

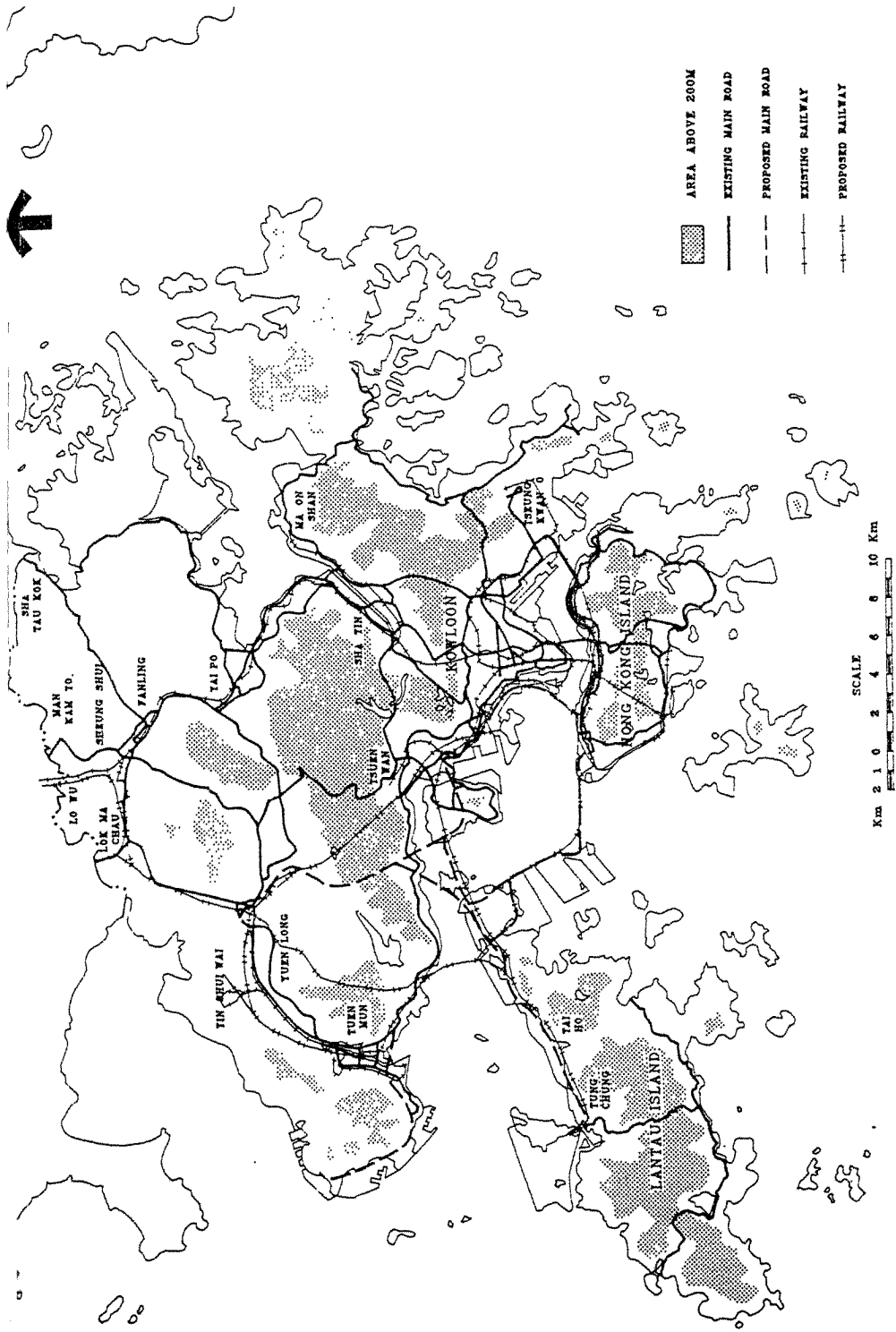
Planning Hong Kong For The 21st Century

A Preview of the Future Role of Hong Kong

edited by
Anthony Gar-On Yeh



Centre of Urban Planning and Environmental Management
University of Hong Kong



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A Preview of the Future Role of Hong Kong

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Contents

	<i>Page</i>
List of Contributors	viii
List of Figures	xi
List of Tables	xiii
Preface	xv
1. Planning of Hong Kong in the Pearl River Delta Region Context <i>A.G. EASON</i>	3
2. Pearl River Delta Development in the World Perspective <i>Aprodicio A LAQUIAN</i>	11
The Wider Pearl River Delta Region	
3. Guangdong Development Scenarios <i>J. FIGUEIRAS</i>	39
4. Building Guangzhou into a Modernized International Metropolis <i>DAI Feng</i>	49
5. Planning of Shenzhen in the Pearl River Delta Context <i>SUN Huasheng</i>	61
6. The Development and Roles of Zhuhai <i>GAO Zhaohe</i>	77
7. Planning of Macau in the Pearl River Delta Context <i>José NOBRE</i>	87
Hong Kong's Territorial Development Strategy (TDS)	
8. Hong Kong's Territorial Development Strategy – A Review at the Threshold <i>E.G. PRYOR</i>	113

Hong Kong's Hub Functions and Land Use Strategies

9.	Hong Kong's Hub Functions <i>Yue-man YEUNG</i>	143
10.	Commercial and Industrial Land Strategy <i>Edward HO</i>	163
11.	Agriculture and Rural Land Use Strategy <i>LAM Kin Che</i>	169
12.	Recreation and Tourism <i>Kent HAYDEN-SADLER</i>	179
13.	Conservation and Environment <i>Gordon T.L. NG</i>	189

Transport and Infrastructure Strategies

14.	Roads <i>Fred N. BROWN</i>	197
15.	The Role of Rail <i>Kevin HYDE</i>	211
16.	Hong Kong's Port in the Pearl River Delta Region <i>Benjamin P. WONG</i>	219
17.	Hong Kong's Airport in the Pearl River Delta <i>J.C. SEALE</i>	231
18.	Planning Strategy for Supplying Electricity to Hong Kong for the 21st Century <i>W.N. AU</i>	235
19.	Telecommunications <i>Charles K. KAO</i>	247
20.	Other Infrastructures: Water Supplies, Sewerage, Drainage <i>M.J. MATTHEWS</i>	251

Strategic Planning Issues

21.	Software that Keeps Hong Kong Ticking – People and Institutions <i>Anthony NEOH</i>	259
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22.	Is Hong Kong's Development Sustainable? <i>Peter HILLS</i>	263
23.	The Socio-Politics of Community Participation in Territorial Planning – The Challenge of Hong Kong's Governance Towards the 21st Century <i>LAI On-Kwok</i>	275
24.	Population Projections <i>John BACON-SHONE</i>	283
25.	Direction of Development – Metro or New Territories <i>Winston Ka Sun CHU</i>	291
26.	Planning of Hong Kong's Border Area <i>Anthony Gar-On YEH</i>	303
	Appendix 1 Conference Steering and Organising Committees	329

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List of Figures

	Page	
Figure 2.1	Transborder Regions and Growth Triangles in Asia	13
Figure 2.2	Territorial Development Strategy Review in the Regional Context	20
Figure 2.3	Annual Loss of Cultivated Land for Zhujiang Delta, 1980-90	33
Figure 3.1	Option Cluster A	47
Figure 5.1	Existing City Belt with Surrounding Economic Corridors	64
Figure 5.2	Regional Arrangement of Yantian Seaport	68
Figure 5.3	The Proposal of Western and Eastern Passages	71
Figure 8.1	Simplified TDS Review Process	115
Figure 8.2	Land and Marine Conservation Areas	120
Figure 8.3	Physical Model for Testing Hydraulic Impacts of Harbour Reclamations	121
Figure 8.4	Potential Strategic Growth Areas	122
Figure 9.1	Pattern of Flight Time and Surrounding Countries from Hong Kong	145
Figure 9.2	Air Passenger Movements between World Cities in Pacific Asia, 1990	147
Figure 9.3	Container Movements between Countries in Pacific Asia, 1983	149
Figure 9.4	Telecommunications Movements between Countries in Pacific Asia, 1988	154
Figure 14.1	Strategic Highway Network Development	202
Figure 14.2	Sketch of Planned Expressways in Guangdong Province	204
Figure 14.3	Major Road System in Shenzhen	205
Figure 14.4	Supply-Demand Gap: China	207
Figure 15.1	Importance of Railways to China	212
Figure 15.2	Regional Transport Infrastructure in the Past	214
Figure 15.3	Regional Transport Infrastructure Today	215

List of Figures

Figure 15.4	Regional Transport Infrastructure in the Future	216
Figure 15.5	Western Corridor Railway	217
Figure 18.1	Consumer Price Index vs Electricity Price	236
Figure 18.2	China Light & Power's Generating Capacity by 2001	238
Figure 18.3	Natural Gas Supply to Hong Kong	240
Figure 18.4	Forecast Fuel Mix for China Light & Power System	240
Figure 18.5	400 kV Transmission System – 1994	243
Figure 18.6	Major Transmission Developments, 1994-2000	243
Figure 20.1	Pearl River Delta: Water Supply	252
Figure 20.2	Pearl River Delta: Piped Gas Supplies	255
Figure 24.1	Population in 1967-1993	284
Figure 24.2	Population Growth Rates, 1967-1993	284
Figure 24.3	Fertility Rates, 1967-1991	285
Figure 24.4	Birth, Fertility and Death Rates for Hong Kong, 1967-1993	285
Figure 24.5	The Age of Females at Marriage and First Birth for Hong Kong, 1967-1991	286
Figure 24.6	Error Components	288
Figure 24.7	Population Projections and OPS Projections	289
Figure 25.1	Reclamation in the Victoria Harbour	292
Figure 26.1	Natural Increase and Net Migration, 1946-1994	306
Figure 26.2	Cross Border Passengers	312
Figure 26.3	Cross Border Vehicles	313
Figure 26.4	Existing and Proposed Cross-Border Transport Links	317

List of Tables

	Page	
Table 3.1	The Four Most Probable Scenarios	44
Table 3.2	Alternative Option Clusters for TDS	45
Table 5.1	Economic Indices of Shenzhen in 1994	65
Table 5.2	Rates of Increase (%) of Main Economic Indices (Shenzhen and Shanghai)	66
Table 5.3	The Forecast of Main Economic Indices of Shenzhen	69
Table 5.4	The Forecast of Population Size in Shenzhen	69
Table 8.1	Estimated Population Capacity of Strategic Growth Areas	123
Table 8.2	Estimated Quanta of Population and Jobs for which New Strategic Growth Areas will be Required	124
Table 8.3	Estimated Additional Land Required for Major Urban Uses	125
Table 8.4	Forecasts of Land Needs for Port Facilities	125
Table 8.5	Broad Distribution of Population in Base Growth and Strategic Growth Areas by 2011 for Scenarios A and B	128
Table 8.6	Broad Distribution of Employment in Base Growth and Strategic Growth Areas by 2011 for Scenarios A and B	128
Table 8.7	Percentage Share of Population, Jobs and Major Land Uses by Sub-regions by 2011 for Scenarios A and B	129
Table 9.1	Air Distances Between Pacific Asian Cities	146
Table 9.2	World Air Traffic Statistics, 1993	148
Table 9.3	Hong Kong's Hub Functions, 1970-1993	150
Table 9.4	International Conventions by Major Cities	158
Table 9.5	Changing Foreign Populations in Hong Kong, 1980-82	159
Table 13.1	Major Environmental Infrastructure and Facilities	192
Table 16.1	Port of Hong Kong – Number of Ship Calls	220
Table 16.2	List of Ports in the Pearl River Delta	221
Table 16.3	List of Shipping Operators in the Pearl River Delta	223
Table 16.4	Number of Containers in 1994 from Major Ports in the Pearl River Delta to Hong Kong (rough estimates)	224

List of Tables

Table 16.5	Estimated River Trade Cargo (Tonnes) Analysed by Commodity Group for 1994	226
Table 16.6	Estimated River Trade Cargo (Tonnes) Analysed by Cargo Type for 1994	227
Table 16.7	Estimated River Trade Cargo (Tonnes) Analysed by Place of Loading/Discharge for 1994	228
Table 16.8	Estimated River Trade Cargo Throughput in Future Years	229
Table 20.1	Water Supply: Supply and Demand	252
Table 26.1	Outward Processing of Hong Kong in China	310
Table 26.2	Distribution of Cross Border Passenger Trips	314

Preface

This monograph originated from the *Conference on Planning Hong Kong for the 21st Century* that was jointly organized by the Hong Kong Institute of Planners, the Centre of Urban Planning and Environmental Management, University of Hong Kong, and the Department of Architecture, Chinese University of Hong Kong on 12-13 April 1995 at the Hong Kong Convention and Exhibition Centre. The Conference was to provide a forum to discuss the many issues related to the future development strategy of Hong Kong for the 21st century.

Since the 1980's, Hong Kong's economy has become increasingly intertwined with that in South China, particularly the Pearl River Delta (PRD) region. This economic integration is expected to further accelerate as we move towards the 21st Century, as Hong Kong becomes a Special Administrative Region of China and the whole PRD Region becomes a booming megalopolis. The planning of Hong Kong cannot therefore be inward looking any more. It has to look beyond the city's territorial limits. The same applies to other cities in the PRD Region. As the region becomes one economic entity, it is necessary for all cities in the region to take note of each other's development plans so as to maximise benefits through co-ordination. The many development problems arising from rapid economic growth – from traffic congestion to deteriorating environmental quality – have also to be addressed, many of which cannot be solved by any one individual city alone, but by all concerned.

Within Hong Kong there is a growing debate relating to the future roles of Hong Kong and the development path it should take in the PRD context. Many emphasize the need to maintain Hong Kong's hub functions and see that as a pre-requisite of Hong Kong's continued stability and prosperity. On the other hand, there are also many who point to the various environmental costs that come with rapid economic growth and emphasise that development must be environmentally sustainable. Both sides are of course right. The question is one of balance.

This monograph is a collection of the available papers that were presented in the conference. They represent the views of the major parties in

Preface

the region and Hong Kong who will affect the future development of Hong Kong into the 21st century. In the papers, the authors share their expertise and visions on how to further develop Hong Kong to meet the challenges of retaining and expanding its pre-eminent role as a major service and financial centre in South China and an important regional hub in the Asia Pacific region. Besides directing our attention to the many development issues which we may not be able to find solutions immediately, they also inspire us to think about possible options to respond to these issues more quickly and flexibly.

We would like to thank the editorial assistance of Miss Vivien Wong in preparing this monograph.

INTRODUCTION

1

Planning of Hong Kong in the Pearl River Delta Region Context

A.G. EASON

STRATEGIC PLANNING AND THE REVIEW OF TERRITORIAL DEVELOPMENT STRATEGY

While it seems to have become more fashionable in recent years to talk about planning, in particular physical land use planning, for Hong Kong in the 21st Century, we should not forget that strategic planning is nothing new in the well established planning system of Hong Kong. Efforts to provide a broad framework to guide the future land use development and provision of key infrastructure in Hong Kong have, indeed, been on-going – they include Abercrombie’s Report produced right after the Second World War; the Colony Outline Plan of the 1960’s; and the Hong Kong Outline Plan of the 1970’s, which took particular account of the long-term housing objectives and the related New Towns Development Programme. Further work led to the formulation in 1984 of the first Territorial Development Strategy (TDS), which also was largely “housing led”. That strategy was later reviewed in 1986 to take account of demographic changes.

In 1987, it was realised that economic development in both China and Hong Kong deserved a comprehensive appraisal of our future needs for port and airport facilities to underpin the role of the territory as an entrepot, as an international business/finance centre and as a major tourist destination. This culminated in the formulation of the Port and Airport Development Strategy (PADS) and its acceptance by Government in October 1989 as a framework for investment in new key economic infrastructure. In parallel, work was undertaken to produce Metroplan to provide a planning framework for restructuring the city, which was released in September 1991.

Since the completion of these studies, a lot of changes have taken place in and around Hong Kong. The Pearl River Delta (PRD) region has become

an important outward processing area for Hong Kong's industries. In return, Hong Kong serves as a major trading outlet, and a primary channel for, and source of, investment for the region. In the context of continuing rapid economic growth in the PRD and other parts of South China and the changing roles of Hong Kong, there is a need to take another look at the possible long-term development options and to review our strategic development framework. Consequently, work on the current TDS review round was initiated in late 1990.

The primary goal of the TDSR is to "*establish a broad, long-term land use-transport-environmental planning framework within which the necessary land and infrastructure can be provided, having regard to resource availability, to enable Hong Kong to continue to grow as a regional and international city and become a better place in which to live and work*". The time horizon for the current review is the year 2011.

As I mentioned earlier, Hong Kong's recent economic growth is very much related to the astonishingly rapid economic development of South China since the adoption of the "Open Door" policy in 1978. Hence, apart from satisfying the territory's own needs, the current TDSR has to take account of likely future growth paths in South China as a whole. In order to gain a better understanding of Hong Kong's economic catchment area and its regional context, a consultancy study was commissioned to examine past, present and potential development trends in the Guangdong Province using various source data.

THE REGIONAL CONTEXT

Economic growth in Guangdong, and especially the PRD (including the Shenzhen and Zhuhai Special Economic Zones), has been the flagship of China's "Open Door" policy since 1978. As an illustration, in 1992 Guangdong generated 10% of the national total of gross industrial output, was second in terms of industrial ranking (after Jiangsu), handled 21% of China's exports by value, maintained 13% GDP growth (representing 9% of the national total), and accounted for about one third of the national total of foreign funded enterprises. This growth has been achieved to a large degree through substantial investment by Hong Kong entrepreneurs who accounted for about two-thirds of the total realised foreign direct investment in the province over the period from 1979 to 1992. About three million workers in Guangdong are now directly or indirectly employed in Hong Kong funded companies.

Initial development in the Shenzhen and Zhuhai Special Economic Zones

was generally well regulated within the framework of comprehensive development plans. With the extension of more liberal economic development policies throughout the PRD, there has been a proliferation of development throughout the region, especially along the east bank of the Pearl River, creating an almost continuous corridor of urban development from Shenzhen to Guangzhou.

The comprehensive provision of certain key utility facilities and infrastructural networks has generally lagged behind the demands generated by such growth, especially in respect of electric power supplies, sewage collection and disposal services, and trunk roads and railways. This is despite substantial funding being channelled in recent years towards the upgrading and extension of such facilities.

Given the export/import dependency of many manufacturing industries in the region and also the desire for improved external air services, various authorities in the PRD have promulgated major plans for the development of port and airport facilities. Notwithstanding, there remains a heavy dependence on such facilities in Hong Kong, especially in respect of our container terminals and mid-stream buoys which now predominantly handle re-exports for China. That, in turn, has placed immense pressure on our cross-border road and rail links, on facilities to handle rapidly growing number of Pearl River vessels, and on the provision of suitable sites for the storage of containers and other trade-related commodities.

Rapid, large-scale, seemingly random development in the PRD has created increasingly severe and widespread environmental/land use problems especially in respect of pollution of river systems and marine waters, degradation of air quality from vehicle exhaust fumes and large-scale land formation works, loss of fertile farmland, despoliation of the countryside, blockage of lowland drainage systems with recurrent flooding and damage to ecologically sensitive areas. Some of these problems have also had an impact on Hong Kong.

It is clear that, assuming a continuance of China's "Open Door" policy to cope with immense demographic pressures and related economic development needs, Guangdong in general and the PRD in particular are set on a long-term path of industrial-led urbanisation. There is the prospect that by 2001 the population of Guangdong Province could be as high as almost 80 million as against 63 million in 1990. The population of the PRD could also increase from 23 million in 1990 to over 33 million in 2001. By 2011, the totals for the province and the PRD could be up to 94 and 42 million respectively.

The increasing economic links and the continuing urban growth within the PRD region are expected to have significant strategic implications on

Hong Kong's long-term physical development. As we move from the 20th to the 21st century amid such rapid development, we will need a new vision of the role Hong Kong should play to keep pace with changes in China and to sustain our own prosperity and stability. We will also need to determine the functions the territory can most effectively perform.

HONG KONG'S ROLES

Our current TDSR has presented some views on what primary economic roles Hong Kong may best fulfil in such a regional context. They include a global and regional financial centre, a trading centre for South China, a regional transport hub for South China, a centre for technical and professional expertise, a regional telecommunications and media centre, a regional base for industrial services and hi-tech industry and a centre for tourism and culture. The following sections delineate the aspects relating to Hong Kong's roles as a global and regional financial centre; a trading entrepot for South China and a regional transport hub.

Global and Regional Financial Centre

In the past twenty years, Hong Kong's financial sector has expanded tremendously, with a large increase in the number of merchant banks, financial companies and non-deposit taking financial institutions, many of international standing. Hong Kong's financial markets – the stock market, foreign exchange market, money markets and commodity markets – have also expanded rapidly.

We can expect Hong Kong's role as a global and regional finance centre for South China, especially the PRD, to be further strengthened. Hong Kong's comparative advantages over neighbouring cities in the PRD include its strategic location, a proven track record, an open regulatory business environment, wide use of the English language for conducting business, freedom of capital movement, a skilled and adaptable labour force, a liberal entrepreneurial climate, and the provision of efficient physical infrastructure. With rapid economic progress in China, it is natural that there should also be further growth of major business centres in the country. However, they are unlikely to replace Hong Kong for a long time, constrained as it were by limitations in such areas as well-educated labour force and facility of business travel abroad, among others. Hong Kong has also a particular role to serve as a key financial conduit, intermediary and entrepot for Chinese business communities throughout Asia and increasingly, the rest of the world.

Trading Entrepot for South China

Accompanying the rapid growth of the financial sector has also been strong growth in various business activities in Hong Kong – such as legal, accounting, data processing, market research, design, and other technical, professional and managerial consulting business services. Based on its strategic location, particularly as a springboard to South China, and excellent external communication links, Hong Kong has become a major regional business centre for the Asia Pacific region, as revealed by the growing number of regional headquarters of overseas companies established in Hong Kong in recent years.

Since the launching of the “Open Door” Policy in China in the late 1970’s, Hong Kong’s role as an entrepot for China has been renewed. The rapid increase in re-exports during the past 15 years has been accompanied by growth on the transportation sector, warehousing, processing, import/export trades, and the related business services such as insurance, finance, marketing, and legal services. Hong Kong is now the world’s biggest container port with a total throughput of 11.1 million TEUs in 1994. Its port also handled some 141 million tons of cargo in the same year, of which about 40% were related to re-exports.

Hong Kong’s future prospects as an entrepot trading centre depend largely on the future direction of China trade. As channels of direct trade with China have expanded in recent years, one might expect the need for intermediation services through Hong Kong to decline. This has, however, not yet happened. With the decentralisation of China’s international trade system, trading with China has actually become increasingly complicated. Instead of the original vertically organised system dominated by a few trading corporations to serve as the contact points for foreigners, the system has decentralised so that well over 1000 trading corporations exist today. The demand for intermediation is therefore still great and most of this demand has been channelled through Hong Kong because of its historical accumulation of trading skills and global contacts. The Chinese city most likely to rival Hong Kong in international trade in the future is Shanghai. However, no undue competition is anticipated as Shanghai is the entrepot for the Yangtze River region whereas Hong Kong’s primary partner is South China.

Regional Transport Hub

In terms of Hong Kong’s role as a regional transport hub, we can look at it from the points of view of both the airport and the port. Let us look at Hong Kong’s role as a hub airport for South China first.

Hong Kong's air traffic has been growing at a very high speed, with an average growth rate of 10.3% in the past 10 years. In 1994, the Hong Kong International Airport at Kai Tak handled over 25 million passengers and more than 1.29 million tonnes of cargo. It is the world's third busiest international airport in terms of passengers and second in terms of cargo throughput.

The significant growth in air traffic not only brings in business opportunities for firms directly involved in the air transport business (such as airlines, caterers, cargo forwarding firms), it is also linked to the rapid growth in tourism and business travel which plays an important role in the development of Hong Kong's economy. It is therefore important for the new airport at Chek Lap Kok to be completed in a timely fashion. When the first runway, with a capacity of about 34 million passengers and 3 million tonnes of cargo, is commissioned, it will be connected to the Metro area by a high speed expressway and a mass transit railway. In due course, with the addition of a second runway, the handling capacity will be in the order of 87 million passengers and 9 million tonnes of cargo a year.

The question has been raised as to whether the capacity of Hong Kong's new airport at Chek Lap Kok will be fully taken up given that there are and will be new major airports at Shenzhen, Guangzhou, Zhuhai and Macau. The answer is that there is a clear need for Hong Kong's new airport not only because of its contribution to the local economy but also because of its hub function for South China, based upon both its capacity and aviation management skills. The scale of Hong Kong's airport operations is considerably greater than any of China's existing or planned new airports. In 1991, the total civil aviation passenger throughput for China as a whole was 21.8 million, which was not much higher than Hong Kong's 19.2 million for that year. Considering China's rapid air traffic growth rate (averaging some 20% per annum in recent years) and the very significant growth potential in the PRD, the region's new airports will have ample business to deal with in the coming years.

What about Hong Kong's role as hub port for South China? The large increase in trade arising from the rapid economic development in China and the restructuring of Hong Kong's industry through the relocation of labour-intensive manufacturing activities to the PRD and other parts of Guangdong has created new patterns of cargo movement. Goods are imported into Hong Kong and then re-exported to China for processing and consumption. Conversely, goods manufactured in the PRD and other parts of Guangdong are exported to Hong Kong for onward shipment to North American and European markets through our port. Hong Kong currently

handles about 90% Guangdong's exports. Its re-exports to China are nearly four times its domestic exports to China in value terms.

Despite the rapid development of port facilities in various parts of South China, Hong Kong's position as the premier hub port for the region is expected to remain for some considerable time. Port cargo forecasts prepared in 1993 estimate that Hong Kong's total container throughput would increase from about 9 million TEUs in 1993 to 20.2 million TEUs in 2001 and 31.8 million TEUs in 2011. This represents a projected annual growth rate of 10.9% and 4.6% respectively during the two planning periods. A recent survey of shipping liners carried out as part of the 1993/94 Port Development Strategy Review also indicated that no firms were planning a major shift of services away from Hong Kong despite the current development of different ports in the PRD region.

CONCLUDING REMARKS

Today, Hong Kong has a population of a little over 6 million. Looking ahead to the year 2011 we can expect growth up to above 7 million people. With growing prosperity, expectations are rising for improved layouts, city forms and environmental standards. There is also a steadily rising demand for home ownership and for more participation in the planning of the city. The Government is expected to provide, in a timely fashion, sufficient land for additional new homes, offices, factories and major infrastructural facilities and to continue to fund a growing range of community services.

To meet these internal challenges and also the growing cross-border integration and related activities with the PRD and South China, Hong Kong must have an up-to-date physical planning framework to guide development and investment and to ensure the efficient use of resources. This framework should establish a balanced pattern of land uses and related key infrastructural projects that can be implemented in a logical and timely sequence. Full recognition must also be given to environmental objectives so that development takes place in a way that meets demands for an improved living and working environment.

After several years of hard work, our current review of the TDS is near completion. As expected, the work has been carried out with the wider PRD regional context and Hong Kong's anticipated roles in mind. We hope that the current TDS can take us up to 2011 and allow the necessary lead time for the formulation and implementation of major development programmes to allow Hong Kong to perform its anticipated roles effectively and efficiently in a PRD regional context.

As with all strategic planning studies over such a long time span, there will, however, inevitably be some uncertainty in forecasting future development requirements. While exploring a number of possible long-term development scenarios, the strategy will identify a set of development components for more detailed planning in the medium term. There should be a relatively high degree of confidence about achieving the medium-term strategy, leaving the long-term options more open and flexible.

The TDS will need to be up-dated and amended periodically to take account of significant developments and other changing circumstances. In particular, Hong Kong needs to consider the complementary provision of infrastructure within the territory to help facilitate development in the PRD. The PRD itself will probably, in the medium term, need to focus on the expansion of power supplies, the extension and upgrading of road and rail networks, the expansion of port and airport facilities, the rationalisation of urban development patterns and the wider implementation of environmental protection measures. In this connection, the Infrastructure Co-ordinating Committee and its four panels of experts established earlier this year should provide a valuable platform for a regular exchange of views.

Last but not least, it should be emphasised that vision, foresight and good planning will guide Hong Kong's development into the 21st century. Much effort will be directed at ensuring that Hong Kong remains an economically prosperous place as well as a good place in which to live and to work in the future years.

2

Pearl River Delta Development in the World Perspective

Aprodicio A. LAQUIAN

INTRODUCTION

As the day when Hong Kong becomes a Special Administrative Region of China approaches (July 1, 1997), there is understandable concern about the fate of this British Colony. From its origins as an outpost of British trade in Asia, Hong Kong has become a settlement of 6.1 million people generating a gross domestic product of more than \$130 billion a year. Measured by key international indicators of human development, Hong Kong enjoys a high quality of life. Per capita GDP is \$21,670 per year, savings make up almost a third of GDP, per capita calorie consumption is a rich 2,857 per day and life expectancy at 78 years is second only to Japan. In the light of the political difficulties under which these admirable achievements have been attained, the citizens of Hong Kong have much to be grateful for and a lot to be concerned about.

In reviewing Hong Kong's Territorial Development Strategy (TDS), most analysts of Hong Kong's development are of the view that the city should be seen in the context of the Pearl River Delta region. As indicated in the TDS Review (Planning Department, 1994, p. 3),

"The Pearl River Delta (PRD) region has developed into an important outward processing area for Hong Kong's industries helping to promote and underpin the role of PRD as a major catalyst for China's open door policy. In return, Hong Kong serves as a major trading outlet, a primary channel for and source of investment, and a centre of technical expertise for the wider region. The TDS, therefore, needs to be reviewed to provide a long-term planning framework for the provision of land and infrastructure in the Territory in such a way that acknowledges development in the PRD and other parts of South China."

The integration of Hong Kong with the PRD region has created one of the most dynamic “centres of accumulation” in the global economy. The Hong Kong/PRD region now rivals other global centres of accumulation such as the Tokyo-Yokohama conurbation, the Singapore-Johor-Riau “growth triangle”, the Greater Seoul metropolitan area, the Shanghai-Nanjing-Hangzhou-Wuxi development region, the Fujian-Taiwan coastal region and the Beijing-Tianjin-Tangshan development corridor. In recent years, there have been quite a number of growth triangles, trans-border regions and even a development polygon that have risen all over Asia. The Hong Kong-Guangdong-Taiwan triangle has been one of the most prominent of these (Figure 2.1).

The first conclusion one can make about the Hong Kong/PRD region’s role from an international perspective, therefore, is that this expanded region is in direct competition with other rapidly growing regions in Asia and other parts of the world. This competition is in areas where Hong Kong’s role has traditionally been predominant: finance, manufacturing and industry, trade and tourism. In this light, a crucial question to be asked is whether the greater integration of Hong Kong with the PRD region will help enhance its comparative advantage as a centre of development in the global context or whether it would serve to deter such development.

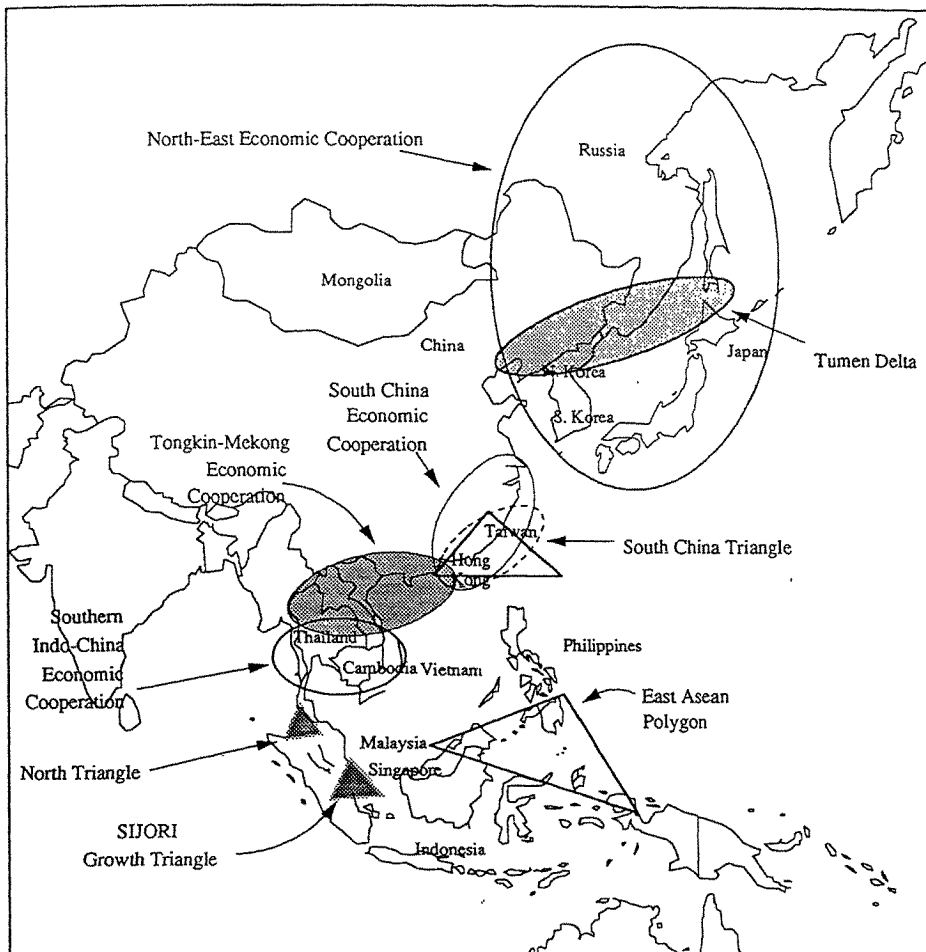
HONG KONG AND THE PRD REGION

Because of the close integration between Hong Kong and the Pearl River Delta, the Hong Kong Territorial Development Strategy Review has to take into consideration at least four elements that directly affect developments now and in the future.

First, after 1997, it will not be useful to limit one’s attention to the 1,056 sq.km. that now make up the colony’s territory. Geographically, Hong Kong forms one end of a growth triangle that has Guangzhou at one end and Macau on the other. In other words, instead of a Hong Kong of 6.1 million people, planners should now be concerned with a PRD region of almost 30 million people.

Second, developments in the Hong Kong/PRD region will be strongly influenced by policies emanating from Beijing. Such policies from the centre may be rooted in political, economic, military and other considerations that may or may not foster the territorial interests of the Hong Kong/PRD region. In the past, people of Southern China took solace in the saying that “the mountains are high and the Emperor is far away.” In this age of fax modems and fibre optics Beijing is not that far away anymore.

Figure 2.1 Transborder Regions and Growth Triangles in Asia



Source: Adapted from Nakayama 1991.

