in Planning and Development in Hong Kong



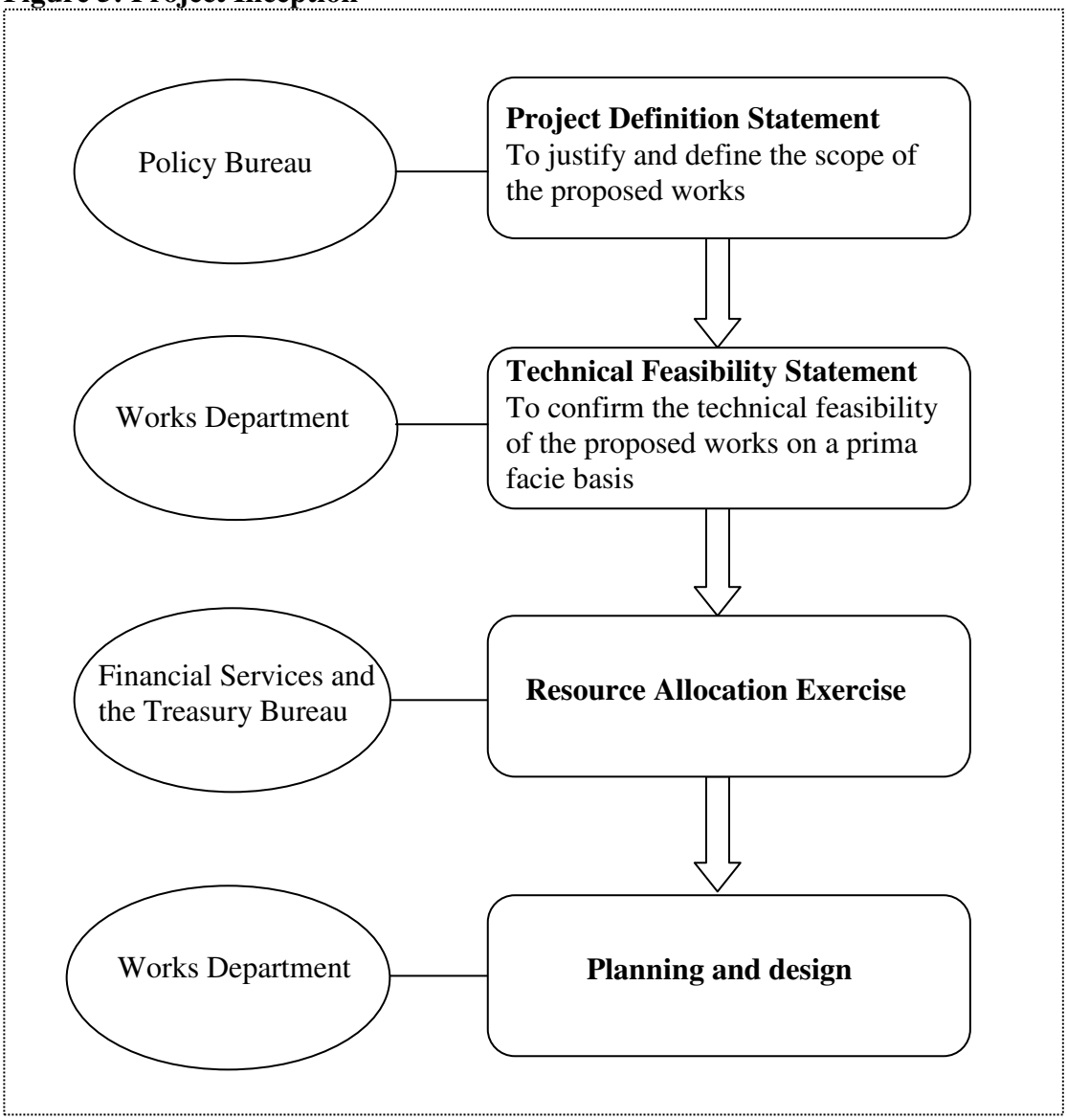
Source: Author.

Figure 4: Parties involved in the PWP



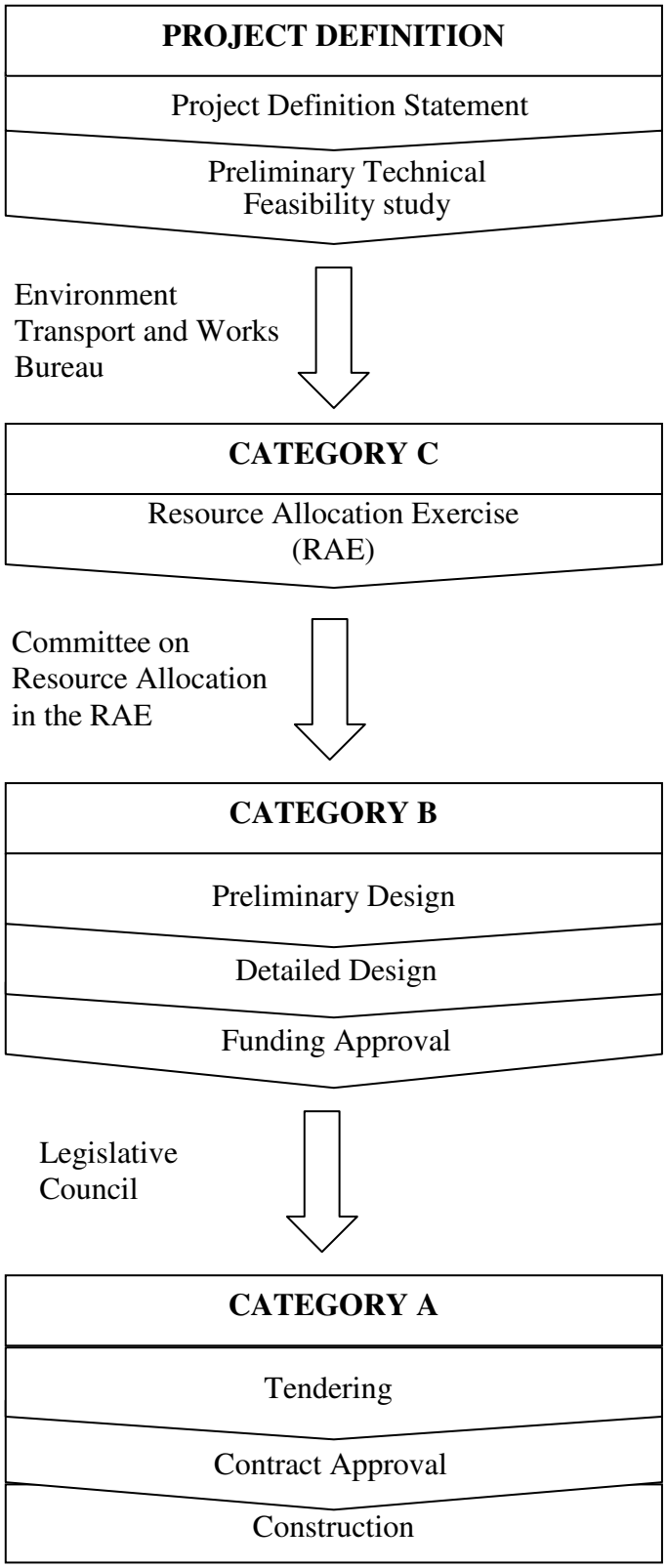
Source: ETWB, 2006 – Powerpoint presentation of MSc (Urban Planning) course, "Planning, Managing & Financing the Development Process