Third, developments in Hong Kong are also subject to myriad globalising forces that may not always interact harmoniously with policies from Beijing nor with indigenous initiatives from the Hong Kong/PRD region. What happens in Washington, D.C., Tokyo, Geneva, New York and Berlin have almost instant repercussions on the Hong Kong/PRD situation. The recent plunge in the value of the Mexican peso, for example, had almost instantaneous effects on the Hong Kong stock market. In turn, the fluctuations of the Hang Seng Index has critical influences on the money markets in Manila, Singapore,

Jakarta and Shanghai. The Hong Kong/PRD region is now an “international megalopolis” intimately linked with global developments. The region’s continued progress requires a TDS with an international perspective.

Fourth, and finally, part of the globalising forces influencing developments in Hong Kong involve population dynamics. As an integral part of China, despite its guaranteed autonomy, Hong Kong may not be able to resist the pressures from China’s demographic reality. For more than four decades, China has been able to control population movements through a household registration (*hukou*) system. Since 1979, however, population control measures have loosened and the problem of the “floating population” in cities has worsened. As Hong Kong is a most desirable destination for migrants, it would take considerable control measures to keep Hong Kong’s population growth rate and structural composition at appropriate levels.

There is also the fact that out-migration from Hong Kong has been accelerating, particularly among people who feel that reverting to Chinese authority may adversely affect their way of life. The number of Hong Kong immigrants to Canada, for example, has increased from 22,340 in 1991 to 38,910 in 1992. Although this dipped slightly to 36,485 in 1993, Hong Kong was still the most important source of immigrants in Canada in the past five years (Levine, 1994).

An important consideration in these population movements is the fact that the number of Hong Kong immigrants to Canada coming in under the “business immigrants” category has been rising. The proportion of business immigrants to Canada from Hong Kong increased by 106.1 percent between 1991 and 1992! It has been observed, of course, that some of these business immigrants merely wanted an alternative base for themselves and their families “in case things don’t work out after 1997”. Quite a number of them have turned into “astronauts” who maintain a household in Canada but continue to work in Hong Kong. The thing worth noting, however, is that the flight of people as well as their assets from Hong Kong is an important consideration in territorial planning.

Influenced by international trends and in turn influencing them, Hong Kong/PRD has become a “global region” that is playing one of the most important roles in international developments. As Sadler (1992) pointed out the “organisation of production” or the combination of productive machinery and labour and the way in which this is managed, financed and ordered, is rooted in the “geographical *location* of production”. This localisation of production in space, very much in evidence in the Hong Kong/PRD region, is occurring during an era of “globalisation” where corporate and state policies affect and are affected by decisions in other parts of the world.

The current global situation has been transformed by the “information revolution” that has managed to make the world that much smaller (Castells, 1989; Douglass, 1989). At the same time, the inter-relationships among global regions now dynamically shape the global economy. At the same time that the Hong Kong/PRD region is in competition with other centres such as Singapore-Johor-Riau, the Taiwan-Fujian border region, the South Korea-Northeast China region or even the Shanghai-Nanjing-Wuxi-Hangzhou region, there are also many complementarities and productive linkages that mutually benefit Hong Kong and these other areas. In this global system of informational linkages, the direct relationships among these “centres of accumulation” may play a more important role than the internal/national linkages among the development regions and their national capitals or centres of political and administrative power.

CHANGES IN THE GLOBAL SITUATION

The current global population of 5.7 billion is fast becoming urban – it is estimated that global population will increase by approximately 3.7 billion people between now and the year 2030. About 90 per cent of that increase will be in developing countries. Significantly, 90 percent of that increase will also occur in urban areas. In the coming decades, therefore, the rapid urbanisation of human settlements on this planet will have a tremendous effect and impact on Hong Kong.

The key element in this change, of course, is the fact that Hong Kong will be joining the most populous country in the world. China, with a population of almost 1.2 billion, is expected to be almost half-urban by the turn of the century. It is also a country rapidly shifting from a centrally planned economic and social system to a market-oriented system. China’s relationships with Hong Kong might be guided by the slogan of “one country, two systems” but political forces in such a huge and volatile country might not be able to live up to this pragmatic approach.

The Hong Kong/China relationships have been strongly influenced by a number of global trends. In the past couple of decades, the global economy has been deeply influenced by four important events and trends.

First, there was the major recessionary slump that gripped the world’s capitalist economies in the mid-1970s. The recession was triggered by a four-fold increase in the price of oil, followed by a near-doubling of oil prices in 1979-80. The European Community and North America, whose industrial growth had been based on assembly line (Fordist) approaches and very large multinational corporations suffered severely from this recession.

The recession also had adverse effects on poor countries saddled by heavy debt burdens that had to be subjected to onerous structural adjustment regimes by international financial institutions to prevent bankruptcy.

Second, by about the mid-1980s, the global economy made a geographical shift from Western Europe and North America to Japan, making that country the major source of international finance and technological innovations. As Douglass (1989) observed, “*by the mid-1980s, Japan had not only become the principal vortex of global capital accumulation: it had also become the primary source of direct investment sustaining the world economy*”.

Third, the late 1980s witnessed the rapid growth of newly industrialising countries (NICs) in the East Asian region. Hong Kong, of course, is one of the most prominent among these NICs. It has been observed by many analysts that the rapid growth of NICs had a strong *spatial* dimension in that it tended to concentrate on new production complexes and industrial districts in specific areas. At the same time, the growth of NICs also indicated a *decentralised pattern* that was more flexible and responsive to economic trends than the Fordist or large-scale assembly line approach formerly used in North America and Europe. Finally, the rapid growth of NICs tended to consolidate even more the economic shift to East Asia, which is currently fuelled by the rapid growth of China and a number of “near NICs” in Southeast Asia (Indonesia, Thailand, Malaysia and, more recently, Vietnam).

Fourth, the rapid and seemingly sustained economic growth of China has directly influenced global patterns. The growth of China, in turn, has generated two hypotheses regarding future developments in East Asia (Heikkila and Mera, 1995). One hypothesis proposes that developments in East Asia will be closely linked to developments in the West, especially the United States. This has been referred to as the “Western hegemony model”. A counter hypothesis is that there will be an “Eastern closure model”, tightening the linkages among East Asian and Southeast Asian countries and resisting or ignoring Western influences. This heightened Asian identity will be mainly based on increased hegemony of Japan. Later on, of course, by sheer force of numbers and economic might, China may in turn dominate the Asian region.

Arguments supporting “Western hegemony” in East Asia focus on cultural and political/ideological influences based on economic, military and political power. On a more frivolous level, Western influence may be seen in the popular appeal of Macdonald hamburgers, rock and roll, television sitcoms and Hollywood movies. This notion of a Western cultural invasion of Asia is fuelled by the transition of China, Vietnam and other formerly socialist countries to market economies.

Western technology has become ubiquitous in East Asia. Economic growth, at the same time, is fostering decentralisation of political power, loosening the grip of centralised power structures. Prosperity makes possible democratic elections and more participatory decision making; it encourages closer co-operative ties among factions rather than economic dominance, a main feature of Westernised liberal democracy.

The lure of economic prosperity has made Asian countries more aware of their similarities and interdependencies. The Asia Pacific Economic Cooperation Group (APEC), for example, has been organised to enhance greater co-operation. At present, APEC accounts for 37 percent of the world's population, 40 percent of its trade and 50 percent of its gross national product. Closer linkages among members of the Association of South East Asian Nations (ASEAN) are generating real joint ventures and gradual abolition of barriers to trade among them has already been started. Within APEC, the Eminent Persons Group has called for complete trade freedom in all goods and services within APEC by the year 2020. The Pacific Business Forum, the private sector group in APEC, has asked for complete trade liberalisation by 2010 (FEER, 10 November 1994, p. 5).

Those who see East Asia resisting influences from the West point to the East Asian Economic Caucus proposed by Malaysia's Prime Minister as an alternative to APEC. As Asian countries have prospered, there has been closer economic interdependence and increased trade among them rather than the traditional reliance on North-South trade. The rapidly expanding economies of China, Vietnam and Indonesia continue to receive investment capital from Japan, Korea, Hong Kong, Singapore and Taiwan. At the same time, capital surplus areas are investing in the poorer areas of Asia. The increasing Hong Kong investments in the Pearl River Delta is an excellent example of this closer regional integration. More recently, Japanese, Singaporean, Taiwanese and Hong Kong investments in the former American military bases in the Philippines are indicators of closer Asian economic integration.

Those who like to see shifts in global intellectual patterns are noting a heightened sense of identity among the countries of East Asia. Sometimes dubbed "Confucianist capitalism", or even "Chinese family capitalism", this sense of identity is contrasted with the Weberian concept that links the "Protestant ethic" to the spirit of capitalism. It has been argued that the Confucian values of family honour, respect for those in authority (especially the state), reliance on hard work, maintenance of harmonious relationships among people and fostering harmony between people and their physical and spiritual environment are very strong factors behind the rapid growth of East

Asian in recent years. As Asia prospers, there will be less and less adherence to Western values and, in turn, a strong resistance to Western hegemony.

Many observers of the world economic situation are now hailing the advent of the Pacific Century. As Hong Kong prepares to enter this new century, its role in the global economy is strengthened by its expanded territorial scope as the hub of the PRD region. The number one objective of Hong Kong's strategic planning, therefore, should go way beyond the current aim which is to "*enhance the role of Hong Kong as an international city and a regional centre for business, finance, information, tourism, entrepot activities and manufacturing*" (Planning Department, 1994, p. 3). As already pointed out, Hong Kong's TDS should encompass Hong Kong as an integral part of the PRD region and it should focus on the role of that region in Asian and global development.

As 1997 approaches, the inevitable and accelerating closer integration of Hong Kong with its PRD hinterland will require less emphasis on the status of Hong Kong as a "special administrative region" endowed with "a high degree of autonomy" guaranteed for 50 years after the Colony reverts to Chinese sovereignty. As Taylor (1994) has observed, the benefits of integration between Hong Kong and the PRD region far outweigh the benefits from territorial fragmentation. Historical events notwithstanding, the continued progress of Hong Kong in the future rests with its integration with the PRD region and the whole Chinese economy. To attempt to maintain the city-state status of Hong Kong in the 21st century flies in the face of geopolitical reality.

INTEGRATION OF HONG KONG WITH PRD REGION

As Guldin (1989, p. 24) has pointed out, Hong Kong is "*a Chinese city in continuous (if at times attenuated) contact with its Chinese hinterland*". Since it was founded as a British Colony in 1842, it has thrived mainly because of its role as a gateway to China. Although during the Cold War, Hong Kong was seen as a city-state that developed rapidly because of its adherence to the free market principle and its efficient government, it is now clear that the main asset of Hong Kong is China, specifically Guangdong Province. Hong Kong's linkages with Guangdong are especially important as "*It is from there that Hong Kong's population, foodstuff, water and goods have largely come and it is to there that Hong Kong's remittances and cultural influences flow*" (Guldin, 1989, p. 27).

The linkage between Hong Kong and the PRD region has been subject to the vagaries of history. From 1949 until the mid-1970s, the Chinese fear

against “contamination” by capitalist Hong Kong kept relationships to a minimum. Despite such ideological considerations, however, Hong Kong became a convenient conduit for global influence on China, with its adjacent Pearl River Delta being seen as the “window to the South wind” (*nanfeng chuang*) opening to Hong Kong.

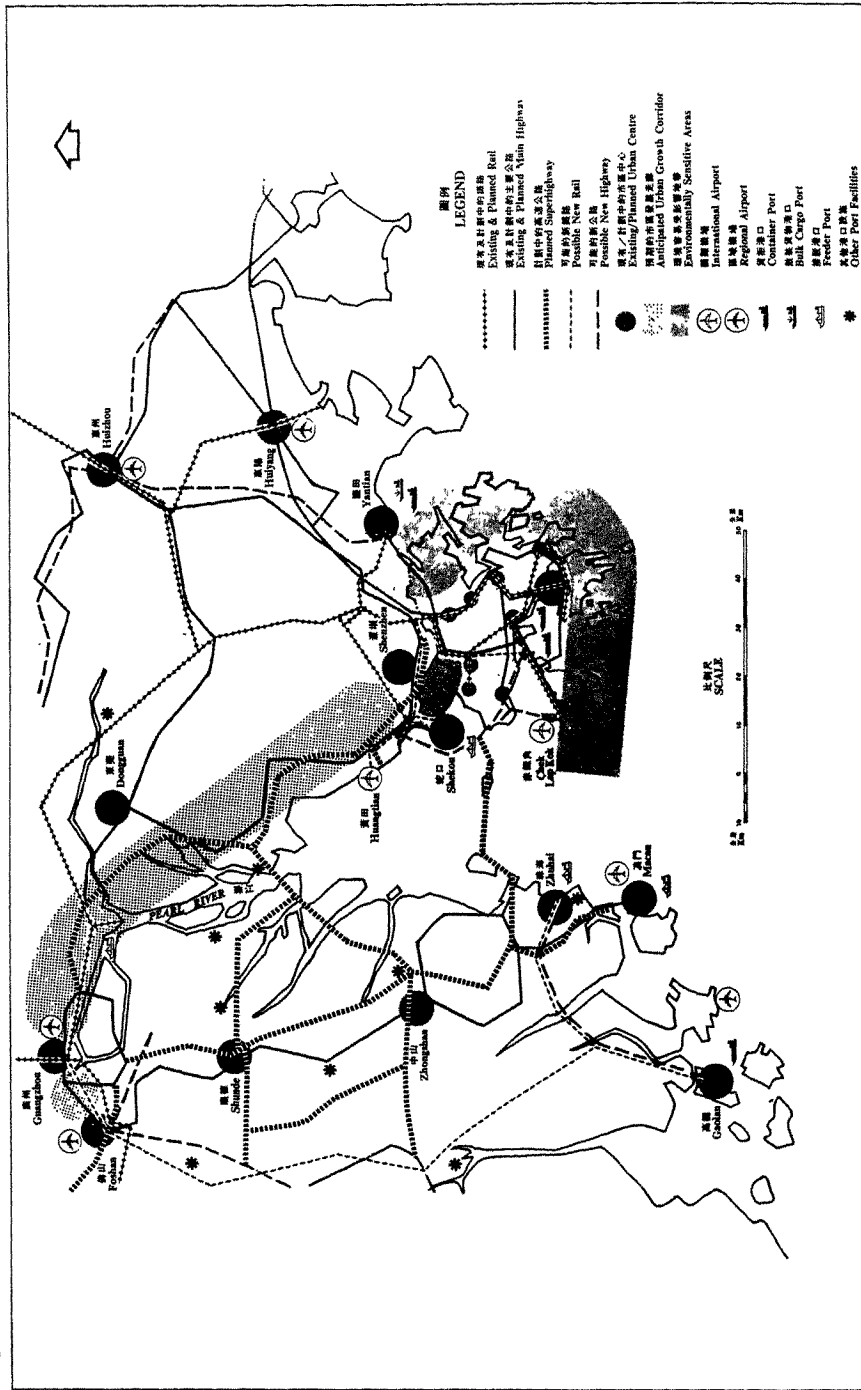
After the death of Chairman Mao Zedong in 1976, a more pragmatic leadership in Beijing encouraged closer economic and social relations with Hong Kong and the outside world. Four special economic zones (two in the PRD) were opened in the early 1970s, the whole PRD was declared the Zhujiang Open Economic Region in 1985. Contrary to earlier egalitarian policies, China has allowed the PRD region to get richer much faster than other regions. The visit of China’s patriarch, Deng Xiaoping to selected sites in the PRD region in 1992 gave renewed impetus to the reformist policies based on fostering of a “socialist market economy”.

The PRD region that Hong Kong has been rapidly getting integrated into is an area of about 47,430 sq.km. containing a population of more than 20 million people (Lin, 1994, p. 56). It includes the officially designated Zhujiang Delta Open Economic Region (with the municipalities of Foshan and Jiangmen and the two former counties of Zhongshan and Dongguan as well as 13 counties which include Doumen, Baoan, Zengcheng, Panyu, Nanhai, Shunde, Gaoming, Heshan, Xinhui, Taishan, Kaiping, Enping and Shanshui). In 1987, three municipalities (Qingyuan, Huizhou and Zhaoqing) and eight counties were added to the region (Huaxian, Chonghua, Huiyang, Huidong, Boluo, Gaoyao, Sihui and Guangning). A proper definition of the PRD region, of course, should include the Guangzhou metropolitan area as well as the two special economic zones of Shenzhen and Zhuhai. After 1997 and 1999 it should include Hong Kong and Macau (Figure 2.2).

The PRD region account for 33 percent of Guangdong’s population and 26 percent of its land area. It is one of the most productive parts of China, producing 68 percent of the agricultural and industrial output of Guangdong Province. It also contributes 77 percent of Guangdong’s export earnings (Lin, 1994, p. 56).

Development in the PRD region is quite uneven. In general, the fastest growing nodes have been Guangzhou and the areas adjacent to Hong Kong and Macau (especially the special economic zones of Shenzhen and Zhuhai). The rapid construction of transportation and communication facilities in recent years has served to strengthen the region’s integration. More important, the spatial integration of manufacturing, industry and agriculture has also become stronger, with specialised functions allocated to each part of the region. An important element in this integration is the linkage between

Figure 2.2 Territorial Development Strategy Review in the Regional Context



Source: Planning Department, Hong Kong Government (1993), p. 15.

Hong Kong and Macau-based industries “letting out” productive activities to small and medium-sized firms on the Chinese mainland. As land values and labour costs have escalated in these two centres, more and more enterprises have actually moved to the PRD region.

THE HONG KONG REGION IN A GLOBAL CONTEXT

As Hong Kong enters the 21st century, the continuance of its strategic role in the global economy is an important point to consider. As previously stated, that role will depend a great deal on its integration with the PRD region. In this regard, it is important to recapitulate the factors that have made Hong Kong a global centre of accumulation. Briefly, these factors have been: (a) finance; (b) trade; (c) transportation; (d) manufacturing; (e) tourism and (f) management expertise. In the future, these factors will still be the main considerations in the Hong Kong/PRD region development strategy within an international perspective. Even as the Hong Kong/PRD development will be enhanced by the factors indicated above, however, the environmental effects and impact of development in the region will be a crucial limiting factor.

FINANCE

Hong Kong's economy is dominated by currency-printing banks and British-owned mega-companies (*hongs*) that are the backbone of Asian regional finance. Historically, the capital of these companies have come from the China trade, originally opium, tea, silk, porcelain and other trade items. Later, capital was amassed through cheap manufactured goods, textiles, toys, appliances and real estate development. Lately, of course, Hong Kong's stock market, securities, mutual funds and other financial services have taken on a real life of their own, serving as financial sources for Asia and the whole world.

Ironically, it was Chinese socialism in the early days of Hong Kong that made possible rapid capital accumulation in the Crown Colony. The original capital for Hong Kong's industrial base came from Shanghai industries transferred between 1947 and 1949. The coming down of the “bamboo curtain” after 1949 did, in turn, make Hong Kong attractive to international financiers as the gateway for tapping into the rich Chinese market.

Since China's opening up to the outside world, of course, Hong Kong has served as an outlet for China's investments as millions of Chinese savers channelled their savings to more lucrative Hong Kong financial companies. Using personal and ethnic connections, local governments and various enterprises in Guangdong have invested in Hong Kong firms as a convenient way of earning much valued foreign exchange. Such investments have even

been used by Hong Kong entrepreneurs in their ventures in North America and Australia.

As China has enjoyed annual economic growth rates in excess of 12 percent, China investments in Hong Kong have risen proportionately. China's CITIC, for example, has large investments in Hong Kong's Cathay Pacific and Hong Kong Telecom. The Bank of China Group controls eleven Hong Kong incorporated banks and China Merchants and China Travel groups have investments in hotels and other properties. It has been estimated that Chinese groups controlled directly 19 Hong Kong companies listed on the local stock exchange with capitalisation of US\$8.9 billion (Holberton, 1993).

Hong Kong's investments on the mainland have also escalated in recent years. Between 1979-90, about 45 percent of contracted foreign investments in China (more than US \$20 billion) went to Guangdong Province. About \$15 billion of these (about 75 percent of all investments in Guangdong) came from Hong Kong. Hong Kong, in fact, is the source of about 57 percent of all investments in China. (Sung, 1992, p. 4). Another estimate set Hong Kong foreign investments in China at 65.7 percent of the Chinese total.

A very important role played by Hong Kong is acting as the conduit for Taiwanese investment in China. According to industry sources, Taiwan's trade with China has increased from \$247.7 million in 1983 to \$8.7 billion in 1993. According to Taiwanese law, all trade with China has to be conducted "indirectly", which in most instances mean doing it through Hong Kong. Considering that the approved Taiwanese "indirect investments" amounted to \$4.5 billion in 1994, the deals handled by Hong Kong intermediaries would have yielded handsome profits.

It is to Hong Kong's primary interest that it will be able to maintain or even expand its financial role after 1997 when it becomes a part of China. To this end, the following strategic considerations are most important.

First, one of the most important issues to be resolved in Hong Kong's Territorial Development Strategy is how to maintain the pre-eminent role played by Hong Kong as a source of capital and industrial finance in Asia. A particularly important element of international finance is a country's assurance that trading in its currency will not be subject to massive fluctuations. In the case of Hong Kong, the viability of the Hong Kong dollar should be assured. To this end, the recent comment of Nobel Prize-winning economist Milton Friedman that Beijing will probably not continue the Hong Kong dollar and its tie to the US dollar is a cause for concern.

Second, the other element in assuring Hong Kong's pre-eminent position in trade is adherence to the rule of law. The provisions of the Basic Law

setting forth the foundations of a “one country, two system” formula for China and Hong Kong are crucial to this assurance. One hopes, of course, that the authorities in Beijing will recognise that expanding economic linkages with the world absolutely require the rule of law as a guarantee of behavioural predictability for it is the best assurance that business agreements will be honoured. It is also hoped that China will recognise that a capitalist Hong Kong, as a “stable island of fiscal responsibility”, would give the settlement a firm financial link to the rest of world.

Third, Hong Kong’s future financial importance will depend on the continued technological modernisation of its information processing and dissemination system. At present, several trillion dollars per day are exchanged globally in cyberspace through electronic fund transfers. For Hong Kong to be a key player in this global money exchange, it must have one of the most advanced communication systems directly linked to the global network. This means that fibre-optic cables should replace copper wire in Hong Kong and the PRD as soon as possible. Smart buildings, linked to the outside world through satellites will be needed to obtain and send information anywhere in the world in real time. In the future, information advances may even make financial offices unnecessary as personal computers, fax, modems, teleconferencing and other cutting edge technologies will enable Hong Kong money managers to be directly linked with their counterparts anywhere in the world.

Despite the vision of this bright new financial world, Hong Kong’s future as a financial centre would have to contend with political uncertainties. For example, as China rationalises its own economic strategy, what are the chances that Shanghai, rather than the Hong Kong/PRD region will be favoured as the country’s financial centre? The massive developments in Pudong promote it as China’s new financial centre. Will the financial facilities in Shanghai develop to such an extent that they will outweigh the advantages offered by Hong Kong?

Another challenge to Hong Kong’s financial role in Asia and the world is posed by Taiwan’s designs to become a “Greater China hub” or a “regional operations centre” for finance, high-end manufacturing, sea and air transport, telecommunications and media. Anticipating that Hong Kong will encounter problems as 1997 comes around, Taiwan is gearing up to provide an alternative to Hong Kong.

There is also the challenge of the Singapore-Johor-Riau growth triangle as a competing financial centre. Spurred by large companies fully backed by the Singapore Government and government controlled institutions, Singapore is fast becoming an important financial centre. For example, a three-phase

process deregulating operations of Singapore's Central Provident Fund between 1995 and 1999 has already been started to increase the Fund's role in fund management and entry into capital markets. Although Singapore's fund business still constitutes less than one-fourth of Hong Kong's the rapid rate of growth in the financial field, backed up by governmental incentives, will most likely pose a challenge to Hong Kong in the future.

The main approach in Hong Kong's Territorial Development Strategy that would be an effective counterpoint to the challenges posed by Shanghai, Taiwan and Singapore mentioned above is to enhance further the linkages between Hong Kong and the Pearl River Delta region. Hong Kong's superiority as a financial centre can only be strengthened by the resources from the PRD region that can be channelled through Hong Kong. Hong Kong's financial viability will be greatly helped as well by the economic and financial growth that will arise from the high returns to investments from Hong Kong into the PRD region.

Hong Kong's advanced infrastructure, excellent communication linkages, highly trained financial managers, efficient governmental system and high reputation in the field of finance constitute a tremendous asset in the global economy. The key factor for the continued excellence of financial performance in Hong Kong is explicit assurance to the authorities in Beijing that a strong financial centre in Hong Kong is a key element in a financially strong China.

TRADE

The PRD region has been known by Southern Chinese as China's "window to the South wind" (*nanfeng chuang*) and the river port of Guangzhou has been an important trade outlet to Asia since the Qin Dynasty (221-206 B.C.). Hong Kong has been an important element in that window. Hong Kong's economic role from the time of its founding has been entrepot trade – the import of goods from China for re-export to other countries. Although the Communist triumph in China in 1949, followed by the United Nations embargo on China trade in 1951, cut deeply into that trade, it has been one of the mainstays of Hong Kong's prosperity.

Since the mid-1970s, Hong Kong-China trade has flourished. It is estimated that 43 percent of China's exports are to Hong Kong while 38 percent of China's imports also come from Hong Kong. In turn, a full quarter of Hong Kong's exports go to China and 37 percent of Hong Kong's imports come from China (Sung, 1992).

In 1990, 62 percent of China exports to the United States were re-

exported through Hong Kong. About 20 percent of US exports to China also went through Hong Kong (Sung, 1992, p. 11).

An important element in increased trade between China and Hong Kong and between China and other parts of the world through Hong Kong has been the establishment of special economic zones such as Shenzhen and Zhuhai. The long-term goal for the SEZs, of course, is that they should serve as manufacturing centres where output would be sent to the outside world. An in-depth study of the Shenzhen SEZ has shown, however, that until 1984, commerce exceeded industrial production and manufacturing as the main element in the zone's economy. In part, this was due to heavy importation of building materials and equipment for the establishment of Shenzhen. In the main, however, 52.3 percent of imports were consumer goods. In other words, *"Shenzhen had become an import trade centre because of its unique relationship with the overseas market. Since it is open to the international market, foreign goods have been allowed to enter Shenzhen without much restriction. And since it is also open to the interior, domestic enterprises in Shenzhen have access to the flow of goods between the special economic zone and interior regions. Situated as it is adjacent to the major international metropolis of Hong Kong, Shenzhen has a nearby and ready supply of foreign goods available."* (Castells et. al, 1988, p. 460)

With Hong Kong reverting to Chinese jurisdiction in 1997, the question may be raised regarding the possibility of Hong Kong's continued dominance in the trade between China and the outside world. Again, the strong competition offered by Shanghai, Dalian, Xiamen and other Chinese trade centres to Hong Kong may be mentioned.

In this regard, there are a number of factors that may be considered in the Territorial Development Strategy which arise from the closer integration of Hong Kong with the PRD.

First, rapid economic growth in the PRD arising from indigenous growth and investments in manufacturing on the part of Hong Kong entrepreneurs cannot help but accelerate trade between the PRD and Hong Kong and, naturally, increased trade between Hong Kong and the rest of the world.

Second, the rapid expansion of infrastructure between Hong Kong and the PRD has directly influenced the volume of trade. As such, expansion of highways, ports, harbours, ferry links, telecommunications, etc. that link Hong Kong with the PRD and the rest of China will be the best assurance that trade volume will accelerate in the near future.

Third, Hong Kong should continue to provide storage, packaging, sorting and other services that directly enhance the value of traded items passing through its ports. At the same time, Hong Kong must continue to develop the

“value added” services directly related to trade such as better packaging, further processing, advertising, marketing and value-enhancement of trade items coming from China. The same services must be provided to trade items from other countries going into China.

Fourth, continued expansion in Hong Kong investments in the PRD in the field of manufacturing and industry will also inevitably enhance cross-border trade. As Hong Kong and the PRD become essentially one economic region, the region will attract Chinese traders to course their goods destined to the outside world through this region. It will also facilitate the importation of goods from other parts of the world to China.

TRANSPORTATION

The continued strong role of Hong Kong in the China trade, of course, depends on transportation services. From the age of fast China clippers to container ships and jumbo cargo jets, Hong Kong’s prosperity has depended on its role as a hub for transportation. It is estimated that by the year 2000, 10 percent of all high-value cargo in international trade will be by air. The recent agreement on the new international airport at Chek Lap Kok will enhance Hong Kong’s transportation role. It is estimated that by 2040, air passenger traffic all over the world would increase three times. Positioning Hong Kong as an “international hub” would assure its continued prosperity. As indicated in the TDS, an “extra high growth” option for Hong Kong may require international airports at Chek Lap Kok, Fuyong (Huangtian) and Macau.

It has been projected that, by the year 2000, container throughput in Pacific Asia will have trebled because of increases in vessel size and greater transport hub and feeder development. Transportation analysts have identified Hong Kong, Kaohsiung, Pusan and Singapore as transport hubs while Tokyo-Yokohama and Kobe would become “major regional ports” (Rimmer, 1994, pp. 17-18). Because of these future developments, the Territorial Development Strategy for Hong Kong calls for efficient hub ports not only in Hong Kong Harbour but in Yantian and even Gaolan. Bulk cargo ports will be needed at Yantian and Gaolan and feeder ports will be required at Shekou, Macau, Zhuhai and a number of Pearl River towns. Ports capable of handling massive container traffic will be needed in Hong Kong and the PRD region.

Road links between Hong Kong and PRD as well as freight and passenger rail facilities will have to be expanded and made more efficient. In particular, the transport links with Shenzhen and Zhuhai as well as the

Shenzhen-Guangzhou superhighway are of primary importance. Connection through the main Guangzhou-Beijing rail line is also very much needed in order to expand the "catchment area" of the Hong Kong/PRD development region.

An important element in the Hong Kong/PRD region growth is the fact that China has been accelerating its transportation network as well. For example, it has been reported that investment in infrastructure in Guangdong Province has increased 13-fold between 1978 and 1991. The share of transportation and telecommunication in the Guangdong Provincial capital investment budget rose from 15.9 percent in 1978 to 21.8 percent in 1991. The existing highway system in the PRD region was extended by 3,470 km., 30 deep-dock harbours were constructed, six new airports were built and telephone systems with direct dialling capabilities were set up in the PRD between 1980 and 1992. A modern freeway connecting Shenzhen, Guangzhou, Hong Kong and Macau entailing an estimated investment of \$1.2 billion has been started (Lin, 1994, p. 168, quoting Guangdong Statistical Bureau, 1992).

Despite China's considerable transportation and communication infrastructure investments in the PRD, rapid rate of growth in Hong Kong and its hinterland will place tremendous strain on the capacity to move goods, people and services in the Hong Kong/PRD region. Infrastructures in China have been neglected for such a long time that demand will continue to outstrip supply for some time to come. There may also be short-term bottlenecks and problems even as more funds are devoted to transportation and infrastructure. For example, in a case study of Panyu *zhen* in 1992, Lin (1994) found that the immediate effect of the establishment of a ferry at Humen on the southern tip of Panyu was more serious traffic jams as 10,000 vehicles flocked to Humen each day (the ferry capacity was designed for 3,000 vehicles). The building of more roads and construction of a bridge across the Ruoxi River had the unfortunate effect of increasing deaths due to traffic accidents. This may be related to the fact that the number of motorcycles owned by Panyu residents increased from only 85 in 1978 to 25,056 in 1991.

MANUFACTURING

The cheap labour of migrants from China combined with restrictive union regulations by British colonial practice traditionally made possible Hong Kong's role as manufacturer of cheap consumer goods. As Hong Kong's labour costs spiralled upwards, however, manufacturing has shifted to the

Pearl River Delta region where Chinese partners provide land, utilities and labour while the Hong Kong enterprise provides capital, equipment, imported materials, design, production expertise and markets. It has been estimated, for example, that more than three million manufacturing jobs in PRD are controlled from Hong Kong (Shen, 1993).

Hong Kong manufacturers who invested in the PRD region are mainly small firms with little capital engaged in what has been called "outprocessing" (Sit, 1989). This process poses less risks for small Hong Kong investors who do not have to deal with problems such as labour unions, environmental standards, plant management, local taxes, etc. Integration with the PRD region, therefore, has resulted in a resurgence of manufacturing in Hong Kong's hinterland.

A case study of Dongguan *shi* provides an excellent picture of the effects and impact of Hong Kong investments on manufacturing in the PRD. Geographically, Dongguan is more distant from Hong Kong than Baoan but it has been estimated that Dongguan residents have at least 650,000 relatives in Hong Kong and Macao. These personal linkages have easily translated into economic joint ventures including goods manufacturing using materials supplied by Hong Kong sources, assembly of materials from Hong Kong, joint ventures and co-operative ventures. Lin (1994) quoted the Guangdong Statistical Bureau as indicating that by the end of 1991, a total of 10,586 contracts had been signed between Dongguan manufacturers and Hong Kong and overseas investors (of which 5,700 were already in operation).

An important approach to establishing manufacturing enterprises is the so-called *sanlai yibu* or "three supplies, one compensation" system. Under this system, the Hong Kong partner provides the "three supplies" of raw materials, components or parts, and prototype models to be manufactured. The Hong Kong partner also provides a lump sum "one compensation" to the Dongguan partner for the manufactured goods contracted for, usually in hard currency (US or Hong Kong dollars). Under this arrangement, the Dongguan partner (usually a collective but now, increasingly, a private entrepreneur) provides land, labour, buildings, electricity and other production inputs. The Hong Kong partner is saved from the function of hiring or paying workers directly. Some arrangements may also stipulate that after some time (say five years), the equipment and machinery provided by the Hong Kong partner might become the property of the Dongguan partner. Not surprisingly, local Chinese entrepreneurs in Dongguan have prospered under this arrangement. By 1990, export processing firms in Dongguan using the *sanlai yibu* system had reached 4,680 and they produced total exports amounting to US\$150 million (Lin, 1994, p. 208).

Manufacturing in PRD prospers because of the ready supply of cheap labour. The monthly salary of a worker in an export processing company in Dongguan is about one-fifth the salary of a similar person in Hong Kong. Although skills of Dongguan workers are relatively lower than those in Hong Kong, the labour cost difference makes setting up a manufacturing enterprise in Dongguan more attractive for the Hong Kong investor. Not surprisingly, the bulk of manufacturing in Dongguan is based on the production of simple labour-intensive products: textile, wearing apparel, toys and electronics. Companies in Dongguan are also quite small. They are also widely distributed in many small human settlements, thus enabling many people to “leave the soil but not the village” and to “enter the factory but not the city”.

Aside from cheap labour, the improved transportation and communication in the PRD has also helped to make manufacturing more efficient. For example, Dongguan was one of the first counties in China to set up a computerised telephone system that connects directly with 17 countries all over the world. All townships and villages in Dongguan can be reached by telephone and 20 percent of these phones have direct dialling to foreign countries (Lin, 1994, p. 212).

The penetration of the PRD by Hong Kong manufacturing entrepreneurs has internationalised the region. The higher income of Chinese workers has enabled them to buy consumer items such as coloured TV sets, short-wave radios, etc. Frequent visits by Hong Kong visitors have served to open up the PRD to social and cultural influences. People from the PRD have become familiar with consumer items from Hong Kong. Even the local language has borrowed a lot of Hong Kong and English words. The case of Dongguan, therefore, typifies the “globalisation” of the PRD through the influence of Hong Kong. In turn, the outpouring of manufactured goods from Dongguan and the PRD has brought “made in China” products to the international market.

From a territorial planning perspective, the closer links between Hong Kong and the PRD makes possible geographically specialised operations that benefit from differences in resource endowments, labour skills, infrastructure facilities and access to markets. The expanding hinterland of Hong Kong enables a number of complex enterprises to be site specific. For example, computer manufacturers can locate their plants depending on specific advantages. The manufacture of sophisticated elements (central processing units) may be located closer to Hong Kong where expensive highly specialised workers would have access to all the amenities they require for themselves and their families. Relatively simple computer parts (plastic shells, keyboards) may be manufactured in PRD companies employing

inexpensive unskilled or semi-skilled workers. Good transportation and communication facilities allow managers of complex enterprises to bring various parts of a product together. The assembly of various parts into one complex product, therefore, is greatly encouraged by the Hong Kong/PRD functional integration.

TOURISM

About 70 percent of Hong Kong visitors are tourists. At the rate of 4 to 7 percent per year, it is estimated that tourist arrivals in Hong Kong will reach 13 million a year by the year 2000. Tourism is Hong Kong's second largest source of foreign exchange earnings. Hong Kong hotels, with an occupancy rate of 85 to 90 percent are hard pressed to keep up with demand. It is estimated that hotel rooms in Hong Kong should double to 68,000 by the year 2010 just to keep up with demand.

The increased integration of Hong Kong with the PRD provides excellent opportunities for the expansion of tourism. While the main motivation for a Hong Kong holiday seems to be shopping, adding visits to the PRD for cultural and recreational purposes provides additional value for tourists. From a planning viewpoint, therefore, it is most important to provide the amenities required by an efficient tourism industry: good transportation and communication, clean and well maintained hotels, good eating places, cultural sites, recreational opportunities, safety and predictability, friendly and honest guides, and accurate and well prepared information about important tourist sites.

The tourism industry in Hong Kong and the PRD will also greatly benefit from an improved communication system. At present, one of the most frustrating aspects of using Hong Kong as a base for tourism in China is poor communication. Airline reservations to mainland destinations cannot be confirmed, itineraries are changed without prior notice, hotel bookings suddenly disappear, tourists may be stranded in some remote destination and it would be impossible to reach them, etc. These problems must be overcome if tourism as a Hong Kong and PRD industry is to flourish.

The professionalisation of tourism management in the PRD and other parts of China, with Hong Kong professionals leading the way, would boost the tourism industry. Hong Kong has already developed tourism to a very high level. What is needed is for Hong Kong's considerable training and human resource capacity building to be applied to assist partners on the mainland. Assistance is needed in transportation and logistical arrangements, hotel management, food and beverage management, communication,

marketing, public relations and other tourism-related fields. Assistance is also needed in the search for varied and interesting tourism sites and the development of such sites to bring them up to “international standards”.

HUMAN RESOURCES AND EXPERTISE

The continued progress of Hong Kong is heavily dependent on the availability of well trained professionals and workers to manage its private and public enterprises. Aside from the original British colonial entrepreneurs, professional management expertise in Hong Kong has been augmented by migrants from Shanghai and Guangdong as well as staff members of large firms brought in from other parts of the British Empire. Wise policies that stressed formal education and apprenticeship systems vastly improved the quality of Hong Kong’s human resources.

At present, Hong Kong technical and professional expertise is mainly responsible for the settlement’s rapid expansion to other parts of Asia. The expertise has also been shifting to higher end categories. One noticeable trend that has been observed of late, however, is the decline in the numbers of certain types of workers. Between 1987 and 1991, the manufacturing work force in Hong Kong has declined from 896,000 to 700,000. While there was an increase of 410,000 employees in the finance, communication, trade and transport industries, the loss of people in manufacturing may be a harbinger of more serious problems in the future (Maruya, 1992, p. 142).

The outmigration of Hong Kong’s talented professionals is a cause for concern in TDS. Although the main factors that influence this are somewhat beyond the ambit of territorial strategic planning, there are still a number of measures that can be included in the plan to encourage much needed people to stay and/or attract others to live in Hong Kong. These factors include improved housing and urban amenities, good educational opportunities for children, access to recreational facilities, a non-polluted environment, etc. While all these factors may not be the absolute determinants for staying in Hong Kong, making them available will help a lot in retaining much needed human resources in the territory.

ENVIRONMENTAL LIMITS AND SUSTAINABILITY

Objective 4 of Hong Kong’s TDS seeks:

“To enhance and protect the quality of the environment with regard to air quality, water quality, noise, solid waste disposal and potentially hazardous installations by minimising net environmental impacts on the

community and maximising opportunities to improve existing environmental problems.” (Planning Dept., 1994, p. 3)

An environmental baseline study has been conducted as an input to TDS in order to determine the “sustainable” level of development in each of Hong Kong’s sub-regions. The study identified liquid and solid waste management and marine and surface water quality as the key environmental issues in Hong Kong over the next two decades.

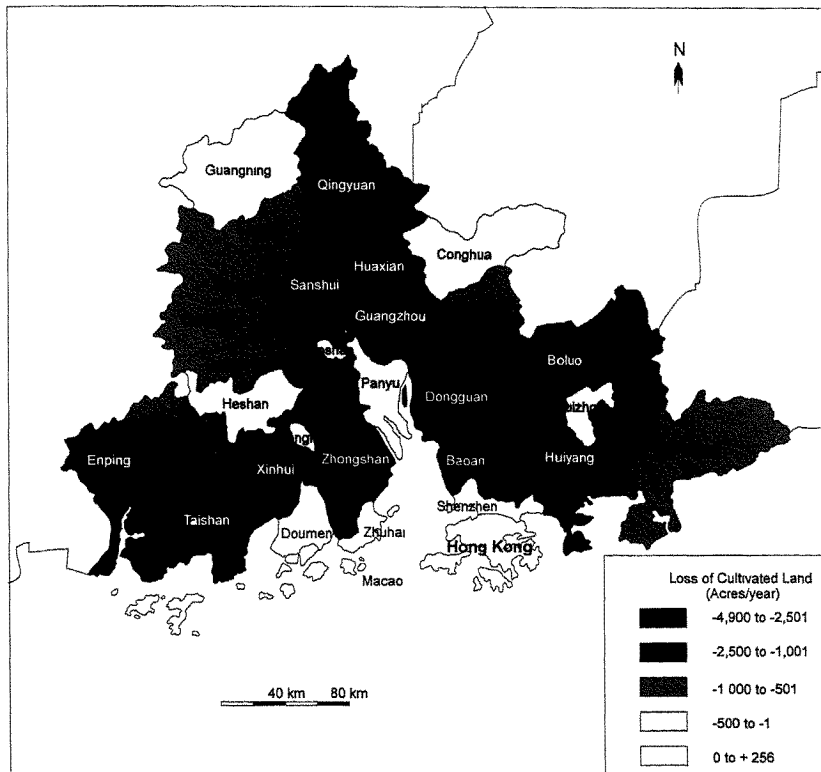
Hong Kong has one of the most human-built environments of any city its size. Its integration with the PRD will have both environmentally mitigating and worsening effects. In general, as Hong Kong’s development spreads to less densely populated hinterland areas, it should be able to reduce pollution pressures on the environment. This approach has been one of the main motivations for expansion of highly urbanised areas into less urbanised ones. In the case of Singapore, for example, expansion of development in the Johor (Malaysia) and Riau (Indonesia) hinterlands of the “growth triangle” has enabled the city-state to maintain its high environmental quality.

One measure of sustainability is the achievement of balance between built-up areas and green space. Although the PRD is less densely populated than Hong Kong, a process of “creeping urbanism” has already started. It has been estimated by Guangdong Province, for example, that between 1980 and 1990, about 327,800 acres of cultivated land in the province has been converted to nonagricultural uses (Guangdong Statistical Bureau, 1992, p. 65). The amount of existing cultivated land in the PRD, therefore, has been diminished from 2.58 million acres in 1980 to 2.25 million acres in 1990. Per capita acreage of cultivated land in Guangdong, therefore, dropped from 0.15 acres in 1980 to 0.11 acres in 1990.

As Figure 2.3 shows, the loss of cultivated land in the PRD has been most severe in the areas adjoining Hong Kong and Macao (the counties of Baoan, Dongguan and Zhongshan). It must be mentioned, also, that these estimates of loss of cultivated land are official ones. They do not adequately cover unauthorised use of land that local officials may have approved to escape taxes or entice joint venture investors to set up enterprises in their jurisdictions. Preliminary field research observations reveal that loss of agricultural land to nonagricultural uses has been most rapid in formerly rural settlements that changed their status to cities or designated towns. It has been estimated that since 1980, the PRD has been losing 77.32 sq.km. of cultivated land in the countryside to nonagricultural uses every year (Lin, 1994, p. 115) .

Aside from the rapid loss of agricultural land in the PRD region, there is

Figure 2.3 Annual Loss of Cultivated Land for Zhujiang Delta, 1980-90



Source: Guangdong Statistical Bureau (1991), as cited in Lin (1994)

clear evidence that many areas in Guangdong Province are already heavily polluted. It has been estimated, for example, that in 1992, Guangdong generated 501.4 billion cubic meters of industrial waste, about 8 percent increase of the 1991 levels. Provincial companies were said to have emitted 51.5 tons of carbon dioxide, which was 7.3 percent higher than 1991. Industrialisation has doubled the amount of acid rain in Guangdong, resulting in environmental damages costing more than US\$344 million. Guangdong's rivers were polluted by 2.8 billion tons of waste water that were directly pumped into these bodies without proper treatment (Yao, 1993, pp. 55-56).

There are a number of reasons for Guangdong's serious pollution problem. First, during the earlier periods of China's development, environmental awareness was sacrificed to the need to achieve rapid economic growth. Second, China's technological level, especially its reliance

on coal for energy, did not allow for effective environmental protection. Third, most enterprises in China, especially those linked up with Hong Kong investors, are too small to afford technologies that can mitigate or prevent environmental degradation. They also do not have enough capital, technical know-how, civic discipline or economies of scale to install pollution control or mitigating measures.

Direct and indirect threats to the environment, therefore, should be at the forefront of factors to be considered in reviewing Hong Kong's Territorial Development Strategy. Areas of significant landscape features, unique areas of environmental importance and areas of significance suitable for conservation need to be identified and protected. These may include the Mai Po Marshes in the North West New Territories and marine areas of high ecological and recreational value in the South East New Territories. While Hong Kong itself has been very conscious of international environmental standards, such as those embodied in Agenda 21 approved by the UN Conference on the Environment, adjoining settlements in the Pearl River Delta have not been as meticulous in observing environmental aspects. Hong Kong's TDS must extend assistance to authorities in the PRD in order to help mitigate environmental problems that might inevitably affect Hong Kong in the long run.

As the PRD becomes more affluent, it may be able to carry out measures such as elimination of polluting industries, relocating such industries far from areas of population concentration, prohibition of industrial, manufacturing and housing developments in ecologically fragile or protected zones, and treating sewage and other effluents before discharging them to open bodies of water. If the PRD is able to achieve these environmental goals, Hong Kong might be able to escape the additional expenses that proper environmental management in its hinterland entail. This is crucial to Hong Kong because the territory already has serious pollution problems of its own in its highly congested inner core and central business district. The TDS should deal with these problems as a matter of high priority because, in the long run, the viability of Hong Kong as a human settlement and the place of Hong Kong as a key development node in the international arena depends on its ability to maintain an ecologically sustainable environment.

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THE WIDER PEARL RIVER DELTA REGION

3

Guangdong Development Scenarios

J. FIGUEIRAS

BACKGROUND

Since the introduction of China's "Open Door" economic policy in 1979, there have been striking changes in the type and rate of economic development in Guangdong Province. Hong Kong has played a major part in this development and the economies of the two areas have become closely inter-related. However, until recently, strategic planning in Hong Kong has tended to be undertaken without close reference to the increasingly significant developments within Guangdong and particularly the adjacent parts of the Pearl River Delta (PRD). With the imminent return of Hong Kong to Chinese sovereignty in 1997, the question of Hong Kong's future role in the wider context of South China has become an important issue.

The aim of the Study of Development Trends in Guangdong Province was to give guidance to Government on how to ensure that the Territorial Development Strategy (TDS) will support the continued prosperity of Hong Kong, by assisting it to respond positively to trends in Guangdong. Its function was essentially to help TDS to cope with the high degree of uncertainty associated with the future of Guangdong and Hong Kong's relationship with it.

SCENARIOS

The Study was an exercise in speculation. The development process which is so rapidly unfolding in Guangdong has many unique features, not the least of which is the special relationship which has been built up between Hong Kong and the PRD area. An adequate understanding of this process is beyond our reach at present. In these circumstances the most appropriate method of approach to strategic planning is through scenarios.

Scenarios are broad pictures of plausible possible futures. Where the future is particularly uncertain it can be useful to try to envisage the potential

range of futures and to assess how well alternative plans would be likely to cope with each of them. The most robust plans are those that could be expected to perform well under the widest range of plausible possible futures.

Scenarios relate to matters which may vary outside the planners' control. In many planning studies only one scenario is considered necessary. This usually takes the form of a set of assumptions about how the outside world is expected to behave. Multiple scenarios are relevant when the variation between scenarios are sufficient to lead to significantly different planning decisions being appropriate under different scenarios.

BASIC ASSUMPTIONS

It is impossible to conceive of a plan of action robust enough to cope with all possible eventualities. However, some possible circumstances can reasonably be ignored, not because they are inherently unlikely but because if they were to occur the whole basis for the proposed plan would be undermined. Major political upheavals fall into this category. Others relate to the economic and demographic assumptions underlying TDS. The following matters were taken as assumptions for the purposes of the study.

- i) China's current process of economic reform will continue more or less unchanged in the long term.
- ii) The handover of Hong Kong to China in 1997 will take place smoothly.
- iii) The boundary of the Special Administrative Region (SAR) will not change after 1997.
- iv) There will continue to be strong controls on the number of PRC citizens from outside Hong Kong permitted to work and to reside in Hong Kong.

SCENARIO DIMENSIONS

In building scenarios for the study, we identified elements of Guangdong development in which there could be plausible variations significant enough to affect choices that have to be made in TDS. These are as follows:

Economic Development

Two basic scenarios can be identified for the economic future of the Guangdong Province over the coming 5 to 15 years. These are not mutually exclusive but indicate a different emphasis in the form of economic growth in the Province.

i) High Growth/High Technology/PRD Scenario – The Rush to NIC Status

This scenario is characterised by an increasingly high-technology, high skill, high wage economy centred on the PRD, with the rest of the Province developing through various trickle-down effects. The Government of the Province actively encourages high-technology development and ensures that the vast majority of the constraints threatening the industrial economy are overcome. The PRD most probably drives the industrialisation of Southern China.

The active promotion of technology-intensive development and provision of appropriate physical infrastructure, especially excellent telecommunications and road and air transport links (both intra- and inter-regional) increase demand for a wide range of financial, business, technical and personal services in both Hong Kong and the PRD. Within the PRD, personal disposable incomes grow fast, leading to rapid expansion of personal services and the retailing and real estate sectors.

There are weaknesses in the Province which make such a scenario less likely. In particular, the lack of skilled labour will pose a significant challenge. Development of a skilled labour force is dictated to a large extent by central government planning and is therefore not under the Guangdong government's control. In the short term, the lack of skilled labour is unlikely to be overcome.

ii) Moderate Growth/Lower Technology/The Province-Wide Scenario – Maintaining a Steady Hand

This scenario is characterised by steady incremental growth and change in the economy. The continued development of consumer goods and light industries occurs across the Province. The Provincial Government emphasises a balanced economy with the development of domestic and intermediate industries. The various constraints besetting the economy are gradually overcome. The PRD maintains its pre-eminent position in the Province, but whether the industries of this area drive the industrialisation of all of South China depends very much on the interaction of the policies of the Province and Hong Kong.

Local capability to provide many of the corporate services is increasing, and demand for local provision will also rise as more of Guangdong's manufacturing firms are locally owned and managed. Consumer demand grows less fast than under the high growth scenario, but still substantially.

This scenario is more likely than the first. A more geographically balanced development will lend itself for greater sustainability. Capitalising on the strengths of the various components of the Guangdong-Hong Kong growth nexus may maximise growth in the long term.

Regional Development Mode

As Guangdong continues to develop and grow, the relationship between the Province and Hong Kong may become more competitive or more complementary with each other.

Fundamentally the region is faced with two strategic options.

- i) Competition. Each area protects its own corner, proceeding with development on generally separate paths and competing for labour, investment and markets; or
- ii) Regional co-ordination. Guangdong and Hong Kong together establish South China's growth triangle; co-ordinating development between Hong Kong and Guangdong, building on the strengths of each, growing faster than if relatively separated from each other, and competing with other regional economies, such as Singapore and Thailand, as well as other parts of China.

To be successful, integration must be accepted by private and public sectors on both sides of the existing border. The private sector has led the way to establishing integrated economies. It now may be necessary for government intervention to establish a framework within which these intertwined economies can continued to grow.

Urban Growth

The population of the PRD area, Hong Kong's immediate hinterland, is likely to increase from 23 million in 1990 to within the range 28 to 34 million by 2001 and 32 to 43 million by 2011. Clearly, the greater the hinterland population, the greater the potential market for Hong Kong's goods and services, taken in the widest sense to include air transport, education, tourism etc. However, it is not feasible to relate these potential market demands to particular levels of infrastructure or land requirements in Hong Kong for TDS.

The scale of urban development in the areas immediately adjacent to Hong Kong is a more relevant area of uncertainty. There are major

uncertainties about the likely long-term population of Shenzhen City. An increase in interaction between Hong Kong and Shenzhen is likely to develop after 1997 but the level of interaction can be expected to be roughly proportional to the size of Shenzhen.

The alternative scenarios suggested a range of population for Shenzhen from about 3 to 5.5 million in 2001 and from about 4 to 9 million in 2011, compared with the 1990 level of 1.7 million. Such a range of variation has important implications for the functional relationship between Shenzhen and Hong Kong, affecting which of the two might eventually be dominant in population terms. This could have important implications for the demand for cross border movement, for commuting to work, business, and leisure purposes. It could also affect the potential functions for the two cities' airports.

Two extreme scenarios can therefore be postulated:

- a) major development and population growth in Shenzhen, up to a population of 5 million in 2001 and 8 million in 2011, and
- b) moderate growth in Shenzhen, with a population of about 3 million in 2001 and 4 million in 2011.

Transport Infrastructure

A very extensive network of major new transport infrastructure is likely to be completed within this decade and should form the basis for any scenario.

From the point of view of Hong Kong, the most significant area of uncertainty in the way the Guangdong network may be extended is the possible construction of a road crossing of the Lower Pearl River. This will affect the ease with which Hong Kong can expect to serve the western side of the PRD, particularly in terms of attracting port and airport traffic.

There are therefore two key alternative development scenarios in relation to transport infrastructure:

a) No crossing of the Lower Pearl River in Foreseeable Future

Hong Kong's position in the PRD transport network becomes more and more that of a cul-de-sac. It forms one pole of a Guangzhou-Hong Kong axis along the east side of the PRD, but its links with the south west part of the PRD, including Zhuhai, Macau and Gaolan, are long and inconvenient.

Table 3.1 The Four Most Probable Scenarios

Dimension	Guangdong/Hong Kong scenarios			
	1 Regional Co-ordination	2 Competition: No LPRX	3 Competition: LPRX	4 Guangdong Fast Growth
Guangdong Economic Development	Moderate growth of Guangdong	Moderate growth of Guangdong	Moderate growth of Guangdong	Guangdong rush to NIC status
GD/HK Regional Development Mode	Co-ordination	Competition	Competition	Competition
Transport Infrastructure Link	LPRX	no LPRX	LPRX	LPRX
Shenzhen Development	Moderate growth at Shenzhen	Moderate growth at Shenzhen	Moderate growth at Shenzhen	Moderate growth at Shenzhen
Subjective Probability	Medium High	Medium	Low	Low

b) Lower Pearl River Crossing

Hong Kong's bi-polar relationship with Guangzhou is enhanced by the vastly improved links with the south west part of the PRD, including Zhuhai, Macau and Gaolan.

SCENARIO COMBINATIONS

This list of scenario elements clearly represents a gross simplification of the potential Guangdong futures affecting Hong Kong. However, in most of these dimensions, one of the alternatives can be considered the basic or trend scenario, while the other represents a significant deviation from the trend. On this basis they can be combined in various permutations. The various permutations are built up by adding one dimension at a time. Where different combinations are considered plausible, subjective probabilities of each were identified.

The four most plausible combinations are shown in the table below, in decreasing order of probability. The most favourable scenario was considered to be scenario 1.

IMPLICATIONS FOR HONG KONG

The types of impact potential developments in Guangdong may have on TDS can be divided into two categories:

- a) Those affecting the scale and timing of activity or development in general or in a particular location as follows:
- function and rate of expansion of the port
 - function of the airport
 - scale of requirement for port back-up
 - use of obsolescent industrial areas in Metro
 - environment impacts

Table 3.2 Alternative Option Clusters for TDS

Elements	Option Clusters		
	Option Cluster A (preferred)	Option Cluster B (No Western Rail Corridor)	Option Cluster C (No Route Y)
Roads link to GD	Route Y	Route Y	No Route Y
Rail link to GD	Western Rail Corridor	No Western Rail Corridor	Western Rail Corridor
High-tech industry corridor	North-south	either	North-south
River trade distribution centre	Neilingding Island or Tuen Mun West	Neilingding Island or Tuen Mun West	Tuen Mun West
Rail freight distribution centre	either Pinghu or NT	neither	either Pinghu or NT
Residential development in north NT	Additional	No additional	No additional
Eastern border crossing	Yes	Yes	Yes
Lok Ma Chau rail crossing	Yes	No	Yes
Shekou to Tin Shui Wai rail crossing	Yes	No	Yes

- b) Those affecting a choice between discrete alternatives, such as the geographical location for a facility, development area for a land use, or alignment for a route, as follows:
- capacity of strategic road corridors between Hong Kong and China
 - capacity of strategic rail corridors between Hong Kong and China
 - capacity of border crossings
 - location of high technology industry
 - location of river trade distribution centre
 - location of rail freight distribution centre
 - residential development in northern New Territories

In relation to each of these issues, the study identified a number of options relating to various key infrastructure elements that Hong Kong is likely to need in order to strengthen its economic position in the PRD, assessed their relative advantages and disadvantages, and showed how their performance might vary under different underlying scenarios. These individual options were then grouped in clusters of options for consideration in TDS. The main elements of these cluster of options is shown in Table 3.2.

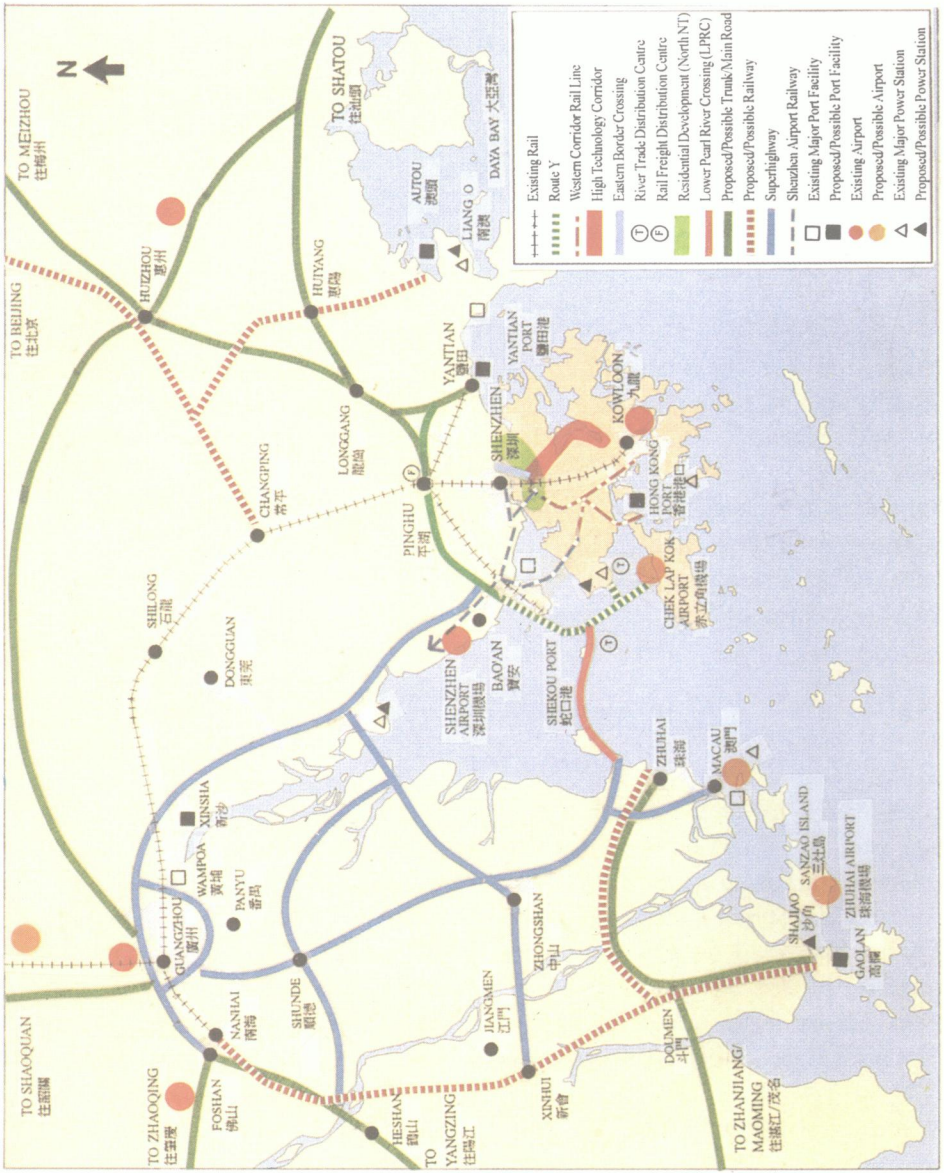
CONCLUSIONS

All the option clusters considered above function best under scenario 1, which is clearly the most favourable scenario for Hong Kong and its relationship with Guangdong. Scenario 1 was assessed as having a high probability.

Option Cluster A (Figure 3.1), with its key elements Route Y and Western Rail Corridor (WRC), is the most advantageous and robust of the option clusters. As well as offering the greatest benefits under the most probable scenario, it provides the maximum scope for Hong Kong to achieve the TDS aim for the territory under the more unfavourable scenarios.

The possibility of integrating the major elements of the selected option cluster in the TDS preferred strategy should be considered in the final stage of the TDS Review process.

Figure 3.1 Option Cluster A



4

Building Guangzhou into a Modern International Metropolis

DAI Feng

Since Guangzhou is adjacent to Hong Kong and its development are closely related to that of Hong Kong, the planning and development of Guangzhou, especially during the trans-century period, is therefore important for the planning of Hong Kong in the 21st century.

In 1989, we began to prepare Guangzhou's comprehensive plan for the trans-century period. In light of the original Guangzhou comprehensive plan approved by the State Council in 1984, we restructured, substantialised and refined it with a general objective of building Guangzhou into a modern international metropolis by the year of 2010.

DEVELOPMENT SCALE AND ORIENTATION OF GUANGZHOU CITY

Guangzhou is the political, economic and cultural centre of Guangdong Province. It is one of the famous historical and cultural cities in China and one of the centres which has close contacts with foreign countries in terms of economic transactions and cultural exchange. With the formation and development of the "Pearl River Delta-Hong Kong-Macao Economic Ring", a relationship of mutual promotion and mutual prosperity among Guangzhou, Hong Kong, Macao and cities around them is becoming more and more obvious. Functioning as a central city, the role of Guangzhou will be further strengthened.

Based on the nature and status of the city, the overall development objectives for Guangzhou are set out as follows:

- To establish a powerful and comprehensive economic strength, so as to be equal to the moderately developed countries and regions in Asia in terms of economic and social development.

- To generate a rational industrial structure in which tertiary industries are highly developed; the first, second and third industries are well co-ordinated and the other six important industries (the high-technology light industry, traffic and transportation, commodity circulation, finance and insurance, construction and real estate and tourism) function as pillars as well.
- To build Guangzhou into a modern international metropolis which is capable of emitting its strong radiative power to different places, providing an excellent infrastructure system and an advanced scientific and technological educational base, and creating a beautiful city environment fully characterised with the features of South China for people to lead a rich and comfortable life.

With the requirements of these overall development objectives and a moderate increase of city population and floating population, the developed land in Guangzhou will increase from 215.7 sq.km. in 1994 to 555 sq.km. by the year of 2010, assuming the implementation of all the planned developments.

The population scale is to be controlled at 4.6 million with a permanent city population of 4.13 million.

The city's developments are directed mainly to the east, southeast and northeast. Proper development in the northwest has been considered, but the protection of water resources is the prerequisite to any of the development projects. Guangzhou will continue its eastward development along the Pearl River Delta. In this direction, Tianhe industrial development zone, Dashadi city sub-centre in Huangpu, Yunpu development zone will be the focal points of development. Moreover, Guangzhou Economic and Technology Development Zone will carry on its development till consummation. In the south, the city will extend along the Guangzhou Dadao up to the northern bridge-head of the Luoxi Bridge. The two development emphases are Xinzhou Development Zone in Haizhu District and Gongye Dadaowei Complex. As to the southwest, the city will stretch out along Guangzhong Highway to Erweihe in Fangcun District. Emphases are given to the development of Dongsha development zone and Fangcun processing zone. Besides, the city will sprawl to the north where Jianggao town, Shenshan town and Yayao town are located. The focus of development on this big piece of land is Catou industrial zone in Shijin. A subcentre, relying largely on Jianggao town, will take shape in the northern part of Guangzhou.

To further improve the city's structure and to consolidate the function of Guangzhou as a central city, Guangzhou will reorganise its city spatial

structure system. The proposed spatial structure is organised like a L-shaped network which is dotted with many conglomerates, with the existing city proper as a centre and Pearl River and city arteries as axes. The city proper areas (including Yuexiu, Dongshan and Liwan Districts), Tianhe District, Haizhu District and Fangcun District are grouped into a central conglomerate which functions as the political, economic and cultural centre as well as a centre for sports and foreign transactions. This conglomerate will provide comprehensive services for industries, harbours and residents.

The three smaller conglomerates, Dashadi sub-centre, Yunpu development zone and Guangzhou Economic and Technology Development Zone, join to form the big eastern conglomerate. By integrating with Guangzhou Economic and Technology Development Zone, this conglomerate will be developed into industrial areas, harbours and warehouses.

The big northern conglomerate consists of three smaller conglomerates, namely Shijin and Catou conglomerate, Longgui Taihe conglomerate and Yayao and Jianggao conglomerate. The first condition of development in this conglomerate is to strictly protect water resources from being polluted. Therefore, only low-density residential projects or non-polluting projects are permitted.

READJUSTING INDUSTRIAL DEVELOPMENT STRATEGY AND LOCATIONS

According to the requirements and standards of building a modern international metropolis and the policy of pushing tertiary industries to a higher level, restructuring and improving secondary industries, and stabilising and strengthening primary industries, the whole industrial structure is to be reorganised. Industries, which are intensive, conservative in energy and water, generating less sewage and less freight volume are encouraged. Regarding industrial land use distribution, further physical expansion of industries in the existing city areas will be largely confined. On the other hand, developing a complete and large industrial park on a large piece of land where many enterprises are concentrated will be one of the future development targets.

In the industrial layout plan, the Southeast Region Economic Development Zone has been defined as an important industrial region of Guangzhou in the next 15 years. The objective is to build this southeast region into a large international comprehensive development zone which is characterised by hi-tech industries, export-oriented industries and highly developed tertiary industries. It is, in other words, an internationalised,

standardised and market-based new zone. Within this region, the city will focus on the development of the following places:

- Guangzhou Economic and Technology Development Zone;
- Yunpu Industrial Zone;
- Tianhe Hi-Tech Industrial Development Zone;
- Dashadi Development Zone in Huangpu;
- Xintang Processing Zone;
- Lianhuashan Processing Zone, and
- Nansha Economic and Technology Development Zone.

Besides, it is necessary to accelerate the organisation and construction of some other places like the northeastern part of Yaiyun District, Fangcun District and the northeast mountainous areas. The development of the two satellite towns, Shiqiao in Panyu and Xinhua in Huadu, should also pick up a higher speed. In this way, a number of new towns will take shape.

SPEEDING UP REDEVELOPMENT OF THE EXISTING AREAS AND DEVELOPMENT OF THE NEW ZONES

Development of new zones must be integrated with redevelopment schemes. To speed up the development of new zones is, after all, to expedite the redevelopment process. When new zones are built, population of the existing areas can be dispersed. As a result, living environments and living standards can be improved.

The living space of Guangzhou citizens will increase from 8.92 sq.m./person in 1993 to 15.5 sq.m. by the year of 2010. Every household will have a well-facilitated apartment. To fulfil this objective, Guangzhou needs to build 70 million sq.m. of new houses with an additional 20 million sq.m. for all kinds of living service facilities. The development and construction of new zones will be carried out in each of the conglomerates as planned. In the near future, priority will be given to the following new zone development projects:

- Pearl River New City Centre (Tianhe District);
- Tangxia Residential Community for families with housing difficulties;
- Hengsha Complex (Baiyun District);
- Datansha Island North Residential Community;
- Datian Low Price Housing Village (Jianggao Town);
- Ersha Island Residential, Cultural and Tourist Complex (Dongshan District);
- Xinzhou Development Zone (Haizhu District);

- Chegang Consulate Area;
- Zhujiang Qiaodu and Qiaoxi Residential Area;
- Luoxi Bridge North Complex;
- Huadiwan Residential Area (Fangcun);
- Pearl River Bridge South Residential Community, and
- Dashadi Sub-Centre (Huangpu District).

In addition, some development projects will be carried out in the existing areas soon. They are:

- 25 real estate development projects along Zhongshan Road and the subway line;
- development projects along Dongfeng Road;
- opening of Baogang Road and Zhengan Road and the alongside renewal;
- business complex area renewal from Haizhou Square to Xiti;
- Dexin Road redevelopment, and
- redevelopment of residential communities along Dongfeng Road and Jinhua Street.

In light of the city's comprehensive development schemes, a group of modern public facilities are planned to be built.