Figure 5: Project Inception



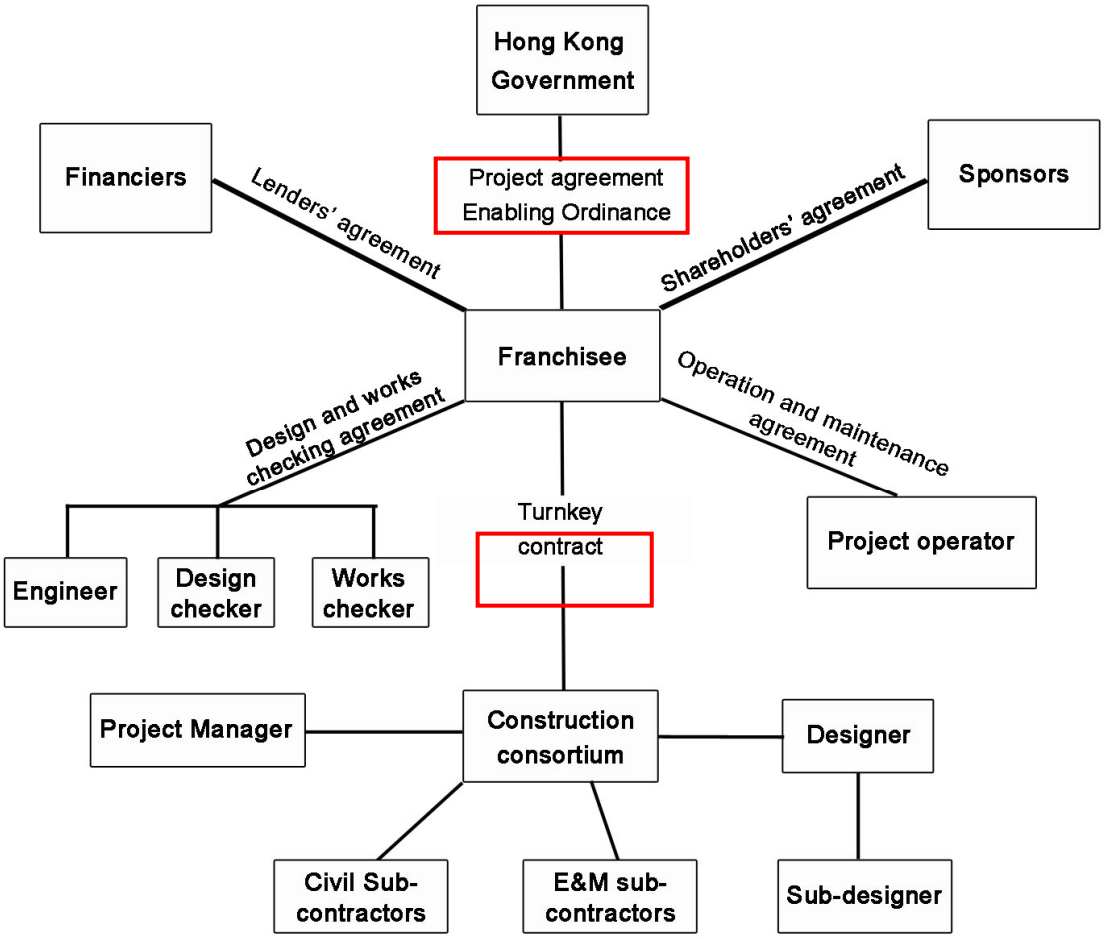
Source: Ng and Lo, 2007, p.3-3.