- 1) To improve the classification and distribution of the city commercial facilities, major considerations have been given to the following twelve large shopping centres:
 - Guangzhou Department Store (to be continued);
 - Dongshan Commercial and Trading Shopping Centre;
 - Dongshan Department Store (to be extended);
 - Fangcun Shopping Centre;
 - Haizhu Shayuan Shopping Centre;
 - Huangpu Yugang Shopping Centre;
 - Tianhe Shopping Plaza;
 - Xiti Commercial Area;
 - Guangzhou International Fair, and
 - Nanhu Tourist Resort and a group of large tourist business facilities.
- 2) Efforts will be devoted to foster culture, education, sport and health. In addition to the 65 existing cultural and recreational facilities, 50 theatres/cinemas, three district libraries, two Children's Palaces, 20 cultural recreational centres, Guangzhou Natural Museum, Natural Science and

Technology Museum and the like will be developed. In addition to the above stated facilities, some specialised museums presenting local history, culture and art, groups of sculptures, artistic buildings and structures, and monuments to famous persons will be built. All these items are to be completed by the year of 2010.

In terms of education, 100 new primary schools and 75 middle schools will be built. By the year of 2010, the compulsory nine-year basic education system will be popularised in Guangzhou, so one or two sports centres occupying ten hectares of land shall be provided by 2010. When new zones are developed, there must be some more sports facilities provision for the public.

Guangzhou has worked hard to improve its medical and health facilities. Twenty comprehensive hospitals with 400 beds, each with a range of medical treatments and health facilities, and several elderly houses will be built.

BUILDING HIGH-STANDARD CITY INFRASTRUCTURE

A high-speed and convenient transportation system is an essential symbol of a modern city. It is one of the key issues of the new comprehensive plan. The objective of road/transportation planning is not only to improve existing transportation conditions, but is also to prepare and reserve land for future city extension and formation of the three large conglomerates.

From present days to the early years of next century, Guangzhou will have a city road network consisting of 21 city arteries, 45 secondary roads, two ring roads, two semicircular roads in the north periphery, three expressways radiating to the east and to the north, and 16 outbound roads. Road spaces will increase from 13.78 million sq.m. at the end of 1993 to 62.7 million sq.m. by 2010, with an average figure of 12 sq.m. per capita.

Guangzhou is enthusiastic at developing rail transportation. By the year of 1998, No.1 subway running from Fangcun to Tianhe (an east-west line) will be completed. Other rail construction proposals in the comprehensive plan include No.2 subway from Shima to Xinzhou (a north-south line), No.3 subway from Tiyuxi Road to Xinzhou, which serves as a connector between the No.1 and No.2 subway terminals, No.1 light-rail from Tianhe to Huangpu Economic and Technology Development Zone and Yunpu Industrial Development Zone, and No.2 light-rail from Shima to Renhe which will connect with the new Guangzhou International Airport. By the year of 2010, the total length of subway and light-rail will be 101 km. Simultaneous to the aggressive rail development, the development of public transportation,

including buses and trolley-buses, is also forging ahead. The coverage of public transportation routes will be up to 80% by the year of 2010. A multi-level transportation network, being composed of a variety of traffic modes, namely metro, buses, taxis and vans, will come into being by the year of 2010. Under this transportation system, rapid rail transit is the primary force; regular buses and trolley-buses are the secondary modes; and taxis, big vans and small vans are serving as a supplementary force.

The development of outbound transportation in Guangzhou will be speeded up. In 1993, the volume of freight handled by Guangzhou Harbour was 65.52 million tons. Among its 127 berths, 22 are deep water berths which can accommodate ships of 10,000 tons or more. To build Guangzhou Harbour into a modern, multifunction and international harbour capable of handling freight of hundreds of million tons, it is necessary to reorganise and develop itself on the basis of its rich resources, bringing its pivotal role into full play. By the year of 2010, its handling capacity will be 116.5 million tons owing to the additional 26 deep water berths. Xinchui Harbour and Nansha Harbour will be developed vigorously; Erwei port, Fangcun port, Yancun port, Huangpu harbour will be renewed. Besides, some international or domestic passenger docks like Zhoutouzui and Dashatou will be comprehensively developed.

Guangzhou will intensify the development of railway and its accessories, trying to bring its pivotal role in railway transport into full play and increasing the city's overall transport capacity. Several goods yards, including Dalang, Shipai and Nangang, and Jiangcun marshalling yard, are to be extended. Priorities are given to the sub-express railway from Guangzhou to Shenzhen and Tianhe (Guangzhou) railway station. Tianhe railway station has seven passenger transit tracks and five passenger platforms where 55 pairs of trains will be running in each direction per day. The station has a maximum passenger capacity of 100,000. Besides, a third railway station at Shanyanqiao (Fangcun) and a fourth railway station at Xinjie (Huadu) are proposed to be built. By adding and extending rail lines, stations and other accessories, goods distributing volume will increase from 30.57 million tons in 1992 to approximately 136.76 million tons by the year of 2010. There will be 175 pairs of passenger trains running in each direction per day.

The new international airport will be located to the north of Renhe town and to the east of Longkou town in Huadu. It is going to be a modern international airport which has extensive functions and all the necessary fittings, as well as a great handling capacity. The total area land it covers is 153.03 sq.m. The capacity will be regarded as maximum when three runways

are in full operation. The airport is designed to have a passenger capacity of 80 million people per year. This project is at present under the stage of preparatory works.

According to the city's comprehensive plan, Guangzhou is to increase the pace of infrastructure development, including the provision of electric power, communication, water, gas and sewage, since they are all closely related to the daily lives of the citizens. Therefore, priorities are given to the following projects:

- 1) The A and B parts of Pearl River Power Plant, Hengyun Power Plant, Yancun Power Plant, and a complete power network of three different levels: 500 kV, 200 kV, and 110 kV. These projects will then increase the consumable load from the current level of 1.484 million kV to 14 million kV by 2010.
- 2) The total volume of water supply will be 2500 million tons by the year of 2010. The daily supply capacity will be 5.51 million tons which can be translated to an average amount of 500 litre/person/day. Therefore, four existing water plants, Jiancun, Shima, Xintang and Shixi, will be extended and four new ones, Xiaozhou, Datian, Xizhou and Zhendun, will be built. New water resources are under investigation and will be utilised when they are scientifically verified.
- 3) In terms of civil gas, Guangzhou is going to tap new gas resources while speeding up the development and equipment of its gas station. It is going to introduce foreign funds to quicken the step of gas supply (including building liquid gas supply centres for residential communities) by means of co-operation or joint ventures. By the year of 2010, gas will be available for 98% of the city households, most of the commercial organisations as well as some industrial enterprises.
- 4) In respect of sewage treatment, Guangzhou gives priority to the construction of sewage treatment systems and projects and encourages the collective treatment method of sewage treatment. In the near future, the extension of Datansha Sewage Treatment Plant will be completed and thus increasing the disposal capacity up to 300,000 tons per day. Luede new sewage plant, having a disposal capacity of 600,000 tons/day, will be added to the system. Other sewage plants in Lijiao, Xilang, Huangpu and the one specialised in treating oil sewage of the harbour are proposed. The percentage of city waste water treatment will increase from 11.67% in 1992 to 60% or more in 2010.

PROTECTION OF CITY ECO-ENVIRONMENT

Key targets of the city environmental protection are:

- To protect the city's environmental and ecological system from being contaminated and damaged, thus improving the eco-environment significantly.
- To improve the environment, so the 20 key indices of environment quality can reach the national standards.
- To establish a positive feedback cycle between a well-protected city environment and the socio-economic development of the city.

City environment protection is one of the key issues of the Guangzhou comprehensive plan. By the year of 2010, the coverage of the green areas in Guangzhou will increase from 31.68% in 1993 to 40%; the percentage of greenlands within built-up areas will also increase from 26.6% in 1993 to 35%; public green space will increase from an average of 5 sq.m./person to 10 sq.m., and the number of public parks will increase from 36 in 1993 to 102.

Development emphases are placed on the following parks and areas:

- 1) With the objective of improving the city's eco-environment, Guangzhou is to establish a large-scale and multi-layered city ecological system in which White Cloud Mountain Landscape Area and Nanhu Tourist Resort will be the core. Green belts will be designated along major city roads and river banks (Pearl River and Liuxi River). Moreover, an orchard protection zone and a flower protection zone are proposed to be established in Haizhu and Fangcun Districts. All these will form a multi-level greenery system, consisting of small dotted areas, lines and open spaces.
- 2) In new residential communities, according to the 1000 to 1500-metre social service radius and the land use distribution rule of 20 to 50 hectares, 66 new city parks are to be constructed, taking up 30% of the total land use.
- 3) According to the comprehensive plan, Taiyan Dao Scenic Spot and Nanhu International Tourist Resort are to be extended while Changzhou Dao historical and cultural tourist spot is to be rehabilitated.
- 4) Three sections of land within the planned development areas are defined as vegetable lands, two of them are at the bank of Liuxi River and one is

at the southwest of Fangcun District, covering a total area of 3.3 sq.km. Any deficiency of such land use will be accommodated in outer suburbs or intermediate suburbs. Plant nurseries in central city areas will gradually be transformed into parks.

- 5) Green belts will be set up around city roads. The green coverage of city arteries in newly developed zones should be no less than 25%, and for secondary roads, no less than 20%.
- 6) The city has planned to designate a green belt of 100 to 300 metres wide on each side of Liuxi River in order to protect the water resources and improve the city's environment.

By all these efforts, Guangzhou will become a true "Flower City" with green plants and beautiful flowers everywhere.

By the year of 2010, Guangzhou will be able to bring the city's environment under control and protect it from being polluted by garbage and excrement. According to the plan, two existing garbage disposal fields, Datian Shan and Likeng, will be expanded. The proposed Jinkeng disposal field, a new and a larger one, will cover a land area of 3,500 mus (233 ha) with a handling capacity of 70 million cubic metres. Five more garbage incinerators, having a daily capacity of 500 to 1,000 tons, two more medical waste incinerators, and one large and five small garbage compressing stations are planned. Thirteen car washing stations will be built at the exit and entry points of the city. Indoor garbage collection stations will be promoted and garbage will be classified and collected in bags. By the year of 2010, 90% or more of garbage and excrement will be harmlessly disposed.

Great efforts will be put to protect three major water resources, Liuxi River, East River and the water resources in southern Guangzhou which are going to be developed and utilised. Before new water resources are scientifically verified and used, development projects will be mainly guided to the southeast area. Large development project in the northwest area, adjacent to the Liuxi River, are prohibited. Within Liuxi water protection zone, industrial projects with polluting potentialities, storehouses of poisonous or pernicious articles and any facilities which may contaminate water resources are all prohibited. The development of the northwest area will be approved only when "Guangzhou Drinking Water Resources Protection and Pollution Prevention Regulation" is strictly observed.

Big enterprises polluting the environment must rectify and renovate their problemcausing systems. Comprehensive measures to close, stop, merge,

transform or relocate polluting enterprises are adopted especially in the existing city areas to hinder further pollution by the enterprises. By the year of 2010, all environment quality indices of the city should be able to reach the national standards.

CARRY FORWARD THE CITY'S HISTORICAL STYLES AND FEATURES

Guangzhou is a famous historical and cultural city with a history of over 2000 years. Its development and construction should combine the style of a modern international metropolis and the style of its local culture and features which reflect its rich historical and cultural tradition.

White Cloud Scenic Spot and the waterfront of Pearl River are the major areas for developing and preserving the local city style and features. Within the absolute protection zone of White Cloud Scenic Spot, development schemes which make no contribution to tourism are not allowed to be implemented. Organisations or residents who have settled in the area without authorisation must move out within a specified period of time.

Pearl River, an important river of Guangzhou, does not only serve as a river for goods transport, water supply, flood drainage and farm irrigation, but also for scenic tours. The major task that the city shall undertake to protect the river is to solve the pollution problem. The whole waterfront area is planned and classified into uses such as goods transportation docks, tourist areas, green belts and natural shore. All docks, including floating piers and seafood restaurant boats must be demolished or moved out from the waterfront except some of the existing public ferry docks. The decoration of the Pearl River waterfront, by landscape gardening or by setting up green belts and public squares or sculptures, must be integrated with the development of Shamian, Jiangwan New Town, Dashatou New Harbour Area and Ersha Island, which are all situated at the waterfront.

To preserve and develop the traditional city axis and the new city axis is another mission of the city. The traditional axis starts from Haizhu Square, goes along Qiyi Road and ends at Zhongshan monument high up in the Yuexiu mountain. Some memorial buildings like Renmin Park, Municipal Building and Zhongshan Memorial Hall are just located on this traditional axis. Moreover, Beijing Road, Zhongshan Four and Five Road, Shang-Xia-Jiu Road, Xiguan business district and the arcades can very well represent the city's historical style and the South China features.

The new city axis begins at Tianhe Railway Station, goes through Tianhe sports centre and Pearl River New City Centre, and terminates at Chigang

Overseas Chinese Town. Many modern business, financial, trading and office buildings, which are built according to international standards and displaying different architectural styles, are dotted on this axis. Greenlands, squares, sculptures and city landmarks are especially planned and arranged among these buildings, creating a special style of a modern metropolis.

The architectural design, style, colour and quality of new buildings in the city areas will be strictly supervised to ensure that they are in harmony with the existing surroundings. The art of city sculptures should be upgraded and street landscapes should be elaborately designed. Ornamental flower beds are to be planted in major city parks and greenlands in residential areas. A movement of "Creating Beautiful, Clean and Green Model Streets" has been launched by the city. At the same time, the protection and rehabilitation of the cultural relics has been taken into serious consideration.

Guangzhou is going to create and develop more and more new tourist scenes to enrich the city's natural and human landscapes. Guangzhou, as an old historical and cultural city, will then have a stronger appeal to visitors and guests from home or abroad.

CONCLUSION

It is an arduous task to build Guangzhou into a modern international metropolis. However, Guangzhou citizens are resolute and confident in completing the task. I hope that the planning of Hong Kong toward the twenty-first century will consider the status and functions of Guangzhou city so as to fully utilise the favourable conditions and advantages of both cities. With vigorous and harmonious co-operation between the two cities in urban development, a prosperous future of the South China region can be anticipated.

5

Planning of Shenzhen in the Pearl River Delta Context

SUN Huasheng

INTRODUCTION

Having promulgated successively by the State Council, Shenzhen Economic Zone (SEZ) was established in 1980, the Pearl River Delta (PRD) was classified as one of the three “open-door regions” in 1985 and Guangdong Province (GP) was assigned as a “comprehensively experimental region” for system reform in 1988.

The reform and open-door policy have thus been implemented in a gradual manner and approach. The preferential policies and treatments for both foreign investment firms and hinterland corporations in Shenzhen have preceded those of the PRD region, while the latter has preceded those of GP.

Except the policies and initial capital from the central government, Shenzhen and the PRD region are more advantageous than other places for economic development because they border and neighbour on Hong Kong respectively. The close relationship between Shenzhen, the PRD region and Hong Kong has been enhancing in respect of economic growth and urban development. More and more planners, officials and even ordinary people in Shenzhen recognise the importance and necessity of that relationship.

Earlier in the 30s to 40s, some researchers began their works on the PRD, such as Mr. Wu Shangshi’s article “On the PRD” in *Ling Nan Journal* (South of the Five Ridges) published in 1947. In the past decade, many scholars, including those in Hong Kong, did significant studies on the PRD issues. So it is inappropriate for me to make prolix remarks on the same topic. I would rather focus on a wider topic, which is the sustainability of Shenzhen’s future development.

SUSTAINABILITY OF FUTURE ROLE

As the only city in China with sea, air and land ports, Shenzhen is functioned as a southern gate of China. It facilitates sails setting from the PRD region and also serves as an entrance to China's huge market. Its function is featured as a joint hub with Hong Kong on a route from mainland to overseas. It has been pursuing the goal of becoming an export-oriented economy.

Shenzhen SEZ is not simply a processing industrial zone for export but an epitome of China's development. It serves as a precedent for other potential cities by experimenting the operation of a market economy which is intended to achieve an overall improvement of the urban society.

In the past 14 years, the development of Shenzhen SEZ went through its two stages: the first is establishing a base and the second is shaping an urban structure. It is now entering the third stage of increasing the economic efficacy, improving the qualities of physical and social environments, as well as raising the level of administrative ability. In parallel with physical development, urban software like the legal system and the rule by law must be strengthened in the process of promoting economic growth.

In September 1994, Mr. Xie Fei, the Politburo member and the Secretary of GP Committee of CCP made a few important remarks regarding the PRD development, which are highlighted as follows:

- 1) Distinctive guidelines and requirements are made by GP Committee to direct the development of the PRD, mountain area, as well as the east and west wings of GP.
- 2) The successful modernisation of the PRD region should act as a precedent for the modernisation of other cities within GP.
- 3) Five issues must be considered seriously:
 - a) An economy generated by high-tech industries should establish itself upon high quality and efficiency in production;
 - b) A rational division of work should be achieved within the PRD in which primary, secondary and tertiary industries are distributed appropriately;
 - c) Modernised networks of superhighways, information highways, air terminals and seaports should be taken shape on the level of big economic regions and large cities, based on the principle of merging cities and countryside into an organic whole to keep the channels unobstructed for both import and export transit;

- d) New administrative mechanism should be formed to promote regional economic development, in replace of local protectionism which is confined to the context of authorities' jurisdictions;
 - e) Economic co-operation must be encouraged for a closer relationship between the PRD region and other provinces and cities, including Hong Kong and Macau.
- 4) Cities in the PRD region must make their efforts to win a "team title" in the all-round competition against other coastal cities.

The above remarks were then taken by the cities in the PRD region who began their socio-economic and urban planning works with the regional concept which helped to co-ordinate overall development in the PRD. The Government of GP has been conducting the whole event.

A city belt around Pearl River Estuary are taking shape which will impose a positive future impact on the Asian-Pacific region (Figure 5.1). The transformation of the PRD region from a traditional planned economy to a socialist market economy, and also, from a domestic to an export-oriented economy was basically completed. The GDP percentage in the PRD region accounted for 2.5% in 1978 and 6% in 1993 of the whole China. It was actually a figure exceeding the total GDP of Beijing plus Tianjin. The development of the PRD is now entering the phase of overall modernisation characterised by urbanised growth poles and gradually enriching information networks.

According to the above strategy and the existing conditions of the PRD, we can outline what Shenzhen should do and how it will be done within the PRD context in the 21st Century.

Due to the physical linkage of Shenzhen with the PRD, the PRD will become the supporter/provider of natural resources for the city. More places within the PRD area can be designated as experimental grounds for both the adjustment of primary to tertiary industries and economic system reform, which are first practised at Shenzhen. High-tech industries and education will be easily facilitated by the conveyance of qualified personnel and facilities from the PRD region to Shenzhen.

By the end of 1994, the main indices of economy of Shenzhen are shown in Table 5.1:

Almost 80 multinational corporations have already invested 1.3 billion USD in Shenzhen on manufacturing industries and commerce. More than 20 big corporations and more than 20 banks from Hong Kong, Macau and overseas established their branches in Shenzhen, of which 25 were listed in

Figure 5.1 Existing City Belt with Surrounding Economic Corridors

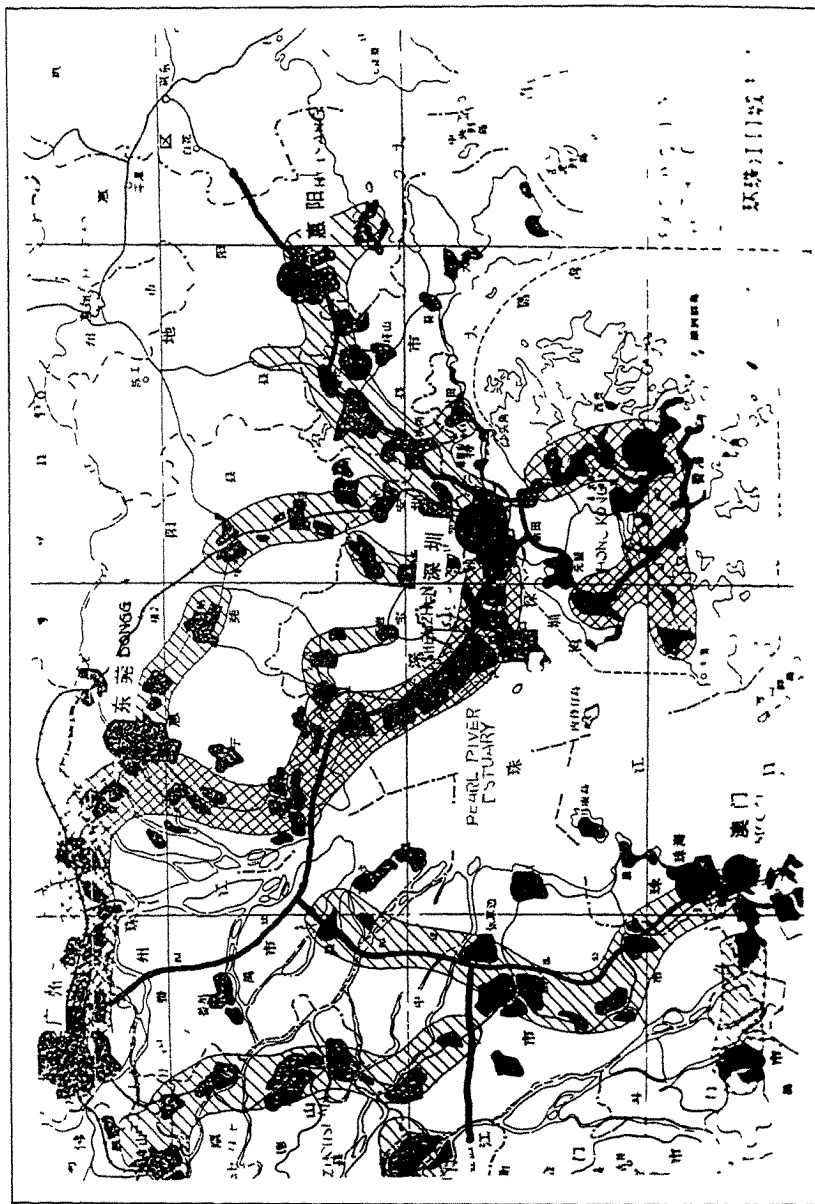


Table 5.1 Economic Indices of Shenzhen in 1994

Item	Value (billion RMB)	Increase Rate to Previous Year (%)
GDP	56 0	27 9
Industrial Output	84 7	30 9
Gross Export	18 3 (USD)	28 8
High-tech Products	13 0	
Investment to the Hinterland	10 0	
Tax Revenue	3 7	68.3

Source. Statistics Bureau of Shenzhen (1995)

US Journal FORTUNE among the 500 largest ones (Shenzhen SEZ Daily, 1994).

With reference to the aforementioned aspects, Shenzhen was designated a specific role in both Shenzhen socio-economic plan and urban comprehensive plan. The future role of Shenzhen will be one of the centres of finance, trade, information, high-tech industry and freight circulation in the PRD area. In the future, Shenzhen will likely become a world seaport city located along Hong Kong-Guangzhou world metropolitan belt. Moreover, together with Hong Kong, Shenzhen will probably emerge as a cross-bordered world megalopolis.

To function as a “window to the world”, Shenzhen must continue to rely on the powerful backing of its hinterland, especially the PRD region. As an experimental base, Shenzhen must still precede other cities on system reform in accordance to international practice.

SUSTAINABILITY OF DEVELOPMENT CONDITIONS

Policy Aspect

If comparing Shenzhen with the PRD region, one may find out that the preferential and other open-door policies being enforced are quite similar. Those policies are no longer special only to Shenzhen. Under such circumstances, Shenzhen has to concentrate its efforts on giving full play to the city’s new functions to sustain its vitality. The main task will be keeping the precedence of Shenzhen on experimenting operational mechanism of new systems.

Table 5.2 Rates of Increase (%) of Main Economic Indices (Shenzhen and Shanghai)

Cities	GDP	IO	Retail Sale	Local Revenue	Investment on Fixed Assets	Foreign Investment
Shanghai	14.9	18.3	33.5	30.6	90.5	100.0
Shenzhen	30.3	36.6	38.8	56.5	38.3	97.7

Source: Economic Planning Bureau of Shenzhen (1994)

Someone has raised a question: "Is Shenzhen still special when there is an upsurge in the development of Pudong in Shanghai?"

I personally incline to answer this question from a wider vision of the whole China. Since the interrelationship between Bohai, Changjiang and Pearl River Deltas is complementary, the distribution of these three polar regions mean to improve the balance between east and west, south and north China. Shanghai is located within Changjiang Delta. Its orientation toward overseas is spurred on by the prosperity of east China and areas along Changjiang golden water course. Each of the cities, Shenzhen and Shanghai, has advantages of its own. Shenzhen excels at its ports of multi-category, its physical linkage with Hong Kong, and its precedence on system reform and experiments on operational mechanism, while Shanghai is advantageous at its strong foundation on manufacturing, well-trained personnel, science and technology, and education and administrative level.

The rate of increase of some economic indices of Shanghai and Shenzhen are listed in Table 5.2:

Being confronted with the current economic situation, Shenzhen might at least jump out from the mode of thinking-only, that is, relying upon special policies granted by the central government. It should rather tap its latent power, give rein to its internal force and speed up the upgrading of its industrial structure and administrative hierarchy. In this way, it will continue to be "creative" and participate actively in the international co-ordination and competition.

Economic Aspect

Economic system reform in Shenzhen is now and henceforth focusing on finance and banking, enterprise ownership and market mechanism.

An unique plan for the PRD will certainly lead to a requirement of rational distribution of industries to form a PRD regional economic community, with a framework of large-scale production, circulation and market system. Within the context of the PRD, the current situation of Shenzhen is relatively less competitive than other cities due to its higher prices in land leasing, public utilities and the wages of workers. Therefore it is no longer sensible to further develop those labour-intensive industries in spite of their great contribution towards Shenzhen's initial prosperity.

With the existing base of industries and its appeal for professional personnel, high-technology industries in Shenzhen will probably rise in the future. On the other hand, traditional industries are expected to gradually move out of the limited space in the Special Zone to Long Gang Large Industrial Base (Pinghu and Kengzi areas) and to modify their outmoded parts, if necessary. In fact, there were already a few enterprises voluntarily moving their factories to Bao An, Long Gang Districts, and even to somewhere within the PRD region. Tertiary services and high-technology industries will then be arranged for those vacant spaces.

To date, 55 factories in Shenzhen are already identified to be high-tech enterprises. They are generating computer products with an annual value of 4.2 billion RMB. Those products include software, liquid crystal kinescopes and program control switchboards. They respectively amount to a third, 90% and a third of the corresponding national exports. The production of fibre wire is even ranked the second place in the whole China. The production in the field of telecommunication, mini-electronics and biotechnic engineering, as well as products like new materials, new types of energy and laser components are other examples of high-tech production in Shenzhen. The future goal of manufacturing will continue to focus on developing the above industries and generating products for information highway, equipment for office automation, colour TV and other products of light industry.

The main economic indices estimated from the socio-economic development statistics and the revised urban comprehensive plan are shown in Table 5.3.

Along with frequent economic activities in and through Shenzhen, there have already been a few spatial corridors accommodating freight traffic, informational transmission, and capital and personnel flow. Furthermore, the PRD region is demanding some new spatial corridors which have already been arranged in the revised comprehensive plan (Figure 5.1). One is the western corridor, functioning as a major route for promoting prosperity along the east bank of Pearl River Estuary. It will coincide with the growth of the future world metropolitan belt. The other two corridors extend

Figure 5.2 Regional Arrangement of Yantian Seaport

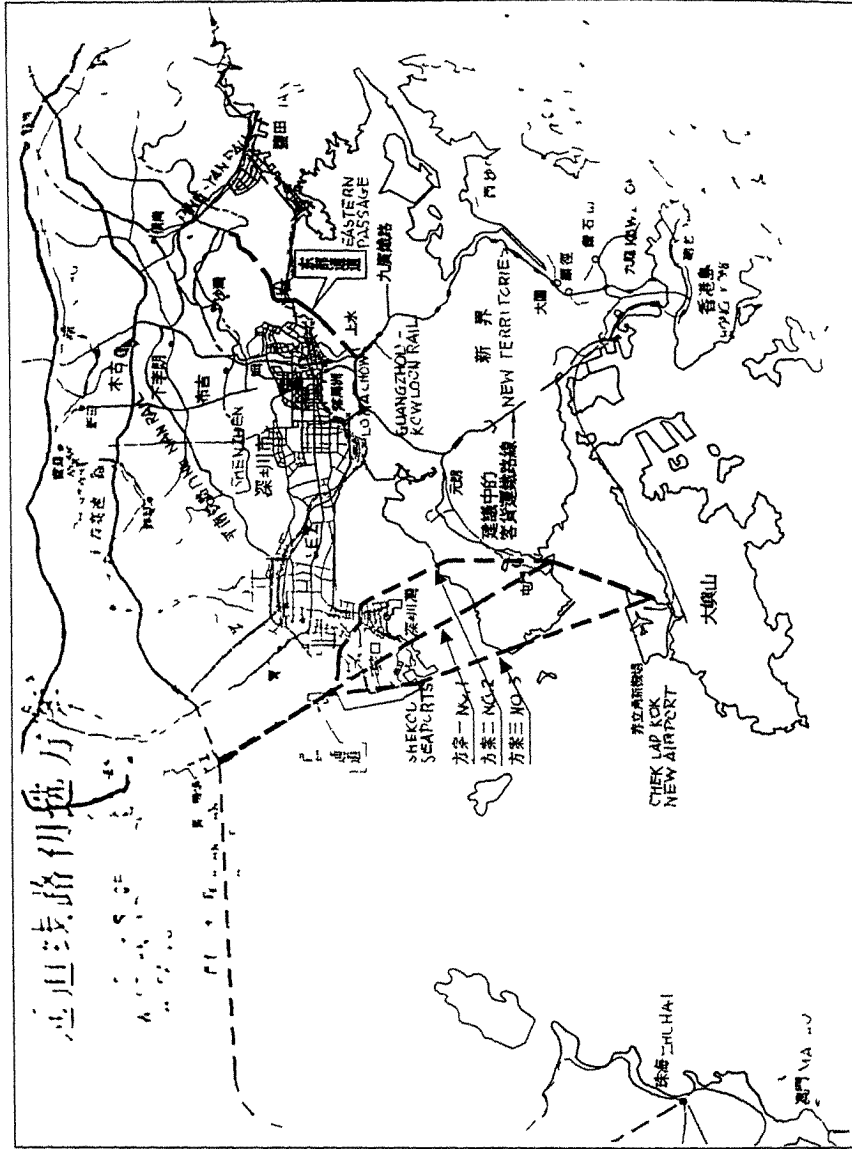


Table 5.3 The Forecast of Main Economic Indices of Shenzhen

Items	2000	2010
GDP(billion RMB)	100	300
IO (billion RMB)	112	320
Percentage of Tertiary Industry	52%	62%

Source Shenzhen Statistics Bureau (1994), Urban Planning and Design Institute of Shenzhen (1994)

Table 5.4 The Forecast of Population Size in Shenzhen (Unit: in million)

Years	1980	1993	Average Increase Rate (%)	2000	2010
Municipality					
Total	0.33	2.94	18.27	4.05	5.3
Permanent	0.30	0.87	8.04		
Temporary	0.03	2.07	48.63		
SEZ	0.09	1.18	21.55	2.00	2.6
Bao An	0.13	0.91	16.10	1.01	1.3
Long Gang	0.11	0.85	18.36	1.04	1.4

Source Urban Planning and Design Institute of Shenzhen (1994)

eastward from Shenzhen to Huizhou and northward from Shenzhen to Dongguan. These two corridors are essential for the diffusion of economic development from Shenzhen to the PRD area, and also from Hong Kong via Shenzhen to the PRD.

Another key aspect in urban economy is the population size. It was forecasted as well in the revised comprehensive plan and is shown in Table 5.4.

Infrastructure Aspect

a) *Seaports*

The development goal of Shenzhen seaports is to become a future exports transshipment centre for containers and large quantities of

cargoes. By the end of 1993, the volume of freight handled was 26.2 million tons. It was forecasted that the volume would escalate eventually to 0.24 billion tons in 2010, in which Yantian Seaport would have the capacity to share 0.1-0.2 billion tons, amounting to 8 million TEU and bulk cargoes, due to its deep water and other advantageous conditions (Figure 5.2). Shenzhen seaport is comprised of eight port areas and is classified as one of four biggest deep water international seaports in China. It will eventually become a transshipment hub on the national level in the future, as declared by the Ministry of Communication.

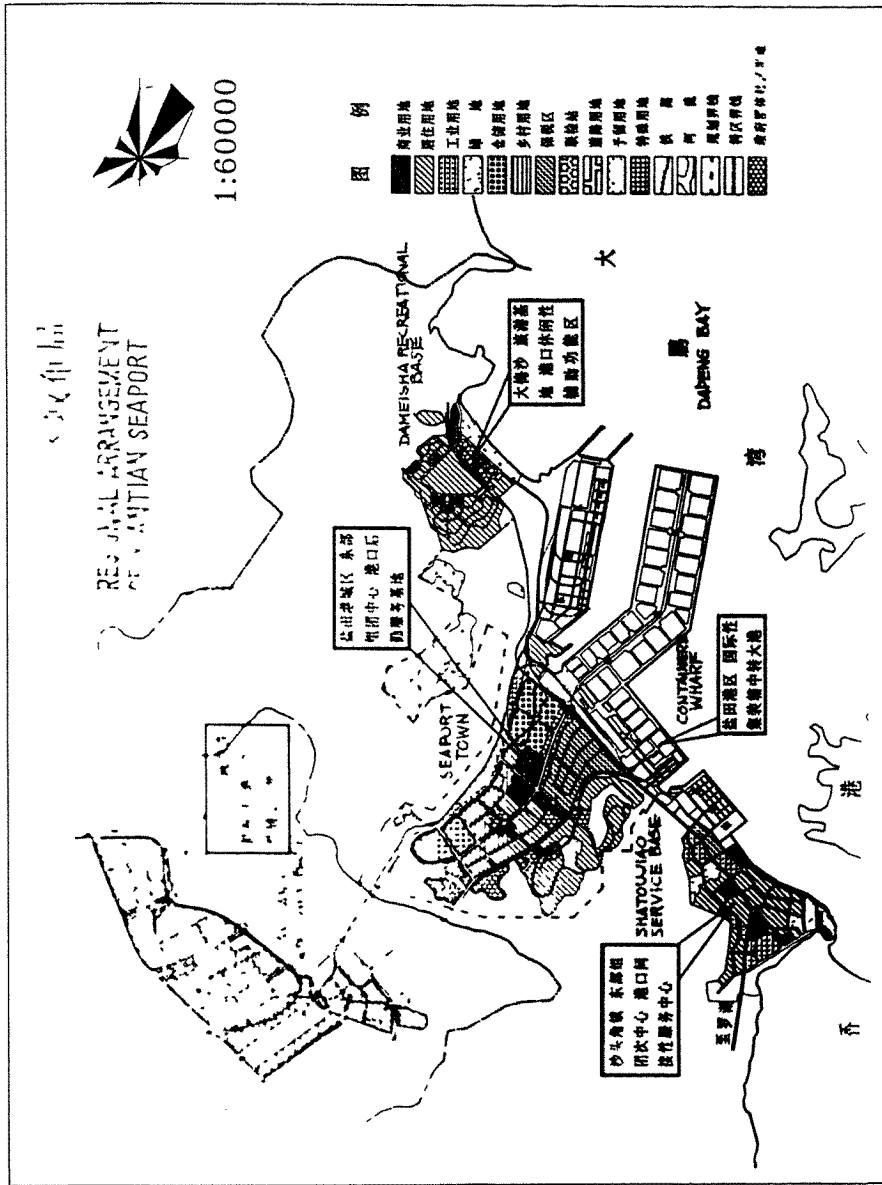
b) *Airport*

The amount of passengers through Huangtian International Air Terminal (HIAT) was 2.6 million person-time in 1993. It is expected to climb to 22.5 mp-t and 11.5 million tons in freight transport. HIAT has already shared a portion of passenger traffic of Baiyuen Airport in Guangzhou which is usually overcrowded and the flights are often delayed.

c) *Railways*

Two new main arteries of communication between north and south China, which are paralleled approximately to the existing Beijing-Guangzhou line, are under construction. One is the Beijing-Kowloon line on the west side crossing six provinces which is now scheduled to come into operation in 1996. Another is the Beijing-Jiujiang (Jiangxi Province)-Kowloon line which will go across Guangzhou and Shenzhen and may connect with Guangzhou-Meixian-Shantou line. Both are actually terminated at Shenzhen and then go across the border to Kowloon. One can imagine the future heavy demand of freight transport on Shenzhen and Kowloon and the golden opportunities of development along the PRD section. Furthermore, there are two feeder lines: one from Pinghu of Shenzhen to Yantian seaport and the other linking Shekou western seaports with Shenzhen-Guangzhou express line. So eight seaports in Shenzhen will be benefited from those lines. In addition, a second rail route which links the highway from Shekou with the New Territories of Hong Kong was proposed. It aims to provide a supplemental line from Shenzhen to Kowloon to alleviate the transport pressure on both Shenzhen and Hong Kong, and also, to conduce to the formation of economic development corridor on the eastern bank of the PRD Estuary (Figure 5.3).

Figure 5.3 The Proposal of Western and Eastern Passages



d) Road Network

Since the opening of Guangzhou-Shenzhen-Zhuhai superhighway, the interaction between sub-regions in the PRD area has been reinforced, particularly along the Guangzhou-Shenzhen-HongKong axis. The time distance between these three places was shortened and different categories of markets were expanded. Within SEZ, an express way system are under construction, while an inner loop highway outside SEZ from Songgang to Nuclear Power Plant and an outer one from HIAT to Ho-au connecting Yantian-Huizhou highway were already planned. Eleven stations for passengers of long-distance trips by vehicles to the PRD area and other places of Guangdong Province are constructed with reference to the annual figure of passenger transport of 5 to 8 mp-t.

e) Water Supply

The coastal belt of South China is a large area without rich water resource. Through continual efforts in water supply projects development, the existing portable water supply is more or less able to meet the current needs of consumption. However a water shortage is anticipated after 2000, particularly in 2010. One readily available solution is to draw water from East River through Chishi and Western Branch of East River from the PRD area. The total amount of water supply will thus be 1.23 billion m³ in 2000 and 2.03 billion m³ in 2010.

f) Drainage

The existing capacity of sewage disposal plants and deep-sea drainage system is able to satisfy the drainage demand of SEZ, but in outskirts like Long Gang and Bao An districts, there is no formal pipeline system to drain sewage except in a few townships. The urgent tasks are to prevent sewage from polluting rivers and seawater by plant treatments and to start more projects on building disposal plants. Any delay in constructing a large-scale piping system in Long Gang and Bao An should not be tolerated.

g) Electricity

It is forecasted that the average annual increase of power consumption will be 30%. That is why Mawan Plant has been under construction and Eastern Plant is prepared to meet the demand before 2000. Long-term electric power supply will be yielded from Shajiao B Power Plant,

Mawan Power Plant, Eastern Power Plant, Nuclear Power Plant, Natural Gas Power Plant and the project of long-distance power transmission from Shichuan, Yunnan, Guizhou Provinces and Guangxi Autonomous Region before the end of 2010. It is forecasted that the power load will reach 4-5GW and 10-13GW in 2000 and 2010 respectively.

h) Telecommunication

The general popularisation rate of telephone lines was 13.5% in 1993, while it was 23.7% in SEZ and is expected to escalate to 46-50% in 2000, 63% in 2010. The total amount of telephone subscribers was 400,000 and the capacity of switchboards was 700,000 in 1993. It will probably escalate to 1.85-2.1 million in 2000 and 3.2-3.4 million in 2010. DDN digital exchange network has already been established and EDI electronic digital data network is under construction. The first optic highway with 2.4 gigabits per second has already come into service for Hong Kong, Shenzhen, Huizhou, Dongguan and Guangzhou in 1994. The future goal of communication network is to establish integrated, intelligent and individualised digital networks to develop information highway.

i) Information Service

In 1994, there were 2500 information service units employing about 10,000 professionals. These units yielded a productive value of 297 million RMB in 1994 and is expected to escalate to 414 m RMB in 2000.

SUSTAINABILITY OF INTEGRATED CO-ORDINATION

It is doubtless that Hong Kong should be included in the integrated and co-ordinated development of the PRD region. The deliberation of co-ordinated development between Shenzhen and Hong Kong should be carried out in light of economic development levels of the PRD region, the whole China and Southeast Asia.

The interrelation between Shenzhen and Hong Kong is significantly close and their interaction are mutually beneficial, complementary and of fair play. The process of establishing market economy system in Shenzhen has practically facilitated the linkage between the two cities through the procedures of exchanging ideas, discussing and co-operating with each other.

Hong Kong is an international hub for China to reach the outside world, while Shenzhen is a hub for Hong Kong and foreign countries to establish

connection with the hinterland. So it seems that Shenzhen and Hong Kong may combine to become a joint and cross-border hub. This must be the general principle to guide the growth orientation of both urban economies so that Shenzhen and Hong Kong can jointly take shape to become a world megalopolis.

Co-ordination Between Shenzhen and Hong Kong

a) Economic

The focal point is on the field of finance. It includes:

- Raising fund jointly to develop the business in the hinterland;
- Absorbing foreign capital in Hong Kong and investing it to the domestic market through Shenzhen, accompanied by more open measures for foreigners' business in Shenzhen;
- Learning from or referring to the system of financial economy of Hong Kong to reform the system in Shenzhen, ensuring the compliance with international practice and criteria, and
- Jointly promoting direct and transit trades and advancing together to the world market.

b) Urban Development

- Sharing the traffic load among the seaports, airports and landports of the two cities;
- Passage link development such as Shekou-New Territories route and the underground transfer at Huanggang landport, etc.;
- Joint networks in providing water supply, drainage, electric power and telecommunication service, and
- Co-operation on industrial development by distributing industries to locations in the two cities which best facilitate their operations.

c) Environment

- Jointly preventing pollution resulting from projects, such as reclamation of Shenzhen River, and bringing the water quality of Shenzhen Bay and Daya Bay under control;

- Preserving the natural ecology of both land and seawater in the border area, and
- Exchanging advanced techniques of environmental protection.

d) Administration

- Administration systems and international practice;
- Legislative administration and enforcement of law and rules, and
- Information exchange.

The Co-ordination Between Shenzhen and the PRD Region includes :

- a) The supply of natural resources and man-made energy;
- b) Different modes of transportation;
- c) Division of work and co-operation on different industries;
- d) Economic development corridor;
- e) Policies and conditions for developing the metropolitan belt of world cities;
- f) Promotion and open up jointly the outside market; and
- g) Urban and rural development, as well as environmental protection and ecological balance between neighbouring cities.

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6

The Development and Roles of Zhuhai

GAO Zhaohe

INTRODUCTION

To study the development and prospects of a city, one has to understand its current situation, development advantages (growth cores) and energy resources.

GENERAL CONDITIONS OF ZHUHAI

Zhuhai is one of the earliest Special Economic Zones experimented in China. With comprehensive development in the bygone fifteen years, Zhuhai is transformed from a primitive fishing village to a distinctive and modernised waterfront garden city. Although its modernisation is still at a preliminary stage, Zhuhai has already become a prosperous economy with well-organised transportation systems, efficient telecommunications, sufficient water and electricity supply, a clean environment and beautiful scenery.

Zhuhai is situated at the coastal area of central Guangdong, the western coast of Lingdingyang, and the southern shore of Pearl River Delta. To the east of Zhuhai are Hong Kong and the in-between water of Pearl River Estuary; to the south are South Sea and Macau which adjoins Zhuhai; to the west are Xinhui and Taishan; to the north is Zhongshan which borders on Zhuhai.

The land and water of Zhuhai spread over a total area of 7,649 sq.km. The shoreline of Zhuhai is 731 km. long. Zhuhai is known as the "City of Hundred Islands" owing to its 146 islands. The land of Zhuhai, with an area of 1,630 sq. km., is composed of mountains, hills and alluvial plains. Since Zhuhai is located at lower latitudes in the southern sub-tropical maritime monsoon area, it has a warm weather which fosters prolific plant growth, fresh and clean air, and a pleasant environment.

The administrative area of Zhuhai includes Xiangzhou, Doumen, and Management Districts and High-Technology Development Districts like Sandao, Pingsha, Hongqi, Zhuhai Harbour, Wangqin, Qiao and Wanshan.

The population of Zhuhai in the year of 1994 was 1,126,000, in which 606,000 were permanent population, 506,000 were temporary residents and 14,000 were floating population of fishermen. Non-agricultural population takes up more than 60% of the total population. The population density is 555 persons per sq. km.

The economic development of Zhuhai has been booming in the past ten years. Before the modernisation of the city, the total industrial and agricultural outputs value at less than two billion RMB in which only 60 million is generated from industries. However, in 1994, the value of total industrial and agricultural outputs have grown to 268.6 billion RMB in which 260 billion is the contribution of the industrial sector. Nowadays, as the industrial sector has become the backbone of Zhuhai's economy, other economic activities such as agriculture (including fisheries), finance, tourism and commerce co-ordinate with each other to build the city as an export-led economy.

DEVELOPMENT ADVANTAGES

Geographical Advantages

There may be many reasons for Zhuhai, a unpopular town fifteen years ago, to be chosen as one of the first Special Economic Zones (SEZ), but the geographical advantage of Zhuhai is certainly one of the determining factors. Zhuhai has a strategic location: lying on Pearl River Delta and Xi Jiang hinterland, adjacent to Xi Jiang Estuary, with South Sea to its south, proximate to Hong Kong and Macau. It is one of the well-established ports in the country and an important gate in the Southern China. Moreover, it is situated at the "frontier" of Open Door Policy and at the "junction" of "One Country, Two Systems". Since the economic reform was carried out, Zhuhai has been experiencing skyrocketing economy growth, increasing transportation demand and the ever strengthening function of the port. After the completion of Jiuzhou Port which allows direct trips to cities such as Hong Kong, Shenzhen and Tianjin, the container transport is growing ever since. A more comprehensive transportation network, including land, water and air transport, can be anticipated when major infrastructure projects are completed. These projects include the construction of container terminals of different capacities, Zhuhai Airport, Guangzhou-Zhuhai Railway, and

projects under consideration such as Guangzhou-Zhuhai Highway, Lingdingyang Bridge, Huangmao Sea Bridge. In the future, when travel distances between Zhuhai and other cities within China as well as those between Zhuhai and other foreign countries become shorter, it is foreseeable that Zhuhai will be transformed from a traditional port to a regional or even international transport hub. In this way, Zhuhai can fulfil its functions of a “window” and a “radiator” of the country.

Environmental Advantages

Nowadays, a modern city is always expected to provide a good living environment in its prosperously growing economy. The city image will be seriously debased if it has a prosperous economy but a heavily polluted environment. As a consequence, the government of Zhuhai is paying serious attention at environmental protection and conservation. If economic decisions are contradicting the environmental concerns, the former should be submissive to the latter. According to the aim of simultaneously planning economic development, city infrastructure development and environmental conservation, Zhuhai government has carried out comprehensive environmental protection planning in which the aims, standards and policies for environmental protection are laid down. Environmental Protection Functional Areas are designated; rain water and sewage water separation scheme is taken; three district sewage water treatment plants are already under operation whereas land is reserved in the official plans of other districts for building similar plants. Zhuhai complies with the first-degree standard of the country to ensure a clean atmosphere of the city. It also subjects to the first-degree water standard to protect marine water and drinking water, as well as the second-degree water standard to protect river and coastal water. Zhuhai is successful in reaching the basic requirements of these air and water standards. Moreover, the noise level within residential areas is controlled under the acceptable level of 45 decibels.

In order to conserve the magnificent natural scenery in Zhuhai, mining, rock-blasting, plant damage and deforestation are strictly prohibited. The “green” area takes up 35% of the city’s development area and 50% of the overall city area. There is 60 to 100 metre green belt on river banks and waterfront areas. Moreover, green protection area is designated at the fringes of development areas. These green belts become the “lungs” of Zhuhai city which further reinforces its planning concept of a garden city.

Urban design is playing an very important role in the planning and construction of residential districts. The aim of such emphasis is to

incorporate the concept of waterfront garden city of Zhuhai in the architecture of buildings and creates a high-quality living and working space.

Clean environment, fresh air and pleasant scenery are the attributes of today's Zhuhai. As it is performing well in the aspects of environmental and comprehensive efficiencies, Zhuhai is regarded as the "hygienic city" and the "garden city" of the country.

A pleasant city environment not only provides good living and working space, it also fosters the growth of economic activities such as high-technology production, tourism, finance and telecommunications.

Resource Advantages

Resource is as well a crucial factor as the aforementioned ones in developing a modernised city of Zhuhai. The endowment of Zhuhai with its rich resources is doubtless a contribution to the rapid development of the city.

First of all, Zhuhai has a rich land resource. The central and western districts of Zhuhai are located at the waterfront areas of Xi Jiang Estuary. Owing to the effects of sedimentation, the coast is "growing" and extending its length at an annual rate of 120 to 160 metre per year, which will probably form a land bridge in the estuary. The total amount of land in Zhuhai, including those being opened up and potential sites for land formation, comprises an area of more than 1,000 sq. km.

The resource of saltless water is also abundant in Zhuhai. This abundant resource becomes a comparative advantage of Zhuhai especially when many cities within and outside the country are suffering from water shortage. The western district of Zhuhai is situated among the eight largest gates of the Pearl River water system. A large amount of water flows into the sea through Modao Men, Jiti Men, Hutiao Men and Ya Men. The total water transport capacity amounts to 1191.1 billion cubic metre, which is 38.6% of the flowing capacity of Pearl River. In addition to the large capacity of water flow, good water quality and high self-cleaning ability are some of the good attributes of the water of Zhuhai.

To the east of Zhuhai, there are 78 islands scattered on the water of South Sea which provides a water link to Hong Kong. Some of the islands, with deep surrounding waters, can be developed as deep harbours by exploiting their locational advantages. Economic activities such as entrepot trades, cargo storage, marine production and tourism will be facilitated on such deep harbours.

It is evident that Zhuhai, endowed with all the aforementioned resources, possesses enormous development potential.

Infrastructure Advantages

Well-established city infrastructure is the foundation and priority of developing a modernised city. No modernisation can take place without the construction of efficient infrastructure.

The government of Zhuhai has been constructing infrastructure according to the principles of high standard, high efficiency, high quality and modernisation. As a result of construction efforts in the past fifteen years, a basic city transport network has already been established. The road network is sophisticated enough to provide easy access to any places within the city. The eastbound and westbound lanes of Guangzhou-Zhuhai Highway, leading to Zhongshan and Guangzhou, have already been widened and upgraded as a higher level highway. The 10,000-ton-terminal at Jiuzhou Port, which is completed and opened only a few years ago, is currently the fifth largest terminal in the country in terms of container transport volume. In order to further develop the external transport link of Zhuhai and create more developable land, the city government has been emphasising, since 1989, the development of western district, the construction of large-scale infrastructure such as Zhuhai Corridor, Zhuhai Harbour and Zhuhai Airport.

Zhuhai Corridor is already completed and opened. As the “pioneer” of western district development, it is the means of connection between Zhuhai city district and western district. (There are five districts within one county.) Moreover, the opening of Zhuhai Corridor marks the success of Zhuhai in overcoming the critical hindrance in western district development. It has already opened the western gate of Zhuhai and recently linked Zhuhai with places such as Xinhui, Taishan, Enping and Kaiping. It will also extend itself to the Zhuhai Section of the Guangdong Coastal Highway in the future.

Zhuhai Harbour is the “leader” of western district development. After numerous investigations by various departments and experts on port development, Zhuhai Harbour is identified as a desirable location to build a deep water harbour and be developed as a river-ocean transport node. With an annual throughput of two to three billion tons, Zhuhai Harbour is expected to be a multi-purpose port and regional hub.

The State Council has acknowledged Zhuhai Harbour as the “first-degree open port”. In the southern water working area, a 20,000-ton freight terminal and a container terminal of the same capacity are already under operation while three 35,000-ton and five 50,000-ton container terminals, a 80,000-ton food terminal, a 100,000-ton mineral terminal, a 100,000-ton coal terminal, a 80,000-ton and a 250,000-ton oil terminal are all under construction.

Zhuhai Harbour is going to bear the responsibilities of both ocean and river transport and will become the transport hub for the export-led development of Pearl River Delta, western Guangdong, Guangxi, Yunnan, Guizhou and other southwestern districts. It can therefore speed up the economic development of the whole region and also supports the growth of the 300-sq.km. Economic Development Zone, situated at the west of Jiti Men, which focuses mainly on industrial development with associated large scale comprehensive development.

Zhuhai Airport, a passenger-use airport constructed according to the international standard, has established the “air-bridge” between Zhuhai and different parts of the world. Besides serving Zhuhai, it also provides air services to neighbouring cities including Zhongshan, Jiangmen, Xinhui, Taishan and Kaiping.

Guangzhou-Zhuhai Railway is already extended to Zhuhai with a station at Hezhou north. While reserving spaces for extension to Macau, the railway has already extended its reach to Zhuhai Harbour which in turn establishes a direct linkage with the water transport. Guangzhou-Zhuhai Railway connects the seven cities of the western Pearl River Delta and links itself to the country-wide railway network. This will facilitate the flow of materials between these cities and the inland areas. Its “radiation area”, amounting to about 260,000 sq.km., is the prosperous economic zones of the Pearl River Delta. This railway has radically transformed the region’s transportation network from a backward situation to a superior position, with an efficient linkage to the hinterland.

The construction of the proposed Lingdingyang Bridge will establish a second corridor between Hong Kong and China. With the interconnection by Huangmaohai Bridge and Guangzhou-Zhuhai Highway, Lingdingyang Bridge can link to Guangdong Coastal Highway and forms highway networks of Guangzhou-Zhuhai-Hongkong, Guangzhou-Zhuhai-Shenzhen and Hongkong-Zhuhai-Shenzhen. These transport networks help establish a close relationship between Pearl River Delta, western Guangdong and Hong Kong. As a consequence, the dimensions for development in these three areas are enlarged and economic development of the whole region will be pushed forward.

Water and power plants are all constructed with advanced technologies. The first phase of the 1.8-million-ton water treatment plant in the western district, which has a capacity of 0.8-million-ton, is already completed and opened. Zhuhai power plant, as a regional electricity supplier, has a total capacity of 3.72 million kilowatt. Besides serving Zhuhai, Zhongshan and Macau, it also transmits electricity into the electricity network of Guangdong Province through a 500-kilovolt high-tension electric line.

Regarding the current telecommunications services of Zhuhai, 200,000 households are provided with telephone services and the telephone popularity rate reaches 27.7%. For every hundred city households, there are 90 registered telephones. This level of telephone popularity ranks the first in the country. Moreover, Zhuhai has established direct-dial linkages with more than 1,000 large-to-medium Chinese cities and with more than 200 regions or countries in other parts of the world.

The aforementioned infrastructure constructions of Zhuhai, namely Zhuhai Corridor, its harbour, airport, railway, highways, power plant, Lingdingyang Bridge and Huangmaohai Bridge, has upgraded the investment environment of Zhuhai as well as enlarging the service area of Zhuhai to the Pearl River Delta or to an even larger region.

Industrial Advantages

Ever since the development of Zhuhai, its economy has been experiencing unprecedented growth at a annual increase of more than 30%. The first ten years of Zhuhai development was the preliminary stage of its export-led development in which some foundation works for the city development were carried out. In recent years, the development of export-led economy is reaching a mature stage. The relative importance of technology and knowledge-intensive enterprises has significantly increased, and also, industrial and agricultural automation and enterprise management skills are greatly improved. The city government of Zhuhai considers high-technology industries as the focus of economic restructuring and the major tool to enhance future development potential and to increase the competitive ability of the city. Moreover, the city government promotes the idea of honouring knowledge and the learned people. People who have great contribution to high-technology development will be heavily rewarded. Among the developing economic activities, high-technology industries, industries requiring much technological know-how and high value-added industries are largely promoted and encouraged. As a result, high-technology industrial development is proliferating in Zhuhai. To date, among the 6,000 enterprises in the city, more than 40% of which are related to high-technology industries. The value of high-technology products amounts to 15% of total industrial output value of Zhuhai and 40% of them are using new technology. In 1993, Zhuhai ranks the second among all cities of the whole country according to a comprehensive score which reflects social, economic technological and environmental performances.

Simultaneous to stabilising the position of traditional agricultural

industry, Zhuhai government is also stressing the development of export-led agricultural industries and “high-quality, high-quantity and high-efficiency” automated agricultural practice. In order to ensure constant supply and export of agricultural products, Zhuhai puts much efforts in establishing vegetable supply bases as well as facilitating the growth of mariculture industries.

The city government has been strongly promoting tertiary industries. Besides paying serious attention to areas of transportation and tele-communications, Zhuhai is also encouraging development in areas like commerce, tourism, finance, information-oriented sectors, retailing services and real estate.

Moreover, the quantity, quality and technological structure of Zhuhai’s work force is undergoing transformation. Zhuhai has experienced success in land-use planning and urban management. It has also established an efficient governmental system to regulate foreign and domestic business. The legal system has already taken shape. The overall quality of Zhuhai’s citizens are generally improved.

In conclusion, in the past fifteen years, Zhuhai has experienced a healthy development on its road to urbanisation and industrialisation and has established a well-founded base to become one of the future modernised core cities in the Pearl River Delta.

THE ROLE OF ZHUHAI

Zhuhai will become a future modernised core city in the Pearl River Delta. This future role is determined by the advantages of Zhuhai itself and the overall demand of regionwide economic development of Pearl River Delta.

Zhuhai has a locational advantage, a pleasant urban environment, a piece of fertile land, saltless water resources, a good foundation of high-technology industries, a good external transport network by sea, land and air, a high-technology work force, a software environment facilitating the internationalisation of production and finance, etc. All these are the basic conditions for Zhuhai to become a modernised core city in the future Pearl River Delta. During the Expert Evaluation Meeting of Zhuhai Master Plan Review in 1993, Mr. Zhou Ganshi, the former Deputy President and current Academic Committee Member of the Department of Construction and also an expert in urban planning, declared that, *“This is the first time that we discuss the planning of the Greater Zhuhai City. It is the only city in the country which possesses a broad piece of land, abundant water source and a deep harbour. Zhuhai is well integrated between city and village and*

between human and natural environment. These good qualities has laid down an ambitious, advanced, magnificent, all-round and hopeful plan ... Zhuhai has the comparative advantage of having a good environment in every aspect. As a result, Zhuhai can establish itself as an environmentally friendly big city on the world with a high-quality environment. As a future international transport hub, Zhuhai should pursue a relatively high standard in all its developments ranging from overall to local levels."

A prosperous economic development of Zhuhai can be anticipated especially when it has a deep harbour to facilitate development of big industries and flow of materials. As external transport linkages by sea, land and air help Zhuhai to become a regional and international transport hub, the city can perform the functions of an entrepot, a service centre and a management centre. Zhuhai, as a multi-functional city, can therefore be developed into an international centre of finance, business and transport.

Looking at the map of Guangdong Province, one can easily notice that Zhuhai is situated on the western coast of Pearl River Estuary whereas Shenzhen on the eastern coast. If the province capital, Guangzhou, is taken as the leading city, a strategic city distribution will be formed in this region with Shenzhen and Zhuhai as the eastern and western wings of Guangzhou. Since Guangzhou, Shenzhen and Zhuhai are all strategically located at river gates, serving as regional hubs, having complicated transport networks and having relatively prosperous tertiary industrial development, they become the core cities of Pearl River Delta city group. They also form a small delta among the larger Pearl River Delta and become the "core delta" (as they are located in the core of the region). With the implementation of the Pearl River Delta Economic Zone Development Plan as proposed by Guangdong Province Committee, economic development of Zhuhai and Pearl River Delta Economic Zone will be better co-ordinated; large-scale infrastructure projects within the region will also be better co-ordinated, and eventually, Zhuhai can march towards its goal of becoming a modernised core city. Zhuhai will then serve Pearl River Delta Economic Zone with the functions of leading, radiating, serving and supporting.

Zhuhai is one of the first Special Economic Zones in the country. Inasmuch as it has started earlier in the economic reform, it has accumulated relatively more experiences than others and has established a better foundation for further development. Being the experimenting point for economic reform, Zhuhai will continue to function positively as an experimental field, a window, a radiator and a "front-line soldier" so as to be an illustration of the economic growth within the Pearl River Delta Economic Zone.

Zhuhai is a newly born city. At present, its economic power, highly intensive economic function, industrial structure, economies of scale, tertiary industry, transportation, software environment, technology, education, environmental hygiene, etc. still lag behind the overall performance of other modernised core cities. There is still a long way ahead. Nevertheless, the preliminary success of Zhuhai's economic development is actually a foretaste of its brilliant future.

Planning of Macau in the Pearl River Delta Context

José NOBRE

INTRODUCTION

Accepting the promoter's proposal theme, I will try to underline the broad orientations that the Portuguese administration and concerned agents are pursuing in Macau in order to consolidate a social model structured to the future.

To achieve this objective I have been firstly assisted by the "Authorisation of Revenue and Expenditure Law" which is annually supported by the written proposals for the sectorised policies (investment plan for the public sector) based on analysis of the "Economic and Financial Situation of the Territory" (Linhas de Acção Governativa – LAG) and subsequent strategies. Nevertheless, some academic studies, executive reports and personal interviews, gave us a more detailed and specialised perspective.

What role is prospected to Macau in the Pearl River Delta (PRD) context? What character does the Portuguese administration intend to imprint? How are the strategic proposals being translated on the Territory's land use plans? These are the main questions I will try to answer.

INTRODUCTION: THE REGIONAL CONTEXT

One can not understand or even to conceive a strategic role for Macau in the PRD region without considering its differences when compared with Hong Kong, Zhuhai or Shenzhen¹.

This is not only because of its geographic size or economic weight, of course, but mainly for its historical legacy, subsequent political developments and cultural consequences.

Since its origin four centuries ago, Portuguese settlement in Macau has ever been a commercial and cultural interface between East and West, by a permanent dialogue with local residents, and the establishment of continued political compromises with regional and national Chinese representatives².

And so intends to be. It started in the past by sea, and nowadays in a few months we hope, by air.

Differences between Macau and other places in the region are emphasised for the sake of analysis. It is because these departing points, namely the physical supports, the historical origins and the social fundamentals, are the comparable items. On the contrary, strategic options and related data are not as comparable since different cities have not been working over similar bases.

Macau has always been different, and it continues to be. This *singularidade* (singularity) expressed in many and complex layers is the heritage that the Portuguese would like to consolidate as a cultural, social and economical model.

Although very dependent of its neighbours strategies and vicissitudes³, the territory is offering a range of diversified services related to the regional needs of the development process that is occurring in this region at a very sensible point: the southwest vertices of the Hong Kong-Guangzhou-Macau triangle, at the entrance of the PRD.

GOALS, OBJECTIVES AND WORKING ASSUMPTIONS

Setting up goals, objectives and working assumptions was not an easy task for Macau as it does not have an entity like Hong Kong Planning Department. Even I, the author of this paper, am not a strategic planner but an architect from the Public Works Ministry who is more concerned with land use planning.

To obtain organised data or even some projections for specific sectors is rather easy. But if you aim at obtaining a general view over the territory's land use policies and strategic planning, you must be patient and diligent enough to collect all information you need and work on it.

This also explains why, within the constraint on using English to produce this paper, we resort to a large number of English quotations from academic studies. They are after all the best organised and updated reports we have met.

Meanwhile, some could argue that a Planning Department in Macau with a similar profile as the one of Hong Kong would not be suitable considering its "municipal" scale – 18 square kilometre, about 400,000 inhabitants. Before drawing any conclusions on this matter, it is more appropriate to first study the most common decision methodologies of which the Portuguese officers and politicians are used to.

Indeed planning in such a broad scale – strategic – is only a recent

practice in Portugal⁴. We can find several urban planning examples in different cities, neighbourhoods and villages. Colonial settlements in South America (Brazil) or Africa (Angola, Mozambique, etc.) since the 15th century, would be as well a rather interesting research theme. Although sectoral policies like network developments have strategic forecasts and land use proposals, they do not have a national engagement as political decisions were traditionally centralised and there was generally a lack of skilled work force on strategic planning.

This is changing nowadays. New graduates, planning officers, people from various professions are all now involved in new planning procedures, learning how to work together and translating their proposals in readable means in order to promote public participation.

As a Portuguese administered territory, Macau's land use reflects this situation, either on planning conceptions or decision methods. With a rather consistent political economy, Macau's authorities are now endowing the territory with a set of heavy equipment and infrastructure networks. These will provide Macau with the means needed to reinforce its role on the PRD context: a huge interface terminal for passengers and cargo which offers all kinds of complementary services – tourism and leisure, banking and insurance facilities, high value-added industries and storage.

Human resources are not forgotten as education policies are being developed for the lowest to the university levels.

POPULATION: DEMOGRAPHY AND EDUCATION

In December 1993 an international conference on “Population and Development in Macau” took place at the local university. On his *Keynote Address*, Bruce Taylor⁵ said:

“Those taking on the job of maintaining a distinct role for Macau as a Special Administrative Region must face the fact that they have very limited resources at hand. (...) By now it is a bit of a cliché to refer to Macau's population as its only significant resource. But such statements point, albeit superficially, to an important truth. The skills and energies of Macau's people have already sustained its existence for more than 400 years. The territory must continue to rely on these same skills and energies as it seeks a way forward into an uncertain future: the niche that Macau will occupy in the Greater China of tomorrow will be determined, in large measure, by the talents and capabilities found in the population of today.” (Taylor, 1993, pp. 2-3)

To strengthen this idea the same author quotes a study from *The Economist* that intends “to identify reasons why economic growth has been especially strong in East Asia”. The conclusions were precisely linked to the high investment resources by the «tiger» economies in education “particularly at the primary and secondary levels. Here Macau, despite recent improvements, still lags behind its neighbours. Probably the greatest legacy that the present administration of Macau could leave for the future Special Administrative Region and its people is a system of free, compulsory education covering at least six, and preferably nine years, supported by public funds (although not necessarily administered by public agencies).”⁶

A “Resident” Profile

In the same *Keynote Address* of the international conference held at the University of Macau on December 1993, Bruce Taylor proposed a profile to “this fundamental resource”. According to him “Macau’s people” are (Taylor, 1993, p. 3) (bold is ours):

- “First, relatively young; slightly more than half of them are under 30, according to the 1991 Census. This suggests that a large majority of them will be working well into the next century.”;
- “Second (...) overwhelmingly Chinese; slightly over half of residents in 1991 were born in China, and many of those born in Macau itself were the children of a previous generation of immigrants. (...) Such linkages are especially important in a culture where long-standing ties of kinship or partnership are vital in the conduct of business.”;
- “Third, the younger people of Macau, at least, have known nothing but growing prosperity, as investments initiated in the 1960s in such sectors as garment manufacture and tourism bore fruit by the 1980s with one of the world’s most rapid rates of economic growth.”

To this particular profile we can meanwhile add the people’s provenance data – the Chinese, the Portuguese and the *macaenses* – and its common language (Edmonds, 1993a, pp. 899-900):

- “Most agree that there are now less than 10,000” *macaenses*, “their language was a Portuguese creole which along with their cuisine and customs is rapidly disappearing”;
- “Cantonese speakers make up 86.3 per cent of the territory’s popula-

tion with the largest numbers coming from neighbouring countries”: Guangdong, Fujian and Shanghai;

“Recent attempts to make Chinese an official language in the territory have focused on Guangzhou Cantonese rather than on the official standard Chinese language (Mandarin), the latter being spoken by only 1.1 per cent of the population.”

According to the same source, *“although as of 1991, 27.9 per cent of Macau’s population had Portuguese nationality, only 1.8 per cent of the population spoke Portuguese. (...) Outside the government system more schools teach in Cantonese or in English than in Portuguese: as of the 1991-92 academic year over 83% of the students in Macau were in Chinese schools and 9% were in Anglo-Chinese schools. Only 0.6% of the territory’s population are native speakers of English.”* (Edmonds, 1993a, pp. 901-902)

The Sino-Portuguese agreements preview that the Portuguese will remain as an official language in Macau after 1999 but it is improbable that it could become indispensable, except perhaps for some bureaucratic petitions. Political reasons will certainly increase the use of Chinese official language – Mandarin; and the world trade markets language – English – will impose a more pragmatic attitude. Even so the teaching of Portuguese has been increased since the localisation policies are being implemented and bilingual facilities required.

Demographic Projections

According to Edmonds, *“the 1991 census gave Macau an official preliminary population figure of 354,537 although most agree that something closer to 450,000 or 500,000 is probably more accurate”* (Edmonds, 1993a, p. 901).

In this same statement Edmonds cites Lin Shiming and Wong Hon Keong as they *“advocated allowing Macau’s population to rise to one million by 2010, through immigration of selected Chinese labour and to a lesser extent natural increase in order to solve labour shortages and increase the size of the territory’s domestic market”*. But *“a Macau government planning report of 1987 estimates a population of 710,000 in 2010”* which seems to be more adjustable to the territory’s area.