Figure 6: Project Delivery Process



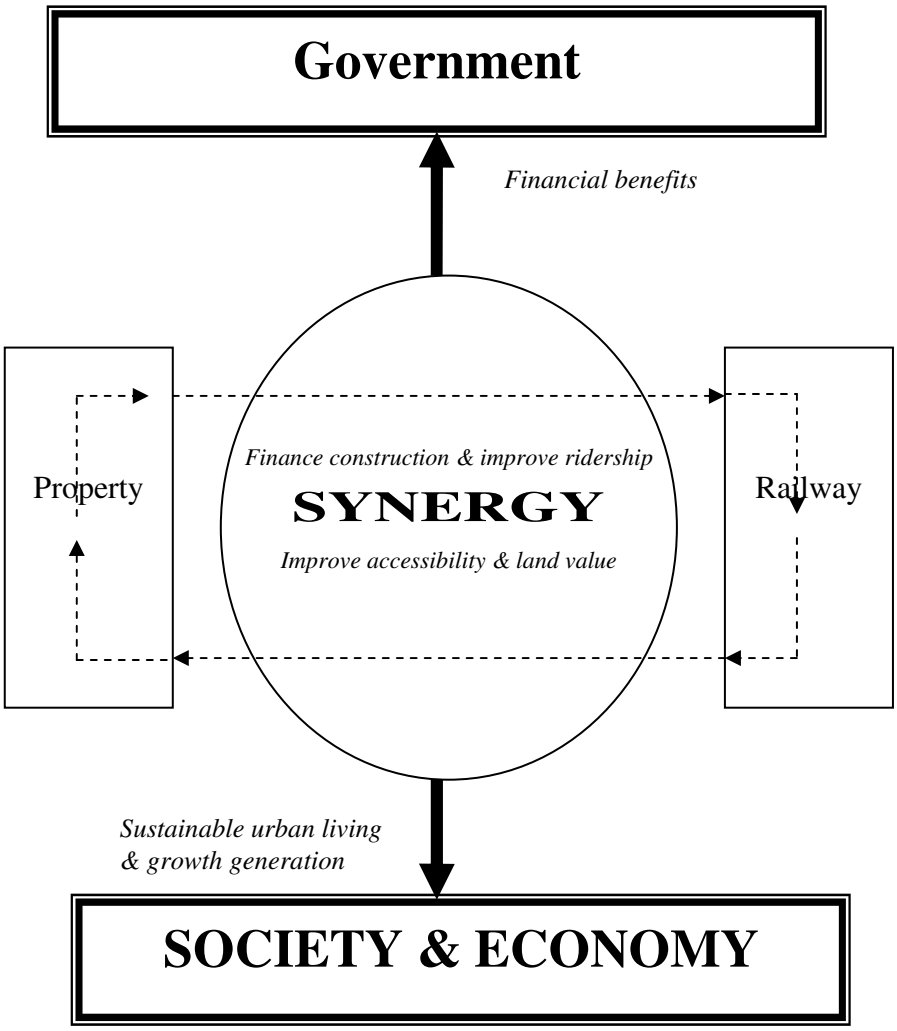
Source: Modified from ETWB Technical Circular (Works) No.4/2006).

Figure 7: Structure of a general BOT project contractual arrangement in Hong Kong



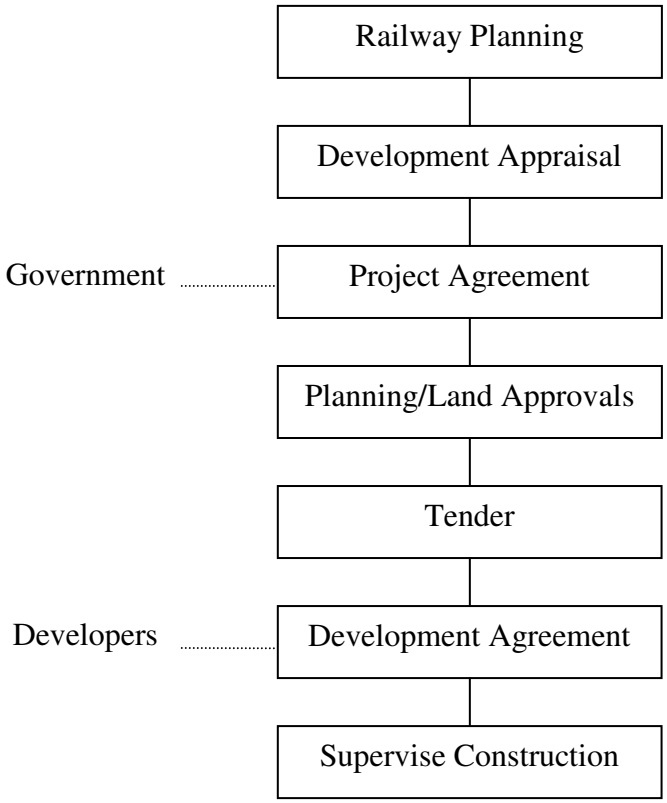
Source: Kumaraswamy & Zhang, 2001.