The same author – Edmonds – listing the subject proceedings of the *Population and Development in Macau International Conference* (proceeding authors between parenthesis) notes that *“despite signs that the natural birth rate is decreasing, both in Macau (Zhong) and in Guangdong (Jiang Leiwen,*

Zhu), Macau's geographical growth will not be enough to allow the territory to undergo the rapid economic expansion that many desire, and with a total population increase to as much as 480,000 by 1999 (Wu Shuoi, Yang), the overall population density would remain high at about 17 persons per square meter, so that calls for continued vigilance on migration and birth control (Tang) are justified" (Edmonds, 1993b, p. 26).

It is then "clear that the Macau government has opted to physically grow out of its population-development dilemma" and thus land reclamation strategies were adopted, ever since⁷.

LAND USE STRATEGIES

Some authors seem to have shared difficulties on describing Macau's urban planning practice⁸ – "a subject where many are prone to find fault" (Taylor, 1993b, p. 59). Yet, "it is not accurate to say that Macau's growth has been unplanned. (...) And the present development program of Macau Government focusing on major infrastructure works, such as the International Airport, can only be carried out with reference to some overarching vision of future patterns of physical growth and change that are desirable for Macau – whether or not this vision is translated into a «comprehensive plan» in the western tradition" (Taylor, 1993b, pp. 59-60).

Land Reclamation

As Bruce Taylor explains, "some of the best examples in Macau of planned new developments are the various areas of reclaimed land. (...) Newer reclamation, on the other hand, provide an excellent opportunity to observe and assess the extent that forward thinking – or planning if you like – has been able to at least assist in producing improvements in living conditions and a better overall quality of life in Macau, taking into account the economic, political, and other contexts that affect all local development." (Taylor, 1993b, p. 60)

Reclamation policy is also important as the governmental financial source comes jointly from the gambling receipts and the land concessions granted by public auctions. Therefore, planning reclamation areas, even small ones, and their approval process by the *Grupo de Terras* in which China representatives have a decisive role, is crucial for the public financial balance.

The NAPE (Novos Aterros do Porto Exterior) and “Nam Van” (Praia Grande) reclamation

The promotion in the 1980s of these two under construction enterprises is a result of the strategies explained earlier and also a solution to some other technical problems – the *Praia Grande* Bay silting menace and traffic congestion.

Design options of these all newly planned areas, according to Bruce Taylor, are linked to early ZAPE (*Zona de Aterros do Porto Exterior*) planning experience. Shortly he observes that “*from a mostly laissez-faire, informally administered regulatory framework operating within broadly-conceived guidelines, exemplified by ZAPE, the pendulum has shifted in the opposite direction to very tightly-controlled, legally enforceable, and minutely detailed sets of regulations, such as those applied to both the NAPE and Nam Van projects*” (Taylor, 1993b, p. 67).

After decades of plans’ promotion the first plan being “published”⁹ on *Boletim Oficial* which corresponded- to an expressed wish of the Administration to improve quality in the construction sector since the application of clear design rules.

However, Taylor’s opinion is that such discipline is not flexible to the market fluctuation and becomes the promoters’ penalties. “*End users who seek to rent or purchase offices, flats, or commercial space in new buildings constructed on these reclamation will find their choice restricted*” as the use like area ratios is strictly defined (Taylor, 1993b, p. 70).

Taylor’s “doubts” are extended to the “impersonal and dehumanising scale adopted in both new development projects” as Macau’s friendly scale given by a hybrid Chinese/Portuguese architecture has been identified by several operators as one of its “facilities”:

“Despite rampant destruction of the historic townscape, large parts of Macau (including, notably, the Praia Grande and especially its southern extension, Avenida da República) are still blessed with a sense of human scale in which the observer blends comfortably into his/her surroundings rather than feeling overwhelmed by them. The megastructures planned for NAPE and, especially, for the Nam Van development – such as the solid wall of «prestige» residential buildings planned for Zone A, fronting on the artificial lake – represent perhaps the antithesis of human scale (...). And there is no question that the prominence of these new developments will lead to sharply changed public perceptions of the character of urban Macau: «shiny and new» perhaps, but also hard-edged, monumental, mechanistic and, ultimately, oppressive in nature

rather than humanistic, accessible, and fundamentally satisfying.”
(Taylor, 1993b, p. 72)

I would like to reinforce however, as an architect working in an urban planning department, the success of these operations depends largely on the layout of the outdoor and public spaces, precisely those aspects able to pinpoint the urban character.

Unfortunately like in the ZAPE's case, there is somehow a lack of a wide definition on these “layers” – green structure, urban furniture, urban light schedule – whose networks if conceived according to the street hierarchy plan under proportional dimensions will contribute to urban quality.

Taipa/Coloane Reclamation

Having been planned since 1992 by the GADA¹⁰, the 620-hectare study (530 hectare of which is reclaimed land) bounding Taipa and Coloane islands has laid out broad objectives on the reduction of the high occupation density in the peninsula (the city) and the interface terminals' implementation of the main communication infrastructures, in a completely new planned space: i.e. the international airport, the Ká-Hó container seaport, a thermoelectric central, the Guangdong-Zhuhai-Macau railway and station, and the linking runways to the Guangdong-Zhuhai-Macau highway.

This kind of infrastructure usually implies phased expansion as its evolution depends on the economic performances. So to provide market variation adjustments five phases of implementation were planned clearly exceeding 1999's horizon. Induced activities as cargo operations, storage, office and housing demands, are also expected and previewed¹¹.

Conclusion

“Current plans will enlarge the size of Macau from a just under 17 sq.km. to over 28 sq.km. shortly after 1999. However, this geographical growth will not be enough (...) to help alleviate the estimated 250 million pataca budget deficit in 1992. One member of the Guangdong Provincial Academy of Social Sciences has advocated incorporation of Xiaohengqin (D. João) and Dahengqin Islands (Montanha) into Macau in 1999 which would give the Special Economic Region a total area of over 50 sq.km. There is historical precedent for this move as Portugal had put forward claims to these islands in the past. (...) However, any decision to incorporate these islands into Macau is not likely to be made public before 1999 and will be dependent upon future socio-political developments as much as upon economic advantages.” (Edmonds, 1993a, pp. 889-890)

The International Airport and the Sea Terminals (The Ports)

i) Macau International Airport

I need hardly underline how decisive this infrastructure is to Macau's future. In a rather symbolic way, its "weight" can be estimated by simple observation of the territory's latter map representations and can be more seriously verified by analysing the financial consequences of its construction¹². The success of its operation represents almost Macau's last chance of returning to its original vocation – an interface hub port – within economic viability and a useful role in the wide region, without necessarily endangering its heritage.

This seems to be understood even by Beijing authorities regarding to the PRC political and economic support¹³ to the airport project.

Project Development

"The airport is being developed by CAM – Sociedade do Aeroporto Internacional de Macau, on the basis of a concession granted by the Government of Macau" (CAM, 1993?).

"Although the idea of building an airport in Macau dates back to the 1960s, it was not until September 1989 that reclamation of land and construction of an airport to the east of Taipa and Coloane began. However, the Macau International Airport with its 3,320 metre long runway which will be able to handle jumbo-jets should be completely by July 1995¹⁴ at the cost of at least 7,500 million patacas (twice the original 1988 projected cost) and serve 4.5 million passengers plus 121,000 tones of cargo by the year 2000. Its importance in Macau's links with Greater China are immense with the main route destinations expected to be mainland China and Taiwan. However, it will not rival Hong Kong's new airport at Chek Lap Kok which should have capacity to handle ten times as many passengers." (Edmonds, 1993a, pp. 887-888)

"The government has also set up AACM, a Civil Aviation Authority, to deal with aviation-related matters such as negotiation of air traffic rights and drafting legislation. AACM is talking to over 20 international carriers on possible usage of the new airport." (CAM, 1993?)

Passenger Markets

The Executive Summary prepared by Wilbur Smith Associates (WSA, 1994) to CAM-Sociedade do Aeroporto Internacional de Macau, SARL, identifies four air passenger markets:

- *Macau Visitor Market*: tourists, visitors and business people;
- *Hong Kong Secondary Market*: transferring surplus passengers to/from Hong Kong;
- *China Market*: final destination or transfer point to/from China;
- *“Local” Market*: Macau resident trips with Zhuhai residents and visitors.

According to this report “*Macau Visitor and Hong Kong Secondary markets are the most important, making up around 80% of the throughput between them. Of these the Macau Visitor market contributes most to the airport revenue, since these passengers are largely transferring and thus do not pay the departure taxes.*”

The growth rates are expected to “*start at around 9% in the early years*” (1995-1999) “*and gradually decrease to about 6% towards the end of the period*” (2004-2009) ¹⁵.

Air Cargo Market

The WSA Executive Report considers the PRD cargo market “*extensive*” and Macau “*well placed to capture a sizeable share of this market*”. To the revenue forecast basic scenario it is expected that at least one of the freighter cargo carriers (Federal Express, TNTI, DHL, etc.) will locate its regional hub in Macau, and volumes are “*expected to increase at a conservative 5% per year*”.

ii) *The Container Terminal*

The non-existence of a “*deep water*”¹⁶ container terminal distresses Macau’s import/export market, as “*approximately 90 per cent of the goods entering and leaving Macau do so by sea with the majority of shipping being floated over on barges from Hong Kong after transfer from large ocean-going vessels. This has made transport costs in and out of Macau more expensive than Hong Kong. To alleviate this problem, a contract to expand Ká-Hó Bay on Coloane into a deep water port with a capacity to handle 80,000 standard containers (TEU’s) per annum was signed in 1988. Although the container terminal at Ká-Hó was officially inaugurated in December 1991, local shippers have been reluctant to move their operations from the Porto Interior on the Macau peninsula to the new port. (...) In late 1992 work began on construction of an oil ter-*

minal near the container port site primarily to serve the new airport” (Edmonds, 1993a, pp. 886-887).

This oil terminal will put an end to some dangerous situations in the “city” since combustible products storage are nowadays stocked there on several small warehouses.

iii) *The “Porto Interior” Terminal*

The *Porto Interior*, literally “Inner Port”, is somehow the cradle of Macau. The decreasing amount of activities on this water front (mainly cargo and fishing unload) will allow the Public Works Ministry (DSSOPT) and the Marine Services (SM) to promote some urban actions in order “to give back” the port to the nearest neighbourhoods. Within the patrimonial protection and rehabilitation, commerce and services lodgement will be improved and the river passenger Terminal with departure and arrival boats¹⁷ to and from Guangdong, Kong Mun, Shekou and Wanchai, will be reinstalled in a new building.

iv) *The Hong Kong – Macau Sea Terminal*

This recent operational equipment is actually Macau’s main door considering the importance of our daily sea links with Hong Kong and other Chinese ports. On December 1993 Edmonds (1993a, p. 886) explained that “*about six million people*” were arriving to Macau “*by sea annually with jetfoils carrying over two-thirds of the passengers*”. This “*led to the construction of a new ferry terminal with a heliport on the roof (...) which should be able to handle a peak of 7,200 Hong Kong passengers an hour or about 13 million per annum*”. And concluded: “*The Hong Kong-Macau link has been useful for overseas Chinese many of whose ancestors came from the western side of the Pearl River delta and who have increasingly gone to visit this area via the territory since the early 1980s*”.

Jointly with the *Porto Interior* – on the west side – and the International Airport – on the south – the eastern *Porto Exterior* defines a triangle of arrivals and departures interface at the PRD entrance.

COMMUNICATION NETWORKS

As mentioned before, Macau is intended to become a “huge interface terminal” in the PRD. To achieve this goal, Macau will soon establish a net system of different transport types.

Traffic and Road Network

To ensure a close connection between the facilities described above, a peripheral east highway is planned. The construction of a 4.5 km new bridge – *Ponte da Amizade* – in the beginning of 1994, together with the “spinal” main road, were important contributions providing a rapid link between hinterland China and the Macau’s International Airport.

However this kind of infrastructure has little impact on the daily traffic of Macau. Indeed the traditional narrow streets of the older neighbourhoods and a “car culture” force the Administration to act on a very different level in order to regularise the flux.

For example, buildings’ reconstruction has precedence over new *Alinhamento*, whenever possible, but is obliged to street enlargement and construction of parking places for buildings over 20.5 meters high. An increasing sensibility to the heritage requires however some more inventive and complementary strategies. Civic behaviour promotion, better public transport services and the “offer” of public parking facilities located at the most fragile areas of the city, are initiatives that are being implemented.

Even so a master plan has recently been ordered to update basic data and identify the major points for a co-ordinated and integrated intervention.

Highway and Railway

“The present linking road to the hinterland through Portas do Cerco (Zhuhai) does not have the necessary conditions to become a corridor which may respond to the capacity of the expecting traffic of people and goods. It is an inserted link in the Macau/Zhuhai urban tissue owing to the inconvenience and difficulties in getting access to main transportation centres: Ká-Hó port, Macau International Airport, the industrial and harbour areas being developed on Zhuhay districts and its nearby areas.” (GADA, 1994b, p. 3, translated)

As I have exposed earlier in the discussion on Taipa-Coloane reclamation, new, wide and rapid linkages to PRC – a highway and a railway – are provided, departing from the International Airport of Macau (IAM)¹⁸.

“The Zhuhai-Macau railway will be a 26-km-extension departing from Zhuhai future station, located in the northeast of CPR’s Hezhou island, to the planned station of Macau (...) nearby IAM. Along its extension an intermedium station is planned: Hengqin station to be set in between D.João-Montanha (Xiaohengqin and Dahengqin) islands where Chinese authorities plan a city for 100,000 inhabitants.” (GADA, 1994b, p. 3, translated)

Conclusion

“Within the coming few years Macau will be closely connected to its neighbours and the other parts of the world:

- a) by land: superhighway and railway connecting Macau with Guangzhoushi and many other Southern Chinese cities;*
- b) by sea: via jetfoil and ferry to Hong Kong and other parts of Southern China;*
- c) by air: via the international airport to different parts of the world.*

The new transportation linkage will bring the thriving Chinese cities closer to Macau like never before, allowing Macau to actively participate in the economic growth of the Pearl River Delta, with a population of over 22 million. With the new transportation system, Macau will be more closely connected with many of the westerly cities in the Pearl River Delta than Hong Kong or Shenzhen.” (CAM, 1993?).

TELECOMMUNICATION SERVICES, ELECTRICITY AND WATER SUPPLY

Thus as Edmonds noted: *“lack of telecommunications no longer hampers Macau’s ability to compete with Hong Kong as it did in the 1970s. There has been major development which commenced in the 1980s, including the construction of a satellite communications dish on Coloane which became operational in 1984.” (Edmonds, 1993a, p. 890).*

Meanwhile, satisfactory services are rendered by concessionaire enterprises: telephones by CTM, electricity by CEM and water supply by SAAM¹⁹. Nevertheless their strategic importance implies not only a close surveillance by the government but also an active suite and collaboration.

ENVIRONMENTAL BASELINE CONDITIONS

Once again Edmonds’ studies are quoted as a good synthesis on the theme concerned:

“(…) Recent economic growth has led to increased environmental degradation. Rapid development has put the remaining natural flora and fauna under severe threat. Although water purification facilities are excellent, the lack of wastewater treatment facilities lead to water pollution. A wastewater treatment plant and sewer construction are now

under way (...), and a solid waste incineration centre completed on Taipa in late 1992 is predicted to have enough capacity for the territory up to AD 2010.” (Edmonds, 1993b, p. 26)

Some wider strategies as basic infrastructure for sewage treatment and pluvial network construction are meanwhile changing basic conditions in Macau. The early construction of the Macau’s Residual Water Treatment Station (*Estação de Tratamento de Águas Residuais – ETAR*) is precisely the most significant achievement of Macau’s sewage network system regulation. This project has been conceived as a “zero pollution” model. It means that residual mud is incinerated at its liquid phase. Thus there is no need of outfalls in the river.

URBAN PATRIMONIAL POLICIES

Cultural policies are generally important for some complementary reasons: social identity consolidation, human resources contribution (within education) and economic promotion (urban marketing).

In order to endow Macau with a regional “image” the government is working hard in organising some seasonal events – Arts Festival²⁰; International Music Festival; Macau Grand Prix – mainly supported by the ICM (*Instituto Cultural de Macau*) which co-operates with *Serviços de Turismo* the Adjunct Secretary for Tourism and Culture.

Nowadays, no one will deny the advantages on maintaining “*the Portuguese element in Macau’s past*” (Edmonds, 1993a, p. 904) namely by architectural (and urban) preservation. For achieving this purpose, the ICM has established a specific department and “operations” are in progress over some relevant neighbourhoods.

Nevertheless I think it would be necessary to overstep the superficial and isolated understanding of these interventions. Indeed urban rehabilitation policies require deeper and more far-reaching strategies over the city as a whole: e.g. networks’ re-evaluation and suitable new uses of older buildings and urban spaces.

Edmonds opinion is that “*Macau’s Portuguese past can be maintained as an attraction for tourists from the increasingly prosperous countries of East and South-east Asia. Therefore, the Macau Special Economic Region and China would be wise to control local developers and preserve as much of the remaining traditional Portuguese colonial flavour as national pride permits – particularly as Macau’s other major current tourist revenue generator, the virtual monopoly of regional gambling, is likely to be broken after 1999.*” (Edmonds, 1993a, p. 905)

Despite the “intertwined destinies” of “Macau, Zhuhai, Zhongshan, Jiangmen and Foshan”, Edmonds regrets that “growth and integration with Greater China so far has caused Macau to lose the characteristic which allows it to make a special contribution to this new economic force – its unique historical and cultural character” (Edmonds, 1993a, p. 906).

ECONOMY AND INDUSTRIAL DEVELOPMENT

The *singularidade* of Macau is expressed at the very different levels as I have been attending to. Bala Ramasamy and Annabela Leung²¹ considered the economy²² of the territory unique:

“It is indeed remarkable that a city with an area of only 17.32 square kilometres and a resident population of less than 400,000 in 1991 has such a robust economy. Macau recorded an average annual GDP growth of 7.83 percent between 1986 and 1992, with a GDP per capita of US\$11,300 in 1991. These two indicators put Macau among the most developed countries in the Asia-Pacific region.” (Ramamsamy and Leung, 1993, pp. 255-256)²³

They verified then that in the same period (1982-1991), “*in terms of value, trade has generally increased. However, closer investigation shows that the increase in the value of exports has been due to the increasing unit prices, while the volume of exports has been decreasing since 1989. Export prices have more than doubled in the ten years of our analysis. Imports, on the other hand, show an increasing trend both in volume and prices.*” (Ramamsamy and Leung, 1993, p256)

On this same forum and subject, Hon-Kong Tse²⁴ diagnosed:

“It is no secret that Macau’s industrial sector as a whole is in decline. Over the last few years, both industrialists and economists have repeatedly pointed out various interrelated problems facing Macau’s manufacturing industry.” (Tse, 1993, p. 219)²⁵

A summary of the above quotations: China and East Asian countries lower prices; labour-intensive manufacturing produces low value-added products; inadequate training on the work force; a manufacturing production over-reliant on the textile and garment sectors. The described board also explains why the same economists and businessmen suggested the next measures to reverse such situation: “*better education and training (...); change from labour-intensive production to capital-intensive production; production of goods of higher value-added identity, product diversification,*

market diversification, development of non-quota products, and in general, improvement of Macau's investment environment" (Tse, 1993, p. 220).

From the Administration's view, there is of course a more optimistic vision as basic infrastructure equipment and services are being disposed to provide a free market behaviour. Commenting for example 1994 economic data (Leal, 1995, p.9) – GDP decreased 12.1% to 5% in 1993 and 4% in 1994 – Vítor Pessoa the adjunct-secretary for the economy and finances, considered: *"this is a healthy deceleration as it signifies a decrease to levels of sustained development"*. To him *"Macau has lived an immoderate euphoria. The gambling receipts rose very much when Chinese gamblers overflowed the territory's casinos. When Beijing cut the exit of funds, Macau was affected and growing rhythms fell off."* Therefore to this governmental response, *"the decreasing itself is not a negative element; it only reveals an approach to real rates"*.

The article also underlines Macau's economy conversion process towards an economy of services. Leal mentioned Vítor Pessoa's opinion that the health condition of a service economy is not evaluated by commercial balance deficit – 2.05 million patacas last year in Macau's case- but by the current transactions' sale. «And such sale is positive» he ensures (Leal, 1995, p. 9).

Leonel Miranda²⁶ seems to have a similar opinion. Recently interviewed by the same periodical (Azevedo and Meneses, 1994, pp. 4-5) he said to explain the decreasing industrial activity in Macau:

"Today, the industry weight over economy cannot be measured as it was ten years ago. Because technologic development leads to a lower weight of the active population's employment. But (...) also because Macau is an overcoming economy of services, which is a benefit. (...) Macau is one of the cities in the world with more banking dependencies per capita."

Asked about Portuguese entrepreneurs' presence in China in the near future, he answered:

"I believe that from a perspective view of Macau's and the Portuguese entrepreneurs' interests, Macau should become the place to undertake the most prestigious activities of the enterprises (...) that means having the «software» here and the «hardware» in China."

CONCLUSION

To conclude we organised a kind of "Table of Contents" as an easy way of remembering the main lines I have been delineating:

- Firstly, I have been *placing Macau in the PRD context*: not only as an urban event but also as an entity with a comprehensive “character”, as much in the past as in the future;
- Secondly, *recognising and projecting its resident's profile*: mostly young, Chinese and prosperous, more and more seconded by the social, the economical and educational policies;
- Thirdly, *describing the “Land Use Strategies”* having been applied: the ports and the International Airport, the reclamation plans, the traffic and communication networks;
- Fourthly, *pointing to an economic conversion*: tourism, financial services, high value-added low-polluting industries.

It is however “*real worry that rapid expansion of the territory's land area and population by 2010 could destroy the ecology and the remaining architectural legacy of Macau,*” wrote Edmonds (1993a, p. 905), “*if so Macau would be better off if gave up trying to compete with Hong Kong, Guangzhou and Zhuhai*”.

Four centuries of history are arriving to a hinge. The success of the territory in the future will depend more on the resident's ability of understanding and fully utilising Macau's “uniqueness” than simply on applying a set of planned strategies. The political economy seems to be stable already but some more pragmatic measures are needed especially those related to the decision methods.

Macau is indeed “*a small partner, but it does not have to be a minor partner in the net of connections that characterise today's world*” (Vieira, 1992).

Notes:

1. “*Macau is by far the smallest entity in Greater China: neighbouring Hong Kong is more than 62 times larger and has roughly 11 times its population*” (Edmonds, 1993a, p. 878).
2. “*After 1543, when the Portuguese reached Japan, this post became an important market and a port of supply and refreshment for the Portuguese vessels*” (Calado, Mendes and Toussaint, 1985, pp. 23). “*In 1553, Leonel de Sousa, Commander of the Voyage to Japan, called at Macau and reached an agreement with the Chinese authorities, establishing special conditions for Portuguese trade in the region....*” (op. cit., pp. 31).

3. *“Ultimately, the small areal extent of Macau limits its ability to function as an independent economy. With rapid growth of manufacturing and tourism during the last 30 years, agriculture has virtually disappeared save for a few scattered vegetable patches. Roughly 90 per cent of agricultural products are supplied by China. Macau is also dependent on Guangdong for 70 per cent of its drinking water and for about 10 per cent of its electricity.”* (Edmonds, 1993b, p. 27)
4. *“Perhaps the new and particularly outstanding point (...) was the fact that during the Plano de Desenvolvimento Regional elaboration a very significant effort was made to present the space matrix of the interventions and investments (...) in such a clear and detailed way that did not exist in the Grandes Opções do Plano.”* (VITORINO, 1990, p. 29) (translation and underline are ours).
5. Bruce Taylor, Associated Dean on the Faculty of Social Sciences and Humanities, University of Macau.
6. Bruce Taylor (1993a), p. 6, quoted “A Survey of Asia”, *The Economist*, October 30 – November 5, 1993. See particularly pp. 7-12. To get an idea of the latter measure and budget investments made by Macau government on this field we will refer to Richard Louis Edmonds’ (Department of Geography, School of Oriental and African Studies – University of London; Faculty of Social Sciences and Humanities – University of Macau) quotation from *Linhas de Acção Governativa – 1991* in “Macau and Greater China”, *The China Quarterly*, December 1993, p. 903: *“In 1990 the Macau government issued a document calling for government assistance to private schools, to be accompanied by controls. A Macau-wide examination system was also proposed along with new plans to provide six years of compulsory education. In 1991, 12 per cent of Macau’s budget was devoted to education, a 40 per cent increase in funds over 1990. On 1 January 1993 a new Organic Education Law (Lei Orgânica para a Educação) came into effect which restructured the territory’s Department of Education and Youth Services.”* The same author, op. cit. p. 903, footnote 86: *“According to «91 As linhas de acção governativa», p. 43, nearly 700 Macau students were already studying with government scholarships at what is now the University of Macau in 1991. Between 1987 and 1992 close to 300 local pupils were trained at the University to take on responsibilities in the Macau government.”*
7. *“The reclamation of land from the sea has been a continuous process throughout Macau’s history. Older reclamations, such as Praia Grande*

- scheme of the 1920s that created the heart of today's central business district, are mostly of historic interest." (Taylor, 1993b, p. 60) Bruce Taylor also quotes Manuel Alves, "O Espaço Territorial de Macau" in D.Y. Yuan *et al., eds., Population and City Growth in Macau* (Macau: Centre of Macau Studies, University of East Asia, 1990).
8. Referring Jon Prescott, *Macaensis Momentum* (Macau: Hewell Publications, 1993). The discussion referred to is on p. 51.
 9. "Gazetted" on Bruce Taylor's expression. See references to this subject in Taylor, 1993b, pp. 63 and 71.
 10. From the Portuguese: *Gabinete de Apoio ao Desenvolvimento dos Aterros (de Taipa e Coloane)*.
 11. According to GADA data (GADA, 1994a, p. 2, translated), 150,000 inhabitants are anticipated and about 30,000 more are coming daily to work here. Visitors, students and tourists will sum 50,000.
 12. During 1992 "trade with PRC has been running at a deficit. (...) Imports from the People's Republic remain mainly primary materials and semi-assembled goods together with a strong growth in land fill material (...) presumably for the airport." (Edmonds, 1993a, p. 893)
 13. See Richard Louis Edmonds, 1993a, pp. 888-889: "A problem over the airport had developed between Macau and the neighbouring Zhuhai Special Economic Zone (SEZ). Zhuhai protested in 1990 that the development of an airport in Macau would create excessive noise levels over its area. What Zhuhai really wanted was approval by Beijing of its plan to expand a 1938 Japanese wartime airstrip on Sanzao Island into the SEZ's own airport. The consortium building the Macau airport(...), almost discontinued the project in 1990 because of the problems with Zhuhai. Then Zhuhai's opposition disappeared, presumably upon Beijing's insistence, and the Macau airport plans went ahead. (...) Macau's small size dictates that it must follow the whims of Beijing on the airport issue in the future as the territory effectively has no air space of its own."
 14. Diogo Pinto, CAM's President ratified this information on an interview to the weekly newspaper *Tribuna de Macau* 23rd December 94 p. 16: "It must be ready on 18th July 95 (..) charter flights could start on August". Yet the dailynews *Futuro de Macau*, 10th February 1995 (pp. 1 and 5), reported that Governor Rocha Vieira wanted "to replace the political mo-

- ment of the airport operationality on 1st January 1996*” by organising a meeting with all the representatives of the concerned entities. After all, as the periodical explained *“airport construction is the easiest part. (...) But the logistic co-ordination board is still needed (...). Nevertheless this business target, according to Rocha Vieira’s Executive data, could be anticipated in November 1995.”* (our translation).
15. WSA, 1994 (years between parenthesis of our responsibility).
 16. The low water depth around Macau peninsula and islands is a strong constraint to a sea port’s development strategy.
 17. According to the *Serviços da Marinha* (SM) data, 128,859 persons arrived Macau this way and 152,403 used it as departure port during 1994.
 18. *“During a visit by the Guangdong Governor, Zhu Senlin, to Macau in late September 1992, it was announced that Guangzhou-Zhuhai Railway will be linked to Macau along with the planned 110 kilometre Guangzhou-Zhuhai motor way, which is due to be completed in 1996. This is a key step forward for Macau as it will give the territory a chance to compete with Hong Kong-Shenzhen for domination of the West (Xi) River delta hinterland. As well as bringing increased trade with Zhuhai, Zhongshan, Jiangmen and Foshan, where China has already made significant road improvements in recent years, these links should make Macau a favourable outpost for goods from neighbouring West River counties of Doumen, Xinhui, Heshan, Shunde and Kaiping as well as some rural areas further to the west. Plans to improve navigation on the West river will also be of great benefit to Macau’s Ká-Hó port.”* (Edmonds, 1993a, p. 889).
 19. Edmonds, 1993a, p. 899, notes: *“In 1988 Macau negotiated with Zhuhai to supply water up to 1999 to make up for shortages in the local supply. According to Macau, Sér. 2, N°1 (Maio 1992), p. 97 the Companhia de Electricidade de Macau has invested enough funds in new electric generators on Coloane to ensure adequate electric supplies until 1995. Recent discoveries of natural gas on Hainan are more likely to be directed via pipeline towards Hong Kong than Macau.”*
 20. This years’ edition of the Arts Festival, issued on late March, was for the first time co-sponsored by ICM and *Leal Senado* (Macau’s Urban Council).
 21. Faculty of Social Sciences and Humanities, University of Macau.

22. "Macau's key industries are manufacturing, tourism and gambling. Industrial development, which began in the early 1960s with the textile and garment sectors, has been expanding into other fields such as toys, electronics, leather articles, ceramics and optical products. (...) Its main export markets are the European communities, United States, China and Japan." CAM – Sociedade do Aeroporto Internacional de Macau, SARL (1993?) presentation port-folio.
23. In this same statement (and page), the importance of regional economy is stressed this way: "(...) in the ten-year analysis from 1982 to 1991, (...) world economies are undergoing a process of transformation. One such transformation is economic regionalism. With the on-going failure of the GATT, countries are beginning to consider regional trading that the world in future will consist of three blocs, the Americas, Europe and Pacific."
24. Faculty of Social Sciences and Humanities, University of Macau.
25. As examples of studies on the subject this author points: Ieong, 1992, pp. 3-7; Chong, 1992, pp. 8-10; Yeung, 1993, pp. 29-36.
26. Leonel Miranda is both the *Gabinete para o Plano a Médio Prazo* coordinator and the Administration President of Air Macau.

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**HONG KONG'S TERRITORIAL
DEVELOPMENT STRATEGY
(TDS)**

Hong Kong's Territorial Development Strategy: A Review at the Threshold

E.G. PRYOR

FOREWORD¹

Over the past five years, work has been proceeding on the comprehensive review of the Territorial Development Strategy (TDS), involving a complex range of contributory studies. In 1993, a consultation digest was issued to seek views from the general public, community bodies and professional and academic institutes. Visits have also been made to various parts of the Pearl River Delta to gather information at first hand and to exchange views with counterpart specialists. A point has now been reached at which the final stages of the review are being completed, based on a set of principles derived from the earlier stages of work and feedback from public consultation. The end result of the process will be to produce for two regional development scenarios a long-term recommended strategy (up to 2011) from which a medium-term strategy (up to 2006) of “common components” and associated outline programme of works will be derived. It cannot be expected that the TDS Review will provide a complete answer to all development-related issues and there will be a subsequent need to extend our studies into new areas of concern. In particular, the way in which the complementarity between Hong Kong and the Pearl River Delta can be strengthened and made more efficient will be a key issue.

INTRODUCTION

Hong Kong is a very “land hungry” place and the Government has, for many years, been proactive in forecasting long-term needs for various kinds of development and in the commitment of considerable resources to the creation of a land bank from which sites can be released in a timely way to meet the various needs of the community. To that end, over the past three

decades, major land formation works have been undertaken in the New Territories and around the Metro area, both by means of reclamation and through land-based site formation.

On the basis of past trends and forecasts of future requirements for a range of land uses to meet the evolving needs both of this community and the pressures arising from economic growth in the wider region of South China, the Hong Kong Government has, since 1991, focused efforts on reviewing its Territorial Development Strategy (TDS). The aim is to create an updated land use – transport – environmental framework to provide a basis for detailed planning and the implementation of works within limits set by resource availability.

The TDS Review has been undertaken on the basis of a carefully devised, corporate process of inter-related studies, a summary of which is presented by the chart in Figure 8.1. In brief, the process involves the iterative formulation and evaluation of a reducing number of increasingly more detailed options for the following two, broad regional development scenarios:

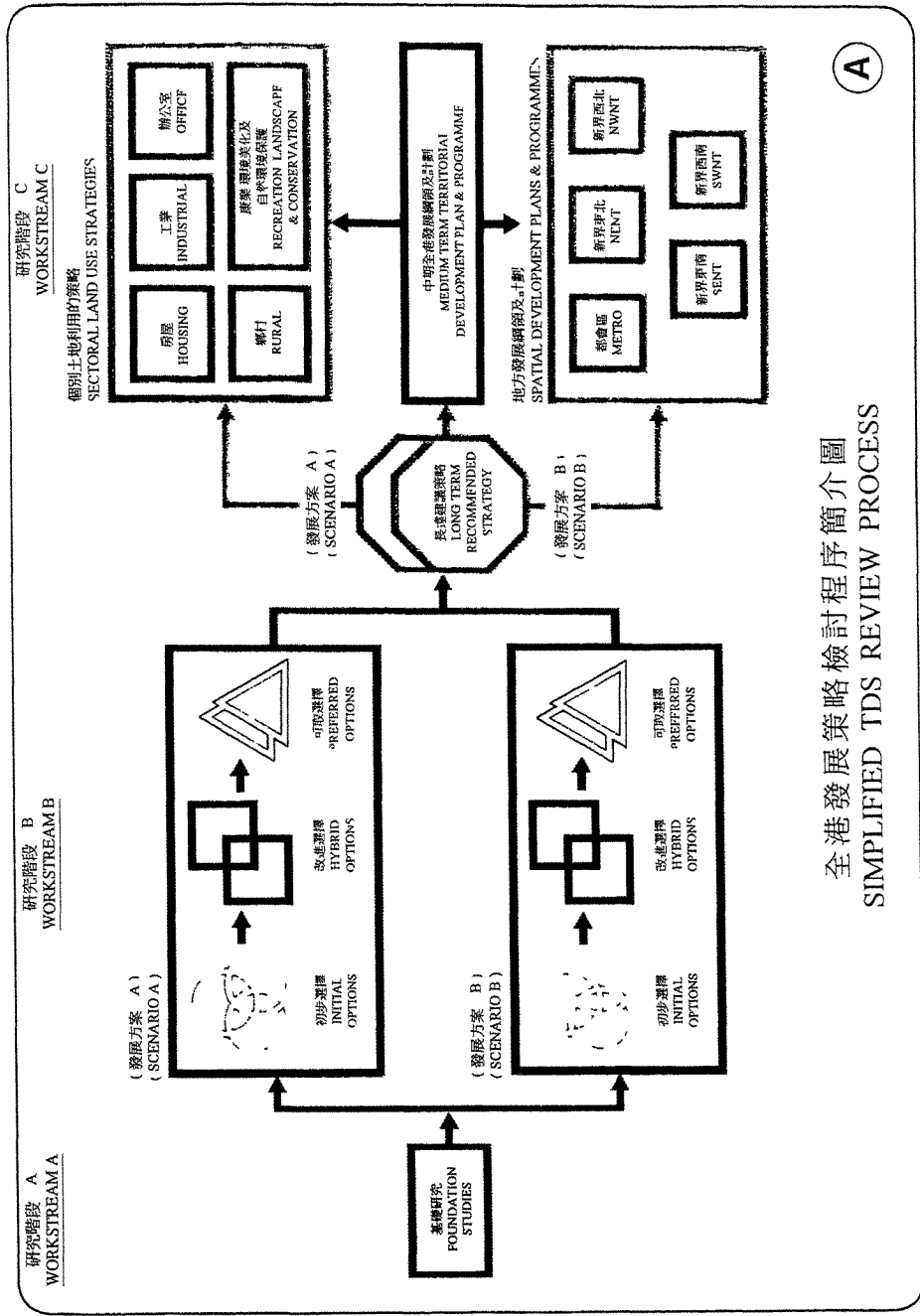
- **Scenario A:** assuming that the Pearl River Delta (PRD) will be the major economic hinterland of Hong Kong over the long term. This scenario is primarily trend-based, having regard to currently perceived patterns of growth in the PRD and the resultant interactions with and impacts on Hong Kong.
- **Scenario B:** assuming that Guangdong Province and other inner provinces of China will be the major economic hinterland of Hong Kong. This scenario is also both trend-based and takes account of the “Open Door” policy of China.

Scenarios A and B are not necessarily mutually exclusive but may be taken to represent a progression in the extent to which Hong Kong develops economic ties with the hinterland. The rate at which growth takes place and the degree of competition from other key cities in China will affect the timing and scale of provision of serviced land and infrastructure in Hong Kong, as well as the level of environmental impacts on the territory.

A stage has now been reached at which a set of “Hybrid Options” has been released for public consultation, the results from which have been taken forward to create a prototype “Preferred Option” for each of the two scenarios.

The prototype Preferred Options will be subjected to various tests to see how they perform against various objectives, as summarised at Appendix A.

Figure 8.1 Simplified TDS Review Process



全港發展策略檢討程序簡介圖
SIMPLIFIED TDS REVIEW PROCESS

Further refinements will be made until a stage is reached at which a Recommended Long-Term Strategy for each scenario derived comprising:

- a broad development pattern and associated key infrastructure systems;
- a set of broad sectoral land development principles relating to major urban and rural land uses;
- an outline of the strategic role and functions of each sub-region in the territorial context; and
- an assessment of the land use, transport and environmental implications of the postulated growth pattern relative to the principal TDS objectives and goal.

There will also be produced a Medium-Term Strategy (up to 2006), comprising:

- a plan showing “special” key components (e.g. the new airport) and the common growth elements of the two long-term Recommended Strategies (e.g. new urban zones) for action in the medium term;
- a proposed Outline Programme of Works, setting out an indicative sequence/phasing for each of the growth areas, as well as for associated key infrastructure systems and environmental mitigation measures; and
- an assessment of the broad financial implication for the implementation of strategic development projects.

To assist in the understanding of this paper, a list of key terms and associated definitions is set out in Appendix B.

LAND: THE KEY PRODUCT OF THE TDS

Subject to the availability of adequate resources, the key product of the TDS Review will be the selection and, ultimately, the provision of serviced land for additional new town development; for the restructuring of the Metro area; for the development of new port and airport facilities; for the provision of “special” facilities such as new power stations; for the upgrading and extension of trunk roads and railways; and for the provision of new environmental protection infrastructure facilities, such as sewage treatment plants.

Given the fundamental importance of land to the long-term strategic growth of Hong Kong, this paper first focuses attention on the general question of land formation (either by means of reclamation or from land-based sites) and, secondly, on the need for a rational approach to help determine the best choice between all potential strategic growth areas to help satisfy the community's needs for various kinds of land uses. Finally, some thoughts are then presented on the current state of play for the TDS Review and the subsequent steps that will be taken to bring our studies to fruition.

SOME GENERAL PRINCIPLES FOR THE SELECTION OF STRATEGIC GROWTH AREAS

Regardless of whether land is to be formed by reclamation or by reutilisation of existing land resources, which might also require formation works, there are certain principles which need to be taken into account in identifying areas for strategic growth. Briefly, it is seen that areas selected for development should be:

- of "adequate" size and shape to facilitate comprehensive planning and development and, in the process, help achieve economies of scale. No hard and fast rules can be laid down as to what might be considered an optimal size but, as broad yardsticks, the recently formed West Kowloon Reclamation covers about 320 ha and the proposed Green Island Reclamation totals about 190 ha;
- capable of being implemented in a logical sequence of phases, bearing in mind possible delays that might arise over the programming of works due to the constrained availability of resources or for other unforeseen reasons, such as undiscovered geotechnic problems;
- under consolidated land ownership and relatively free of such encumbrances as existing permanent or temporary uses, "fung shui" limitations, legal claims etc.;
- within close and convenient proximity to sources of fill needed for reclamation and/or for raising the levels of land-based sites;
- free of any difficult geotechnic problems or other major natural (e.g. recurrent flooding) or man-made hazards (e.g. close proximity to a potentially hazardous installation);
- in locations to which timely and cost-effective provision can be made for public transport services and utility systems;

- compatible with existing adjoining uses in terms of environmental, aesthetic and functional attributes;
- situated in locations that would not cause irreparable damage to important areas of natural habitat (e.g. fish breeding grounds), ecological value (e.g. Mai Po Marshes) and high landscape/recreational value (e.g. Country Parks);
- upwind of any major source of aerial pollution from fumes and/or particulates;
- well buffered from major static (e.g. shipyards) or mobile noise emitters (e.g. a trunk highway);
- capable of being developed in a way that enables any unwanted by-products (e.g. polluted mud) to be treated or disposed of in a satisfactory manner; and
- capable, in the case of reclamations, of being formed in such a way to obviate any unacceptable impacts on tidal regimes, water quality, sedimentation, shipping movements and other port activities.

It cannot be expected that every area will meet all the above criteria. Nor can it be assumed that every area would be capable of being used for any of a general range of land uses. On such accounts, areas need to be ranked according to their potential suitability for various major land uses. This can be done by measuring different attributes according to a scale of values and combining such attributes by means of computerised techniques to produce maps showing potential development areas according to degrees of suitability (see the section on Potential Strategic Growth Areas below).

RELATIVE MERITS

Regardless of whether new land for urban growth is produced either by reclamation or from existing land-based sites, there is a whole range of points in favour of and against either choice. Not only is Hong Kong a “land hungry” place, it is also a compact territory where various constraints interact to limit the choice of potential strategic growth areas.

Land-Based Sites

To begin with, about 40% of the territory comprises co-incidental water catchments and country parks (Figure 8.2), in addition to which there are

other large expanses of hill country that are geographically unsuitable for development. Yet other land based, rural areas are a complicated “jigsaw” of small holdings, village settlements, unplanned container storage sites, flood prone lowland areas, abandoned land, pig and chicken farms, golf courses, fish ponds, “fung shui” areas, burial grounds, wrecked car dumps, sites of special and scientific interest, etc. Further difficulties that are becoming increasingly apparent include the problems of finding conveniently located sources of fill in sufficient quantities and recurrent flooding due to the loss of natural ponding areas (e.g. through the infilling of fish ponds) and the blockage of drainage systems.

On the other hand, where a developer has managed to assemble a sufficient area of land, the opportunity may arise for creating a comprehensively designed scheme that can offer people an attractive new life style away from but still reasonably close to the crowded city. Also, provided adequate infrastructure is available, such schemes can make use of private investment resources, thus indirectly releasing public sector resources for other purposes.

Reclamations

In the case of marine areas, the choice of sites for new development through reclamation is constrained by such factors as the need to conserve certain areas for their recreational, landscape and ecological value; the need to ensure that key areas are safeguarded for the development of new port and airport facilities; the depth of littoral waters and mud deposits; the availability of easily accessible sand deposits of adequate quantity; the need to find suitable mud disposal sites, especially for contaminated sediments; the need to avoid creating problems in respect of the hydrological regime of the harbour and so on (Figure 8.3).

On the other hand, reclamations offer a number of distinct advantages in that relatively large areas of sea bed under government ownership can be used; reclamation works can be speedily completed, especially with the use of dredged sand deposits that can be hydraulically delivered to the site; the ratio between land sales revenues to formation costs is usually high (5:1 in the case of the West Kowloon and Kowloon Bay reclamations); areas of polluted water caused by contaminated mud deposits can be eliminated; and comprehensively designed layouts can be produced in close juxtaposition to already developed and serviced city areas.

Figure 8.3 Physical Model for Testing Hydraulic Impacts of Harbour Reclamations

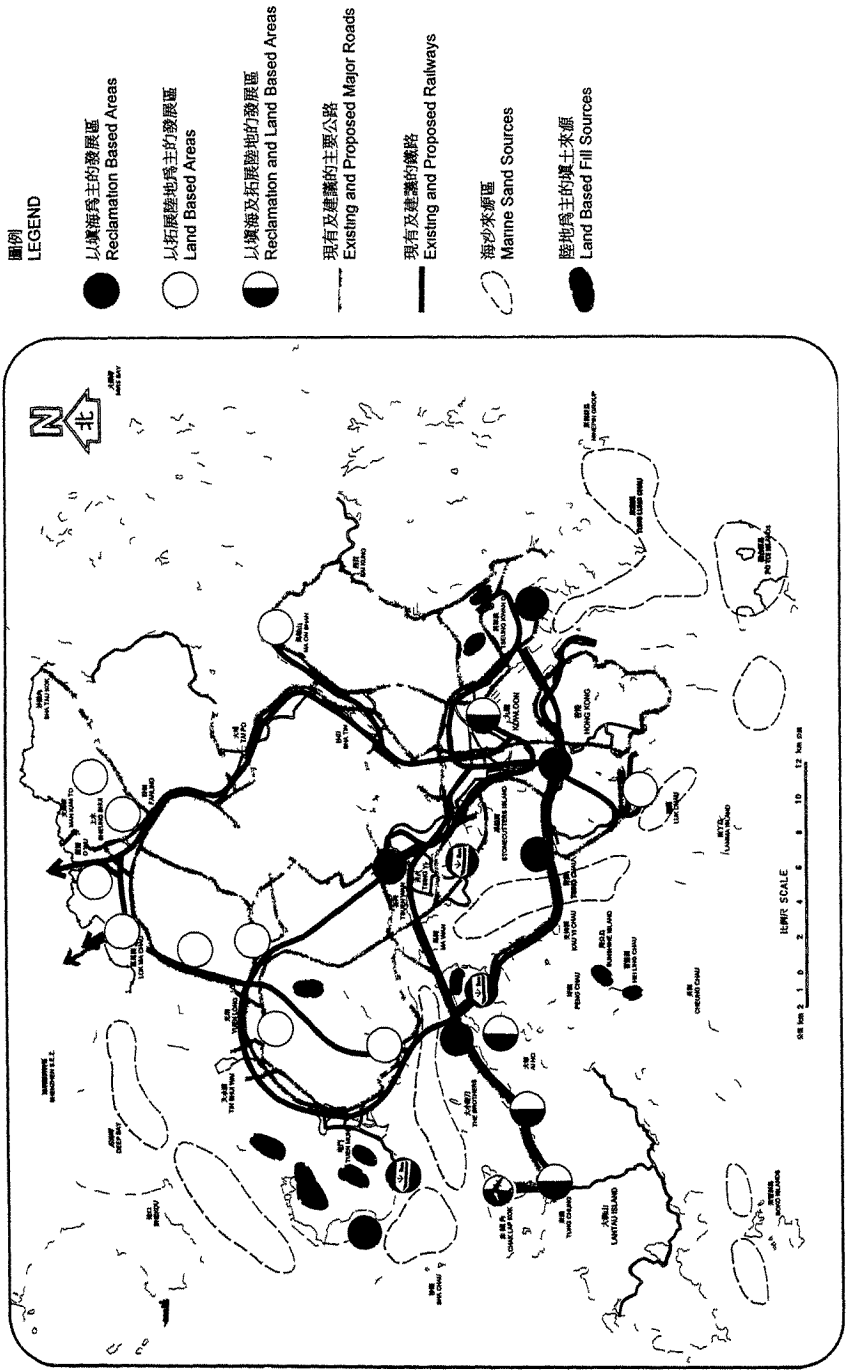


POTENTIAL STRATEGIC GROWTH AREAS

To help identify potential strategic growth areas, a computer-based Land Use Potential Analysis (LUPA) Model is being developed. This comprises a number of geographic-based layers that record for each “polygon” a measured attribute incorporating (where appropriate) a predetermined scale of values (e.g. susceptibility to flooding, geotechnic stability etc.). The data can then be aggregated within a standard grid of any pre-set scale to indicate levels of suitability for various potential uses according to a chosen set of rules (e.g. land with a high potential for general urban use = publicly owned land, 10 ha or more in size, an average gradient not to exceed 10%, not subject to flooding, no underground marble caverns, within 400 m of a public transport route, utility services available or planned etc.).

From the work completed so far, we have been able to identify a number of potential strategic growth areas, the general disposition of which is shown by the plan in Figure 8.4. Such areas have an estimated potential to

Figure 8.4 Potential Strategic Growth Areas



accommodate about 1.6 million people, over and above “Base Growth” areas of existing and committed development that have a capacity of about 6.5 million (Table 8.1). In this connection, Strategic growth areas may be grouped into

Table 8.1 Estimated Population Capacity of Potential Strategic Growth Areas

Potential Strategic Growth Area	Broad Type RA: Reclamation Area LB: New Land-Based Site RD: Redevelopment	Potential Population Capacity ('000)
1 Redevelopment (including in Metro) through up zoning and intensification	RD	say 230*
2 Kai Tak – Kowloon Bay, Phase 1	RD + RA	176
3 Kai Tak – Kowloon Bay, Phases 2 & 3	RD + RA	109
4 Green Island	RA	124
5 Central-Wanchai Reclamation (part)	RA	14
6 Tsuen Wan Bay	RA	30*
7 Hong Kong Island South	LB	60
8 Tseung Kwan O, Phase III	RA + LB	50
9 Tseung Kwan O Extension	RA	120*
10 Tung Chung/Tai Ho	RA + LB	235*
11 North Lantau Extension	RA + LB	115*
12 Kam Tin	LB	36
13 Lok Ma Chau/San Tin	LB	18
14 Yuen Long South	LB	30
15 Fanling North	LB	20
16 Tuen Mun – Yuen Long Corridor	LB	50*
17 Tuen Mun East	LB	10
18 Border Zone	LB	100*
19 Other (Scattered Rural-based Sites) RD	LB	25
		1552 (say 1.6 Mn)

* Provisional estimate

- **Strategic Common Growth Areas (SCGAs)**, comprising areas, the attributes and current development status of which make them suitable for incorporation into all development options e.g. remaining, “uncommitted” development areas in the new towns.
- **Strategic Optional Growth Areas (SOGAs)**, comprising potential development areas required to meet any remaining balance of strategic growth needs and in respect of which the disposition thereof may vary between development options.

MAKING A CHOICE

Hong Kong must continue to develop its hub functions as an entrepot and service centre for South China; as an international centre for business and finance; as a centre for professional and academic expertise; as a city of culture; as a base for high technology industry and research; as a nodal point for regional communications and information dissemination; and as a major tourist destination and conference centre. To that end, it will be essential that we complete as quickly and as rationally as possible an overall framework for strategic growth, making optimal use of its potential land resources and associated infrastructure systems.

Thus, in the formulation of TDS Review, a key task is to identify all potential new development areas that are either land-based or could be created by reclamation (Table 8.1). The total potential capacity of such areas for different kinds of development then needs to be compared with the projected, territorial needs for various, broad categories of land use (Tables 8.2, 8.3 and 8.4). This may lead to three outcomes:

Table 8.2 Estimated Quanta of Population and Jobs for which New Strategic Growth Areas will be Required (1994 - 2011)

Category	Population (millions)	Jobs (millions)
Base Growth Areas	6.52	3.15
Strategic Growth Quanta		
• Scenario A	1.00	0.50
• Scenario B	1.58	0.83
Total by 2011		
• Scenario A	7.52	3.65
• Scenario B	8.10	3.98

Table 8.3 Estimated Additional Land Required for Major Urban Uses (1994 - 2011) (in ha)

Scenario	Housing	Offices	Industry		Total
			General	Special	
Gross Hectares					
Scenario A	580	54	124	136	893
Scenario B	850	66	175	397	1488

Table 8.4 Forecasts of Land Needs for Port Facilities

Port Facility	Measure	1996	2001	2006	2011
Cumulative Totals					
1. Container Terminals					
(a) No. of Berths	No.	16	28	38	42
(b) Area of Land	Ha	323	515	637	789
2. Container Terminals, Off Port, Back Up					
	Ha	162	258	319	395
3. Mid Stream Cargo Handling Areas					
(a) Waterfrontage	Metres	5390	6777	6927	7202
(b) Area of Land	Ha	83	114	116	122
4. River Trade Terminals					
(a) Waterfrontage	Metres	2732	6051	4390	4665
(b) Area of Land	Ha	50	109	157	231
5. Public Cargo Working Areas					
(a) Waterfrontage	Metres				
(b) Area of Land	Ha	20	20	20	20
6. Total Area of Land					
	Ha	638	1016	1249	1557

- **Outcome 1** : there is a significant excess potential to satisfy projected needs;
- **Outcome 2** : there is just enough potential land to satisfy projected needs;
- **Outcome 3** : there is insufficient potential new land to satisfy projected needs.

For Outcome 1, the key issue will be how to make a rationale choice between the potential strategic development areas relative to agreed objectives. This situation would be relevant to the strategic growth needs projected for regional development Scenario A.

For Outcome 2, the main concern that is likely to arise would be in respect of the phasing of land development relative to the timely provision of essential infrastructure services, also having regard to other strategic development objectives (e.g. creating a more balanced distribution of population and jobs). This situation would be relevant to the strategic growth needs projected for regional development Scenario B.

For Outcome 3, it would be necessary to examine such options as extending the search for new land resources into previously discounted “marginal” areas; finding ways to reduce the scale of land use demands, for example, by increasing densities of development; and making fuller use of any redevelopment potential. This situation would arise (as seems likely) should the territorial strategic growth needs projected for regional development Scenario B subsequently go beyond the capacities of potential strategic growth areas.

As noted at the start of this paper, making a rational choice requires the consistent application of a complex, iterative process whereby a range of increasingly detailed but reducing number of land use – transport development patterns are tested against a number of agreed objectives (Appendix 8.A). We are now at a stage at which such an approach should soon lead to decisions in favour of a preferred course of action for both Scenarios A and B.

PROTOTYPE PREFERRED OPTIONS

In producing a set of “prototype” Preferred Options, the following principles have been assumed, based on the outcome of the results from the evaluations of the Hybrid Options:

- the scale and type of development should generally be commensurate with various environmental and infrastructure thresholds;

- new strategic development areas should be selected to optimise the utilisation of planned/committed infrastructure;
- within the Greater Metro Area, there should be a preference for relatively high density, mixed use development, especially around major transport interchanges, to optimise the use of services and to help achieve a “better” population/job balance;
- more emphasis should be given to the provision of rail-based transport systems to facilitate the movement of people and goods and, indirectly, help mitigate environmental problems (noise and air quality) that would otherwise arise from a greater reliance on motor vehicles;
- opportunities should be identified for the creation of new employment foci outside the CBD within the Metro area and progressively to non-Metro areas to achieve a “better” job distribution and help spread traffic loadings on road and rail systems;
- more emphasis should be given to the upgrading and “cleaning-up” uncoordinated development in areas of urban transition;
- a choice of locations and broad range of land uses should be provided to produce a strategy that can satisfy needs for housing, offices, industry and port back-up facilities in response to market demands and community requirements;
- provision should be made for the progressive development of a N-S technology corridor to strengthen and diversify the economic base of the territory and to support the growth of related activities in the wider region; and
- every practical endeavour should be made to protect and conserve areas of high landscape, outdoor recreation and ecological value.

Such guidelines are not necessarily mutually exclusive. Additionally, the above principles have to take account of the need for new trunk highways and railway links to enhance the role of Hong Kong as an entrepot and service centre for the wider region.

ASSUMED DISTRIBUTION OF POPULATION AND JOBS FOR INITIAL TESTS OF PREFERRED OPTIONS

From a combination of Base Growth and an assumed spatial distribution of Strategic Growth, a sub-regional distribution of population and jobs has been

produced to create an prototype set of Preferred Option for 2011 for Scenarios A and B, as set out in Table 8.5. For both scenarios, there would be a concentration of population in the Metro area but for Scenario B there would need to be additional growth in the New Territories.

Similarly, a spatial distribution of jobs for each Preferred Option can be derived, as postulated in Table 8.6. for both Scenarios A and B, there would be a high concentration of jobs in the Metro area, especially for white collar workers. A comparison of the spatial distribution in percentage terms by sub-regions for jobs and population together is given in Table 8.7.

Table 8.5 Broad Distribution of Population in Base Growth and Strategic Growth Areas by 2011 for Scenarios A and B (in millions)

Sub-Regions	Base Growth	Strategic Growth		Total By 2011	
		Scenario A	Scenario B	Scenario A	Scenario B
Metro	3.68	0.64	0.86	4.32	4.54
NWNT	1.24	0.14	0.23	1.39	1.47
NENT	1.10	0.02	0.14	1.11	1.24
SWNY	0.11	0.11	0.22	0.22	0.34
SENT	0.39	0.09	0.13	0.48	0.51
Total	6.52	1.00	1.58	7.52	8.10

Table 8.6 Broad Distribution of Employment in Base Growth and Strategic Growth Areas by 2011 for Scenarios A and B (in millions)

Sub-Regions	Base Growth	Strategic Growth		Total By 2011	
		Scenario A	Scenario B	Scenario A	Scenario B
Metro	2.40	0.35	0.55	2.75	2.95
NWNT	0.29	0.05	0.10	0.34	0.39
NENT	0.30	0.02	0.08	0.32	0.38
SWNY	0.08	0.05	0.07	0.13	0.15
SENT	0.08	0.03	0.03	0.11	0.11
Total	3.15	0.50	0.83	3.65	3.98

Table 8.7 Percentage Share of Population, Jobs and Major Land Uses by Sub-regions by 2011 for Scenarios A and B

Sub-regions	Base Growth (%)			Scenario A (%)			Scenario B (%)					
	Population	Jobs		Population	Jobs		Population	Jobs				
		Industrial	Office		Total	Industrial		Office	Total	Industrial	Office	Total
Metro	56.5	76.3	92.3	76.0	57.3	76.1	92.6	75.3	55.9	73.1	91.6	74.1
NWNT	19.1	10.2	2.0	9.2	18.5	10.2	1.9	9.6	18.3	10.1	2.3	9.9
NENT	16.9	8.9	4.5	9.6	14.8	9.0	3.8	8.8	15.3	12.2	4.3	9.5
SWNT	1.6	3.0	0.9	2.5	3.0	3.1	1.3	3.4	4.2	3.0	1.3	3.8
SENT	5.9	1.6	0.3	2.7	6.4	1.6	0.4	2.9	6.3	1.6	0.4	2.7
Total	100	100	100	100	100	100	100	100	100	100	100	100

SOME KEY ISSUES

In working our way forward through an evaluation of Preferred Options and then moving on toward the formulation of a Recommended Long-Term Strategy for each scenario that subsequently leads to the derivation of a Medium-Term Strategy, it will be necessary to pay particular attention to a number of key issues, as follows:

Economic Restructuring and the Future of Old Industrial Areas

Over the past 15 years, Hong Kong's dependence on its manufacturing sector has declined as a consequence of the shift of production processes to the PRD where land and labour costs are much lower. However, whilst there has been a dramatic shrinkage in the number of factory workers (from about 847,000 in 1982 to 484,000 by 1993), the growth of Hong Kong funded manufacturing enterprises in the PRD has created additional employment opportunities in the territory for managerial staff, technical personnel and professionals dealing with such functions as product design, quality control, procurement of finance, materials and equipment, and marketing. Many of these activities have created growing needs for relatively cheap office accommodation through the conversion and/or the redevelopment of factory buildings, especially in older industrial areas such as Kwun Tong, Cheung Sha Wan and Kwai Chung. The physical layouts of such areas are very substandard and there is a need to find a practical measures to upgrade their environmental quality.

Job Balance

In the planning of new towns in Hong Kong, a basic intention was that within each town there should be a balance between the number of local job opportunities and resident workers so as to minimise travel demands between the new towns and the Metro area. To that end, provision was made in each new town for large areas of industrial land, on the assumption that a significant proportion of the labour force would be "blue collar" workers. However, the restructuring of Hong Kong's economic base has created substantial opportunities for "white collar" jobs, which are heavily concentrated in the Metro area. That, in turn, has created major peak hour traffic congestion on commuter road and rail links. For strategic planning purposes, the concept of job balance now needs to be considered in a wider geographical context through the creation of a better planned hierarchy of office centres, decentralisation of industrial land to selected non Metro areas

(especially close to new port and airport facilities), a parallel emphasis on encouraging growth in easily accessible, adjacent Metro areas, and the extension of mass transit systems (especially rail based systems) to serve commuter demands. In this context, it will be necessary to consider the effectiveness of existing policies and institutional mechanisms.

Environment and Development

Throughout the TDS review process, a recurrent concern has been the environmental impacts of continued, unrestrained growth. A dilemma is that much of Hong Kong's development is the product of external economic forces and its consequential growing role as an international and regional business centre and entrepot. That, in turn, will generate population growth, higher expectations for new urban functions and services and the expansion of other hub functions, especially those related to the port and airport. In this context, there is a commitment under the Second Review of the 1989 Paper "Pollution in Hong Kong – A Time to Act" to support the concept of "sustainable development", taking into consideration the need for ecological conservation. That same paper also accepts that *"this does not mean dispensing with economic growth and prosperity and having higher expectations. But it does mean adding a sustainable dimension to our general expectations"*. This leads to the need at the stage of evaluating strategic development options (and through ongoing studies) to take a further look of the balance that can be achieved between various sectoral interests and also to examine whether, in a regional context, there is likely to be scope for achieving a better distribution of inter-related activities, especially in respect of port activities.

Improvement of Transport Links with the Hinterland

Related to the foregoing is the escalating need to investigate new road, rail and river links between our new airport and expanded port facilities on the one hand and the PRD hinterland which such facilities serve. There are clear signs that, even with the completion of currently planned projects for new road and rail links to the border, the magnitude of traffic growth is such that a close look should soon be taken of additional links and even alternative measures to regulate demand. On this account, studies have identified a number of possible conceptual routes and these will need to be examined in detail by the newly established Infrastructure Co-ordinating Committee (ICC).

Need for Greater Provision of Mass Transit Railway Systems

Recently completed studies by the Secretary for Transport reveal an alarming situation with regard to traffic congestion on road networks. In short, it is seen that there is no practical way of building our way out of this situation solely through the provision of new roads. An integrated programme is required that will relieve pressure of demand by regulating the use of road space by various fiscal and administrative means and also by the wider and accelerated provision of public mass transit systems, especially rail based systems to serve at the earliest possible time major concentrations of development. In this context, the TDS review will need to explore how different patterns of land use can be created to help reduce interzonal commuter trips and to promote the financial viability of rail based passenger transport systems.

Changing Population Forecasts

For the current TDS studies, a 2011 population of 6.5 million people was assumed from a forecast produced in 1991 by the Commissioner for Census and Statistics (CCS). However, recent analyses show that the population in 1994 had already reached 6.09 million and by the turn of the century is likely to be about 6.6 million. Accordingly, the TDSR Steering Group reassessed the situation and propose to assume a 2011 a notional figure of 7.5 million for Scenario A and 8.1 million for Scenario B. As and when new forecasts are produced by CCS, adjustments to TDS proposals will be made, especially with respect to proposals for a medium-term strategy which is expected to be used as a basis for resource allocation for development projects.

WHERE WE GO FROM HERE

Work is now proceeding as quickly as possible to produce a TDSR Final Technical Report, which will be released in three parts, namely :

- Part 1 – General Overview
- Part 2 – The Process
- Part 3 – Recommended Strategy

It is expected to make Parts 1 and 2 available shortly for public reference. For Part 3, a lot of hard work has yet to be done, given that our results from initial transport tests and environmental evaluations of the prototype Preferred Options already point to a need for some measure of

adjustment to currently assumed distributions of population and jobs, additional infrastructure systems and, perhaps, new policy initiatives.

No doubt, the voices of various community groups, professional bodies and individuals will continue to raise points of concern and new ideas. This is all to the good since public participation, especially through meaningful dialogue, can lead to improvements. However, there must come a time when the Government has to assume a preferred way forward. It is seen that a commitment to a Medium-Term Strategy and Outline Programme of Works offers a practical way to proceed whilst, at the same time, allowing other longer term issues to be kept open for ongoing review and debate. Indeed, it is around this very principle that strategic planning in Hong Kong has been developed over the past thirty years. Finally, our current aim is to complete the Part 3 report by mid 1995, following which an Executive Report covering the main points in all three parts will be produced.

Note:

1. Dr. Pryor is the Principal Government Town Planner/Territorial in the Planning Department, Hong Kong Government. Views expressed do not necessarily reflect the stand of the government. Author's copyright, 1995.

APPENDIX 8.A

TDS PRINCIPAL OBJECTIVES

Objective 1 – to enhance the role of Hong Kong as an international city and a regional centre for business, finance, information, tourism, entrepot activities and manufacturing.

Objective 2 – to ensure that adequate provision is made to satisfy the land use and infrastructure needs arising from sectoral policies on industry, housing, commercial, rural, recreation and other major socio-economic activities.

Objective 3 – to conserve and enhance significant landscape and ecological attributes, and important heritage features.

Objective 4 – to enhance and protect the quality of the environment with regard to air quality, water quality, noise, solid waste disposal and potentially hazardous installations by minimising net environmental impacts to the community and maximising opportunities to improve existing environmental **conditions**.

Objective 5 – to provide a framework within which to develop a multi-choice, high capacity transport system that is financially and economically viable, environmentally acceptable, energy efficient and makes provision for the safe and convenient movement of people and goods.

Objective 6 – to formulate a strategy that can be carried out both by the public and private sectors under variable circumstances, particularly with respect to the availability of resources and significant changes of demand.

Such objectives and associated sub-objectives are used both as a basis for the formulation of a series of development options and as yardsticks for measuring the performance of each option.

Certain sub-objectives may be identified as “pre-requisites” so that, should any option, fail to satisfy the specified criteria of performance for any one such sub-objective the option as a whole has to be discarded. For the remaining sub-objectives, the level of performance is measured by means of a rating determined partly on the basis of quantifiable characteristics (e.g. the extent to which land requirements are met) and partly on the basis of qualitative judgements (e.g. the likely impact of a development proposal on the aesthetic value of a given area). A further point to note is that, as the

TDSR process proceeds through a programme of increasingly detailed and reducing number of options, certain objectives/sub-objectives that are successfully met at an earlier stage need be used again as yardsticks at later stages. Also, in making comparisons between options, it is the “marginal” differences that should be the focus of attention for some objectives (e.g. extent to which strategic land use requirements are satisfied), whilst for others it is the performance of the whole system that matters (e.g. the efficiency of the transport system, air quality conditions). Finally, the TDSR process assumes, initially, that all objectives are of equal merit, but leaving the robustness of options to be measured by means of sensitivity testing, using different weightings for selected objectives/sub-objectives.

APPENDIX 8.B

GLOSSARY OF KEY TERMS FOR TERRITORIAL DEVELOPMENT STRATEGY REVIEW (TDSR)

Base Growth

This comprises:–

- a) existing development and special facilities to be retained up to 2011
- b) committed public/private sector development with policy approval and financial commitment; and
- c) assumed net gain from redevelopment from 1991-2011.

Baseline Transport Networks

These comprise:–

- a) all existing transport infrastructure to be retained; and
- b) any other transport infrastructure under construction, already committed and with firm policy approval to meet the needs of base growth development.

Development Scenario

This is a broad concept of possible future directions of growth and levels of development of principal land uses and key infrastructure systems for the territory in a regional context to provide a basis for the generation of strategic development options.

Development Options

These represent possible future development patterns and related transport and other infrastructure networks within the Territory, derived from the broad development scenarios. There are three progressive and mutually dependent levels of development options in the TDSR, namely, Initial Options, Hybrid Options and Preferred Options.

Initial Options

These are first ideas for a given development scenario showing a broad brush, long-term (2011) pattern of strategic growth and related

infrastructure, the performance of which is measured by various criteria to determine the extent to which the assumed pattern of development satisfies agreed objectives.

Hybrid Options

These are improved and more detailed proposals for a long-term (2011) pattern of strategic growth and related infrastructure incorporating the most essential and desirable elements derived from Initial Options.

Preferred Options

These represent the final ideas for a given development scenario showing a long-term (2011) pattern of strategic growth and related infrastructure, to provide a land use-transport-environment framework for the assumed scenario.

Floating Quanta of Population and Jobs

This represents the difference between the population and employment capacity of Base Growth Areas on the one hand and the total population and jobs that have to be provided for within each scenario for the assumed design year (2011). The floating quanta may be assigned to alternative Strategic Growth Areas.

Industry

For the generation and evaluation of TDSR options, future requirements and provision for industrial floor space/land are assessed in terms of general and special industry.

General Industry

This group comprises the following manufacturing-related activities:

- a) those accommodated in multi-storey industrial premises, which are generally labour intensive type of light manufacturing activities;
- b) those accommodated in low-rise and purpose built industrial premises, which are generally land-extensive type of industrial processes; and
- c) those accommodated in multi-story godown premises, which provide storage space and support facilities to the mainstream production.

Special Industry

This group comprises activities which cannot be adequately accommodated in premises for general industries and can be broadly classified into :-

- a) those which are capital intensive;
- b) those which are land extensive;
- c) those which have special infrastructural and/or locational requirements, such that they:
 - may require a waterfront location;
 - may require bulk storage or warehousing facilities on site;
 - may require a heavy consumption of water;
 - may generate some degree of environmental nuisance.

Metro Area

This comprises Hong Kong Island, Kowloon, New Kowloon and Tsuen Wan New Town.

Greater Metro Area

This covers the Metro Area and the adjoining new towns of Sha Tin and Tseung Kwan O.

Recommended Strategy

This comprises for each Scenario assumed Base Growth Areas and Baseline Transport Networks plus a long-term (2011) pattern of strategic growth and related infrastructure for each assumed scenario, derived from an evaluation of Preferred Options.