Figure 8: Synergy of Integrated Railway and Property Development Model



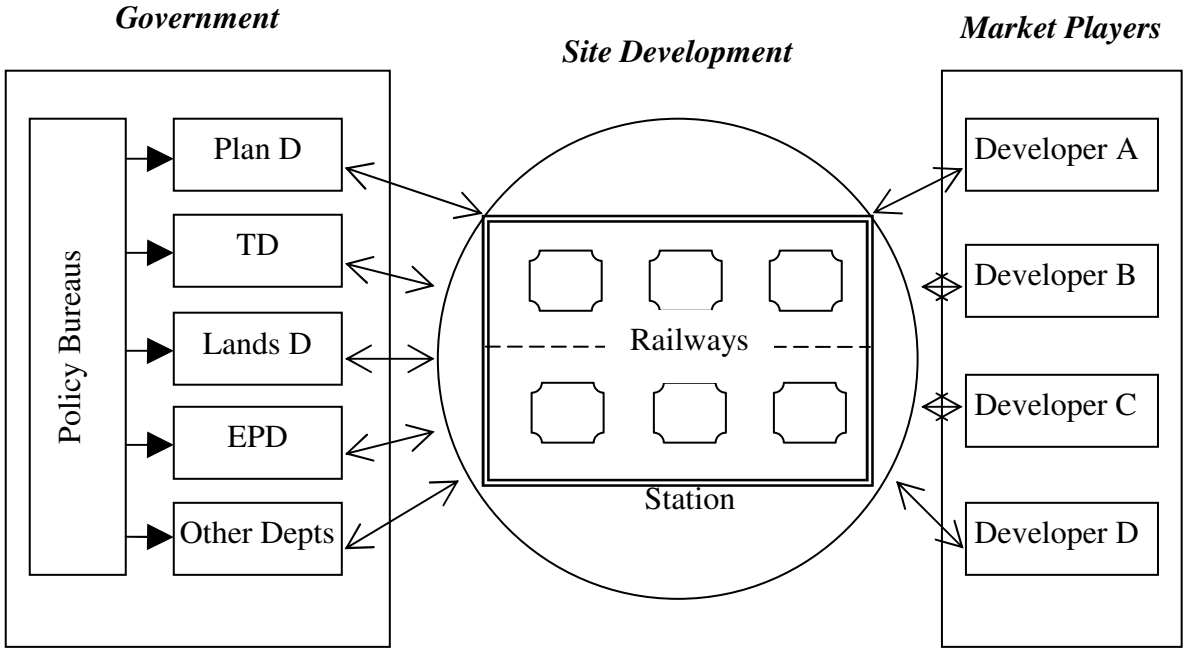
Source: Tang, Chiang, Baldwin & Yeung, 2005, p25

Figure 9: Simplified Development Process of Railway Development



Source: Authors

Figure 10: Institutional Models of MTRC



Source: Tang, Chiang, Baldwin & Yeung, 2005, p29

Bibliography

Barron, B., Ng, S..K.W. & Kwok, V.M.C. (2001), *Financing Mass Transit Railways: An International Survey.* Hong Kong: CUPEM, The University of Hong Kong.

Civil Engineering and Development Department, Hong Kong Special Administrative Region Government (2006), *Project Administration Handbook*, Hong Kong: Government Logistics Department.

Environment, Transport and Works Bureau (ETWB) (2000), *Railway Development Strategy.* Available at: http://www.hyd.gov.hk/eng/public/publications/rds/doc/rds.pdf, accessed on 7 Dec 2006.

ETWB Technical Circular (Works) No. 4/2006 - Delivery of Capital Works Projects. Available at: http://www.etwb.gov.hk/UtilManager/tc/C-2006-04-0-1.pdf, accessed on 12 Dec 2006.

HKSAR Government (2006), *Public Works and Development.* Available at: http://www.info.gov.hk/info/hkin/public_works.pdf, accessed on 11 Dec 2006.

HKSAR Government (2005), Hong Kong 2005. Available at: http://www.yearbook.gov.hk/2005/en/index.htm, accessed on 8 Jan 2007.

KCRC (2005), *Annual Report.* Hong Kong: KCRC.

MTRC (2005), *Annual Report.* Hong Kong: MTRC.

MTRC(2006), *Interim Report.* Hong Kong: MTRC.

Ng, M.K. and R. Lo (2007), *Planning, Managing and Financing the Development Process: A Course Handbook*, 100 pages, unpublished teaching materials.

Tam, C.M. (1999), "Build-operate-transfer model for infrastructure development in Asia: reasons for successes and failures", *International Journal of Project Management,* Vol. 17, No.6, pp.377-382.

Tang, B.S., Chiang, Y.H., Baldwin, A.N. & Yeung, S.C.W. (2005), "Integration of property and railway development: an institution economics analysis", *Hong Kong Surveyor,* Vol. 16, No.1, pp. 23-40.