Medium-Term Strategy

This comprises Base Growth Areas and Baseline Transport Networks plus key strategic facilities (e.g. the new airport) and common elements of the two finally agreed Recommended Strategies needed to satisfy forecast demands for major land uses and infrastructure up to the year 2006.

Outline Programme of Works

This comprises an indicative sequence/phasing of the growth elements identified in the Medium-Term Strategy, together with an assessment of the broad financial implications and broad orders of cost of principal new projects.

Strategic Growth

This comprises development over and above Base Growth that is required to satisfy forecast urban land requirements over the period 2001-2011. This is further sub-divided into:

Strategic Common Growth

This comprises new land use proposals that are common to different options and can thus form the basis for medium-term development programmes. In broad terms, Strategic Common Growth Areas are selected on the basis that they include:

- remaining projects in the New Town Development Programme;
- planned public sector projects in the Non-Basic Programmes of the Resource Allocation System;
- assumed “build-back” of new accommodation from redevelopment over the period 2001 – 2011;
- remaining phases of the Airport Core Programme projects; and
- urban-based reclamation projects initially required to facilitate the restructuring of obsolete parts of the Metro Area.

Strategic Optional Growth

This comprises new land use proposals required to meet the remaining balance of strategic growth, the disposition of which may vary between options.

Strategic Growth Areas

These are potential solution spaces identified as suitable to satisfy strategic growth needs under different options.

**HONG KONG'S HUB
FUNCTIONS AND LAND
USE STRATEGIES**

Hong Kong's Hub Functions

Yue-man YEUNG

INTRODUCTION

Consequent upon Hong Kong Island's being ceded by China to Britain as part of the terms of settlement for the Opium War, the initial reaction in 1841 by the then British Foreign Secretary, Lord Palmerston, to it was one of diplomatic disdain. He expressed his strong personal dissatisfaction and described the island as a "barren island with hardly a house upon it". That comment might truthfully reflect reality at that time, but neither Lord Palmerston nor the mandarins in China realised that they had stumbled upon a great historical accident. Hong Kong had only one natural asset – its harbour rated as the top three in the world – around which the territory was to build and expand its hub functions to this day. A hub is defined here as a central point of activity or importance, used therefore in its literal and figurative senses. It was beyond anybody's imagination in mid-nineteenth century that Hong Kong is such a thriving and modern city today whose importance, nonetheless, is underpinned by the hub functions it so effectively performs for the Asia-Pacific region and the world.

The original hub function that Hong Kong was established for – as an entrepot between China and the world – has always loomed large in most of the period under British rule since 1841. This function was, however, disrupted for some two decades between the onset of the Korean War and the adoption of an open policy by China in 1978. During that period Hong Kong by necessity had to explore and expand other hub functions, which it did succeed with distinction. Since 1978, Hong Kong's role as an entrepot for China has returned with a vengeance. In fact, as the forces of globalisation accelerated since the 1980s, Hong Kong's hub functions have solidified and intensified, so much so that it has been rightfully viewed as a world city (Lo and Yeung, 1996). The purpose of this paper is to review some of Hong Kong's hub functions in the new global economy.

A TRANSPORT AND COMMUNICATION CENTRE

The greatest advantage of Hong Kong as a hub of transport, communication and telecommunications is its geography. It is located not only at the southern doorstep of the world's most populous country noted for its remarkable economic transformation in recent years, but is also situated most favourably and strategically in the Asia-Pacific region in terms of accessibility and economy. Hong Kong has a deep-water, silt-free natural harbour, indeed the only port between Vietnam and Ningbo capable of accommodating the huge container vessels at any state of the tide (Clark, 1993). The centrality of Hong Kong is highlighted by the fact that within six hours of flight time from Hong Kong, virtually every country and major urban centre in Pacific Asia is covered. This area encompasses a population of 1.97 billion, almost 40% of the world's population (Figure. 9.1). Within two hours of air travel from Hong Kong, a region with a population of 509 million is in focus. The importance of Hong Kong as a transport centre can be examined by sector.

The position of Hong Kong in the network of air travel within Pacific Asia is outstanding and most advantageous. It is the pivot of the regional system because it has the shortest total distance to all other urban centres (Table 9.1). An analysis of the 1990 regional air passenger pattern reveals that Hong Kong is a "dominant source" (that is, outflows exceeding inflows) with an excess of 115,000 passengers. This reflects Hong Kong's strong position as the dominant trans-Pacific gateway contributing to a high proportion of non-local passengers (Figure 9.2; also Rimmer, forthcoming). As a matter of fact, Hong Kong's air passenger traffic has continued to rise rapidly. Notwithstanding Kai Tak Airport fast approaching saturation, Hong Kong still managed to achieve the distinction of being the third busiest airport in the world in 1993 as measured by international air passenger, with a total of 24.42 million (Table 9.2).

In air freight, time is more important than distance. Thus the quality of transport – punctuality, service frequency, and cargo collection and delivery – is critical, and it is in these elements that Hong Kong excels. Consequently, Hong Kong was ranked only after Tokyo-Narita in 1993 as the airport handling the second largest volume of international air cargo (Table 9.2).

In container traffic in Pacific Asia, the centrality of Hong Kong equally stands out. Here again, it is Hong Kong's free trade status, port efficiency and fine harbour that conjoin to make Hong Kong the busiest container port in the world. In 1993, a total of 8.59 million TEU (twenty-foot equivalent units) were handled (Table 9.3). As Figure 9.3 indicates, Hong Kong is part

Figure 9.1 Pattern of Flight Time and Surrounding Countries from Hong Kong

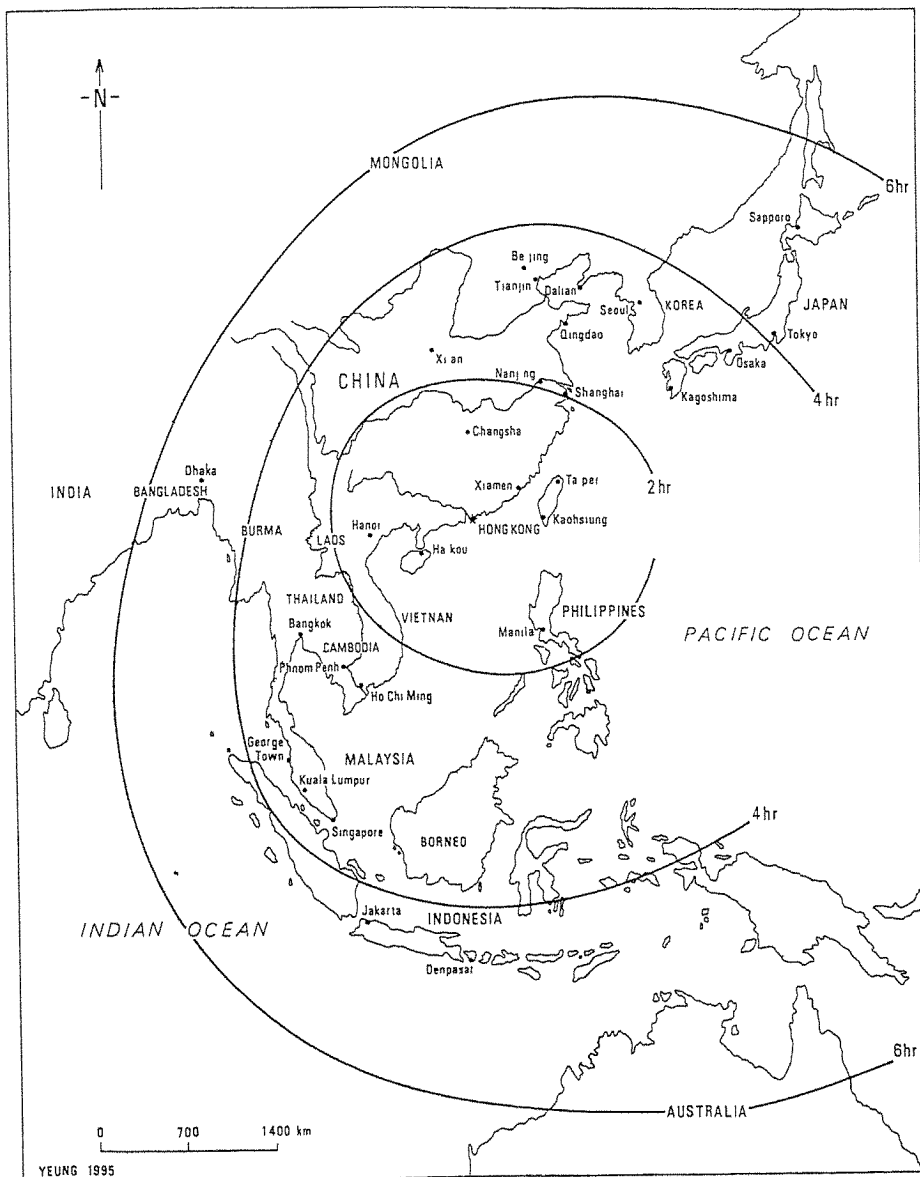


Table 9.1 Air Distances Between Pacific Asian Cities (kilometres)

	JKT	SIN	KUL	BKK	MNL	TPE	HKG	SHA	BJS	OSA	TKO	SEL
JKT	—	560	1190	2335	2780	3900	3270	4480	5255	n.a.	5795	5355
SIN	560	—	330	1445	2460	3245	2585	3800	4575	n.a.	5330	4670
KUL	1190	330	—	1205	2485	3340	2535	3750	4525	n.a.	5335	4620
BKK	2335	1445	1205	—	2200	2520	1715	2685	3305	n.a.	4615	3700
MNL	2780	2385	2485	2200	—	1175	1130	2460	3120	n.a.	3015	2625
TPE	3900	3245	3340	2520	1175	—	805	2020	2795	n.a.	2125	1475
HKG	3270	2585	2535	1715	1130	805	—	1215	1990	n.a.	2905	2085
SHA	4480	3800	3750	2685	2460	2020	1215	—	1080	n.a.	1805	2200
BJS	5255	4575	4525	3305	3120	2795	1990	1080	—	n.a.	2115	2585
OSA	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	—	n.a.	n.a.
TKO	5795	5330	5355	4615	3015	2125	2905	1805	2115	n.a.	—	1195
SEL	5355	4670	4620	3700	2625	1475	2085	2200	2585	n.a.	1195	—

Note: Abbreviations: JAK Jakarta; SIN Singapore; KUL Kuala Lumpur; BKK Bangkok; MNL Manila; TPE Taipei; HKG Hong Kong, SHA Shanghai; BJS Beijing; OSA Osaka; TKO Tokyo, and SEL Seoul.

Source: Rimmer, forthcoming

Figure 9.2 Air Passenger Movements between World Cities in Pacific Asia, 1990

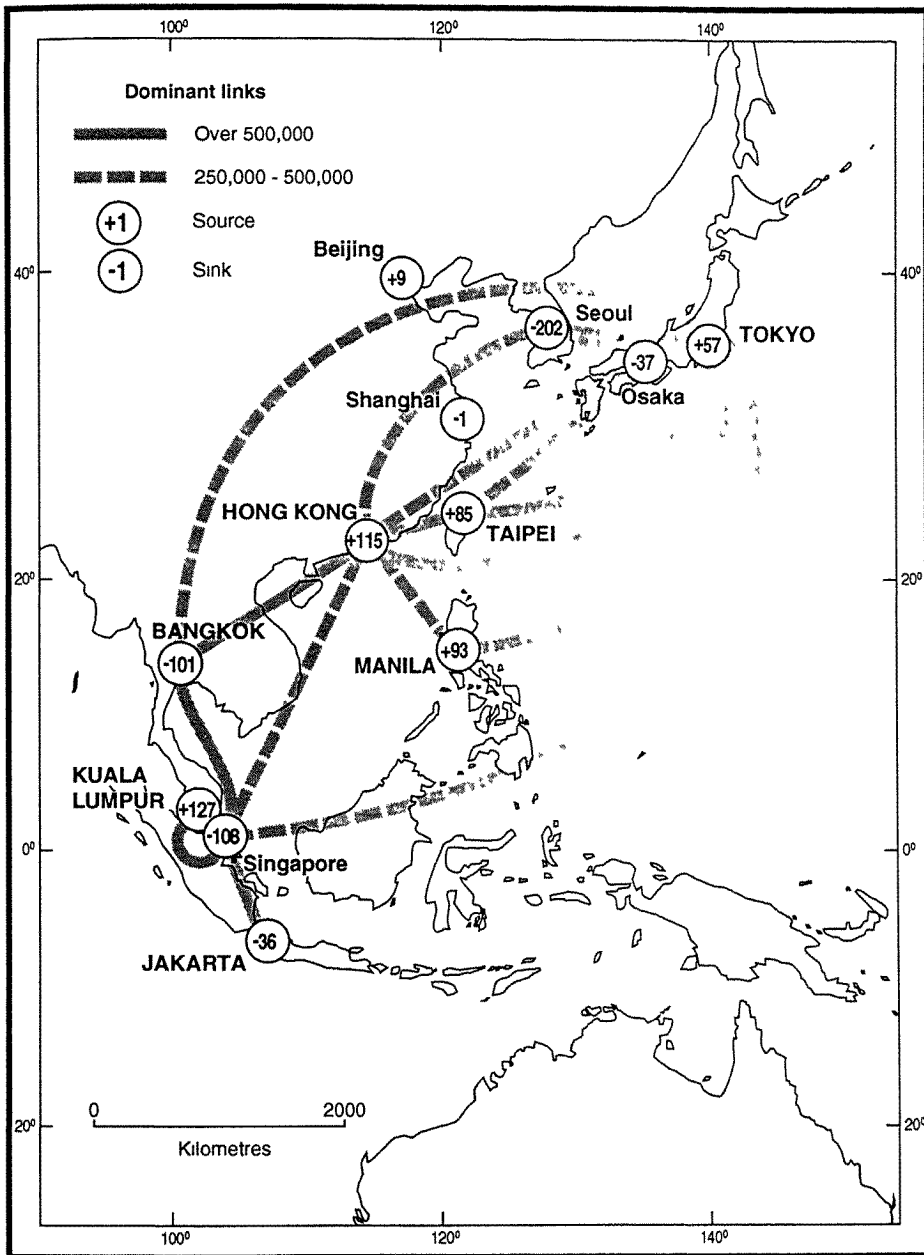


Table 9.2. World Air Traffic Statistics, 1993

	Total International Passenger ARR + DEP (including transfer pax, but excluding transit pax)	World Ranking in 1993
London – Heathrow	40,843,627	1
Frankfurt	25,290,239	2
Hong Kong	24,420,646	3
Paris – Charles De Gaultte	23,336,121	4
Amsterdam – Schiphol	20,659,046	5
Tokyo – Narita	18,946,804	6
Singapore – Changl	18,796,328	7
London – Gatwick	18,659,991	8
New York – Kennedy	16,008,465	9
Bangkok	12,754,917	10
	Total International Cargo (loaded + unloaded freight + mail in metric tonnes)	World Ranking in 1993
Tokyo – Narita	1,423,058*	1
Hong Kong	1,166,823*	2
Frankfurt	1,152,990*	3
Miami	920,970	4
New York – Kennedy	854,292	5
Singapore – Changl	854,117	6
London – Heathrow	839,986	7
Amsterdam – Schiphol	809,715	8
Taipei – Chang Kai Shek	744,012	9
Paris – Charles De Gaultte	569,628	10

Source Airport Council International (1993)

* Cargo tonnes *excluding* mail for the top three airports are as follows

Tokyo – Narita	1,390,422
Hong Kong	1,139,091
Frankfurt	1,089,389

Figure 9.3 Container Movements between Countries in Pacific Asia, 1983

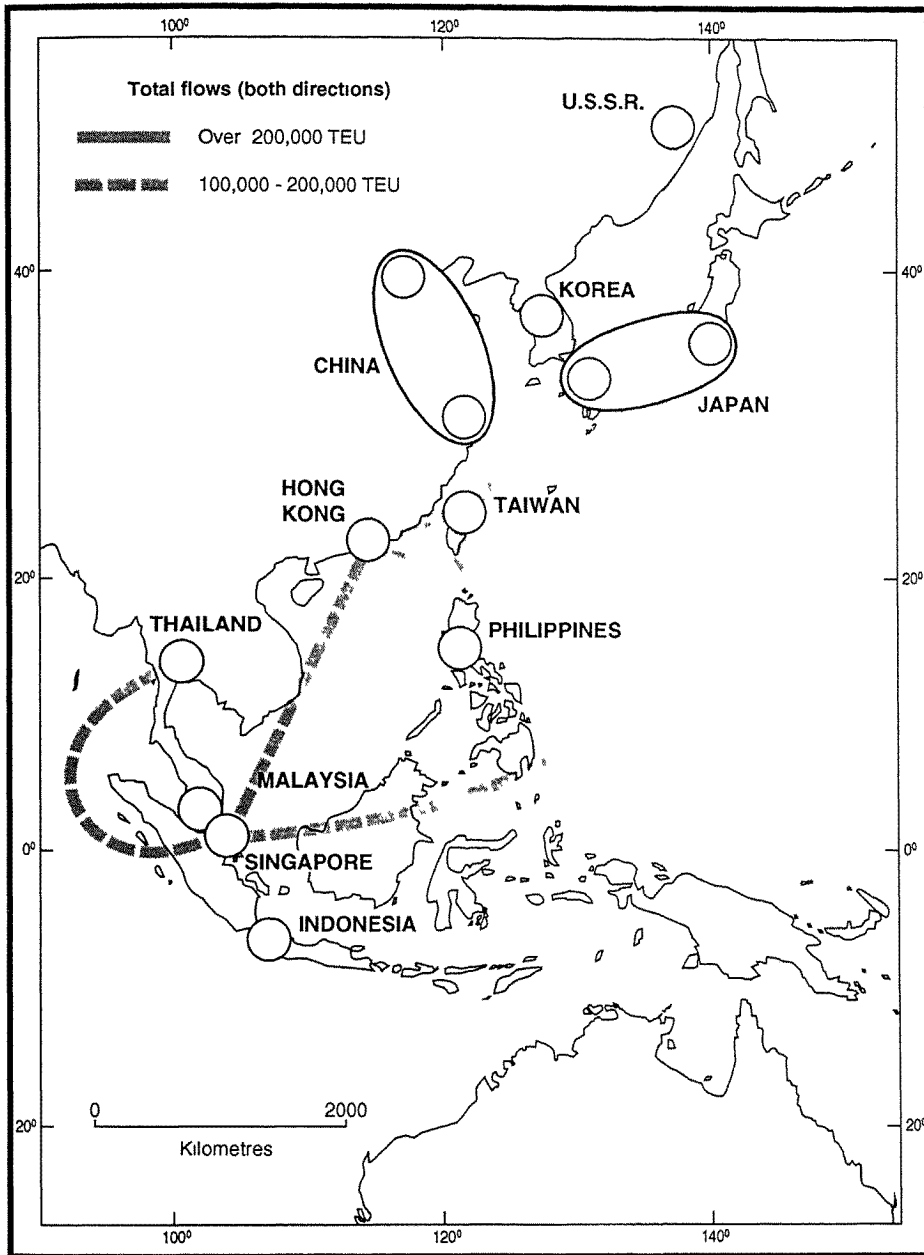


Table 9.3 Hong Kong's Hub Functions, 1970-1993

	1970	1980	1990	1993
Finance				
Stock				
Hang Seng Index (31.7.64 = 100)	211.64	1,121.17	3,027.47	7,695.99
Total turnover (HK\$ million)	5,989.00	95,684.00	288,715.00	1,217,213.00
Market capitalisation (HK\$ billion)	–	–	650.40	2,975.40
Bank				
No. of licensed banks	73	113	166	172
Total Assets of licensed banks (HK\$ million)	23,831	294,979	4,858,210	5,353,572**
Presence of world's largest 500 banks (in the form of overseas bank)	–	–	206	210
Presence of world's largest 20 banks (in the form of overseas bank)	–	–	18	18
	1970	1980	1990	1993
Manufacturing Industry				
GDP by manufacturing				
at current price (HK\$ million)	5,913	30,549	998,532	99,764**
percentage of GDP of HK (%)	30.9	23.8	17.6	13.7**
Workforce				
Persons engaged in manufacturing	549,178	907,463	715,597	483,628
Percentage of working population (%)	–	62	41.2	26.9
Foreign investment in manufacturing				
Total investment at original cost (HK\$ million)	–	15,527*	30,933	40,899
Gross additions to fixed assets (HK\$ million)	–	1,031*	2,359	2,934
Top 3 investors by total investment (% share)	–	US (36.4)* Japan (21.1)* China (18.4)*	Japan (31.5) US (30.6) China (10.6)	Japan (34.1) US (28.1) China (10.8)
Top 3 industries by total investment (% share)	–	electronics (32.3)* non-metallic mineral product (12.2)* textiles (8.5)*	electronics (29.8) electrical (10.9) textile (10.7)	electronics (30.2) others (16.7) textiles (9.6)

	1970	1980	1990	1993
Trade				
Trade volume (HK\$ million)				
Import	17,609	111,651	642,530	1,072,597
Export	12,346	68,171	225,875	223,027
Re-export	2,892	30,072	413,999	823,224
Total	32,847	209,894	1,282,404	2,118,848
Trade with China (HK\$ million)				
Import	2,830	21,948	234,708	400,013
Export	30	1,605	46,103	61,023
Re-export	34	4,462	110,319	273,311
Total	2,894	28,195	391,130	734,347
Position of trading volume	4	3	1	1
	1970	1980	1990	1993
Overseas representation				
Embassies				
by consulates	44	57	74	84
by commissioners	8	8	7	7
Overseas companies				
Regional headquarters	—	187	528	694
Regional offices	—	254	808	1,104
	1970	1980	1990	1993
Transport				
International movements of commercial cargo (tonnes)				
by air	61,186	257,866	801,939	1,139,090
by rail	859,998	1,949,706	2,216,718	1,612,820
by road	48,127	307,730	9,061,053	13,001,334
by sea (Ocean going and river vessels)	13,425,000	33,562,128	75,295,391	96,100,000
Container port (TEU)				
Kwai Chung terminal	—	—	3,831,211	5,796,570
Others	—	—	1,198,485	2,797,353
Total	—	1,464,961	5,029,696	8,593,923
International movements (arrival and departure)				
Aircraft (no.)	46,749	54,569	105,782	135,092
Ocean-going Vessel (no.)	14,303	20,569	37,671	66,153
Train (wagon)	—	—	95,425	77,282

International movements of passengers				
Arrivals (thousands)	2,954	10,627	31,835	41,181
Department (thousands)	2,929	10,558	31,832	41,052
No. of Tourists	927,256	2,301,473	6,580,850	8,937,500
	1970	1980	1990	1993
Communication and telecommunications				
Popular media (no.)				
Newspapers	–	97	72	66**
Periodicals	–	388	600	598**
Radio stations	–	7	13	14
Television stations***	–	4	4	4
Postal service (thousand)				
Overseas mail sent	92,100	93,200	136,100	150,800
Overseas parcel sent	2,699	1,823	1,330	1,147
Telecommunications (thousand minutes)				
Outward overseas telephone calls	4,204	42,675	581,952	1,132,671
Received overseas telephone calls	4,947	53,034	617,800	1,198,451
Outward overseas telex	1,452	24,440	26,682	18,530
Received overseas telex	1,377	30,844	31,323	20,626
Outward overseas fax and data	–	–	112,500	190,458

Notes: * 1985 figures.
 ** 1992 figures.
 *** Satellite and cable TV excluded.

Sources: Hong Kong Government (various years), *Hong Kong Statistical Yearbooks*.
 Hong Kong Government (various years), *Hong Kong*.
 Hong Kong Government Industry Department (various years), *Survey of Regional Representation by Overseas Companies in Hong Kong*.
 Hong Kong Monetary Authority (1994), *Annual Report 1993*.
 China Resource Trading Consultancy (1988), *Hong Kong Economic and Trade Statistics (1947-1987)*, Hong Kong. (*in Chinese*)

of two of the three top inter-regional routes of around 200,000 TEU. Hong Kong's container port is the most efficient in the world, with a turnaround time of 14 hours. Container traffic in Hong Kong is anticipated to double by the year 2000 and double again by 2011, thus necessitating the construction of up to 24 terminals by that time (Clark, 1993).

The rapid growth of air and container traffic in Hong Kong in recent years has been spurred by the rise of national and regional economies in

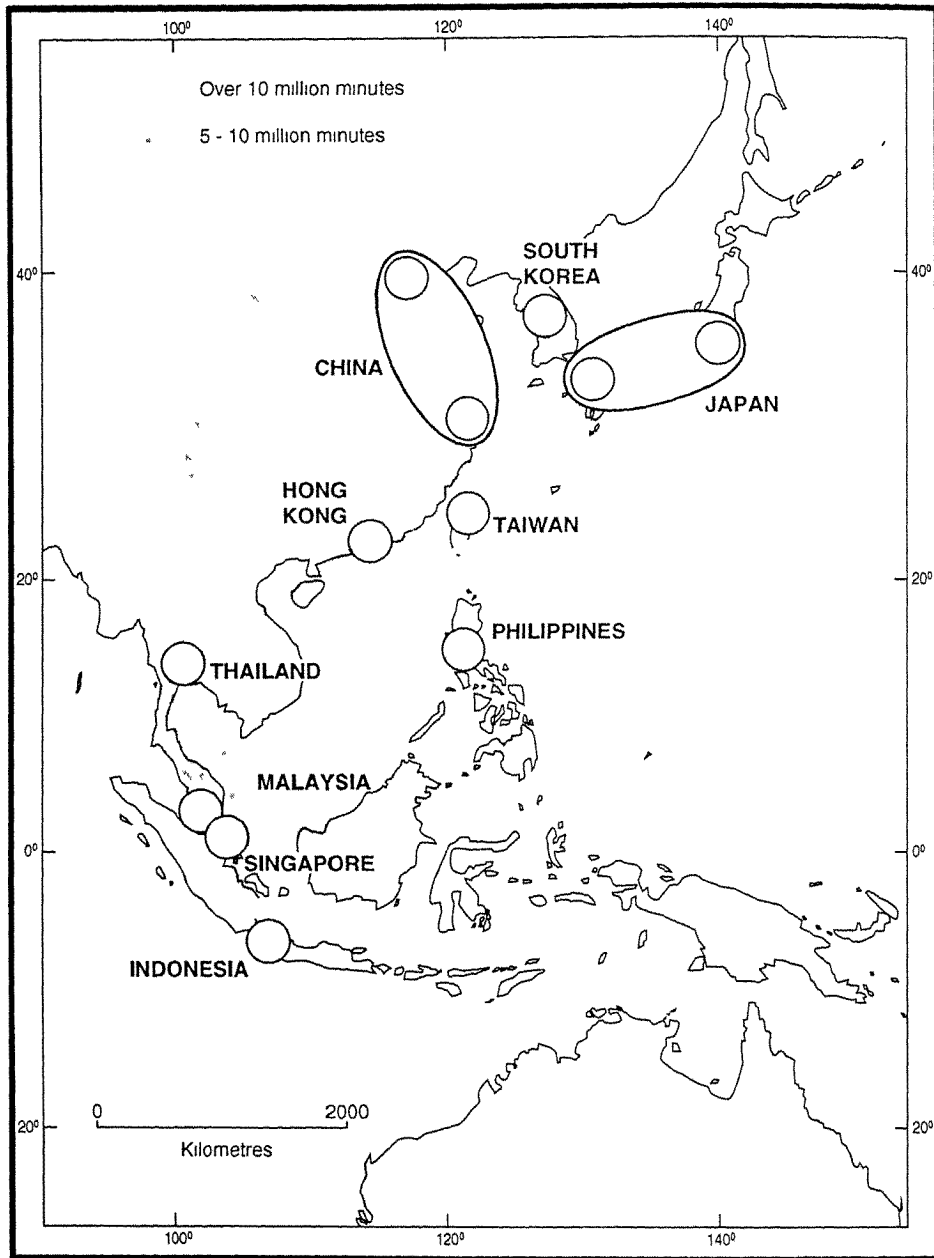
Pacific Asia. In the new global division of labour, many countries in the region have stood out in their competitive position and have attracted considerable foreign direct investment. They have out performed many other regions of the world (Yeung, 1993a, 1993b). In this new global economy with an emphasis on comparative advantage in factor endowments and where foreign investment respects economics more than politics, Hong Kong has stood in good stead because of its outstanding transport hub functions. In this borderless economy, technological innovations and professional efficiency have also played their part, in traditional air and sea transport as noted above, as well as in telecommunications.

Advances in telecommunications have speeded up human interactions and business transactions. They have suddenly opened up many more possibilities for location of production, marketing outlets, homes, etc. The era of borderless television is said to have arrived in Asia, with Hong Kong being an important actor and provider of services (Scott, 1991). The Star TV can now be viewed in many hotels across Asia and Hong Kong is involved in many "footprints in space". Based on an analysis of telecommunications data in sixteen countries in 1988, Hong Kong has done extremely well. Its nodality is obvious in Figure 9.4. In addition, Hong Kong has increased its outgoing international telephone calls 13.6 times between 1980 and 1990, and doubled again between 1990 and 1993 (Table 9.3). This is another indication of the fast increasing connections of Hong Kong with other countries, a phenomenon aided no doubt by sustained and sizeable emigration of Hong Kong people to such destinations as Canada, the US and Australia since the early 1980s. Moreover, Hong Kong's popular culture flourishes with the publication of 66 newspapers and 598 magazines in 1992 (Table 9.3). These magazines and several newspapers are freely circulated and in demand overseas, adding another dimension to Hong Kong as a hub, in this case a cultural hub, providing a cultural and emotional link to migrants who have settled in other countries and to Chinese communities wherever these may be. It has been estimated some 500,000 Hong Kong people have emigrated during the last decade and have continued to depend on Hong Kong for their cultural sustenance through popular magazines, movies, television video tapes and so on (Chu and Yeung, 1995).

A FINANCIAL AND INVESTMENT CENTRE

The rise of Hong Kong as a financial centre for Asia and the world owes to many factors, namely its location midway between London and New York (an advantage shared with several Asian cities as well) to facilitate 24-hour

Figure 9.4 Telecommunications Movements between Countries in Pacific Asia, 1988



financial transactions, the growing China factor, the preference of Southeast Asian Chinese to put their funds here, a stable government, a sound legal system, among others. The increasing role of Hong Kong as a hub for financial services is paralleled by a corresponding decline in the manufacturing sector, both in employment and contribution to GDP.

A reflection of the meteoric rise of Hong Kong as a financial centre can be perceived in the transformation of its banking system during the period 1969-90. For instance, the balance sheet size of the banking sector increased 263 times to HK\$5,234 billion (US\$671 billion), while customers' deposits soared 100 times to HK\$1,231 billion (US\$158 billion). At the same time, the amount due to banks abroad increased by 1,695 times, and loans and advances abroad increased 4,000 times. Of the largest 500 commercial banks of the world, 220 are present in Hong Kong in one form or another (Jao, 1993, p. 51). Indeed, nineteen of the twenty largest banks in the world maintained a full-fledged licensed bank in Hong Kong in 1989 (Ho et al., 1993, p. 394).

Besides banking, Hong Kong is equally prominent in other financial domains. Hong Kong is ranked sixth in the world in foreign exchange market, seventh in stock market capitalisation, fourth in loan syndication, fourth in the number of foreign banks, and eleventh in terms of external asset of banks. Together with London, New York and Zurich, Hong Kong is one of the world's four largest gold markets (Jao, 1993). In 1993, "H" shares of China's state-owned enterprises were first listed at the Hong Kong stock exchange and have since attracted much interest by a growing number of listings. This move in augmenting Hong Kong's stock market capitalisation is seen to strengthen its position in the future. At present, 50% of China's foreign exchange enters through Hong Kong. Thus, Hong Kong is an important financial centre for the world economy, behind Tokyo in the range and volume of services but of comparable standing to Singapore (Ho et al., 1993).

A vital ingredient that has been driving the world economy over the past two decades has been the rapid growth of foreign direct investment (FDI). Between 1970 and 1990, the growth of FDI stock in the global economy grew from US\$129 billion to US\$1,436 billion, representing an elevenfold increase at an annual growth rate of 12.6%. The "four little dragons" of Asia (Hong Kong, South Korea, Singapore and Taiwan) have fared very well in capturing FDI during this period. Between 1970 and 1989, inflows of FDI to Hong Kong increased more than a hundredfold. By 1987, FDI inflows in Hong Kong reached HK\$26,045.3 million. On the other hand, the success of industrialisation has since the late 1970s generated a strong centrifugal

tendency, with Hong Kong itself becoming an exporter of capital. Many parts of the world received Hong Kong FDI, most notably in China and ASEAN countries, with Indonesia and Thailand being the favoured destinations. Between 1984 and 1988, the average outflows of Hong Kong FDI reached US\$2,536.5 million (W.C.H. Yeung, 1994).

Japan, the US and China are the three largest foreign investors in Hong Kong. The cumulative value of Japanese investment in Hong Kong rose from US\$3 billion to US\$13 billion between 1985 and 1994. Similarly, the cumulative US investment in Hong Kong rose from US\$3 billion in 1985 to US\$10 billion in 1993. According to informal estimates, Chinese investment in Hong Kong is in the region of US\$25 billion (HKMA, 1995, p. 3). The strong and diversified hub functions that Hong Kong performs makes it an attractive place for foreign firms to set up companies and regional headquarters here, especially in recent years when the China market has been opening up and China-Taiwan trade is still not on a direct basis. In 1990, the government registered a total of 572 overseas companies using Hong Kong as their regional headquarters for Pacific Asia, of which 252 were US companies (Jao, 1993, p. 64). The increasing importance of Hong Kong as a venue for siting regional headquarters and offices, and the growing size of the diplomatic corps since the 1980s are clear from the figures in Table 9.3.

HUB FOR TRADE, MANUFACTURING AND TOURISM

Trade has always been a vital component of Hong Kong's economy, thanks to local business acumen, extensive overseas trading connections and the entrepreneurial spirit. Hong Kong is now the world's tenth largest trading entity, with a total trading turnover of HK\$2,118 billion in 1993. Total trade increased 6.5 times between 1970 and 1980, and by 6.2 times in the next decade, largely the result of the booming China trade since the mid-1980s. Between 1990 and 1993, total trade also increased by 65% (Table 9.3). Trade between China and Hong Kong began to take off from 1986, when the open policy was proving to be a success. By 1991, China accounted for 37.7% and 59.0%, respectively, of Hong Kong's imports and imports for re-export. Likewise, China accounted for 27.1% and 28.7%, respectively, of Hong Kong's exports and re-exports in the same year (Chen and Ho, 1994, pp. 45-46). The rapid growth and importance of the China-Hong Kong trade is also obvious from Table 9.3.

Hong Kong has played a critical role in providing a convenient conduit for indirect trade between China and Taiwan since 1978. Trade between these two lands has been increasing for most years since 1979 at double

digits, accelerating since 1987 and reaching a value of HK\$1,126 million in 1992 (Chen and Ho, 1994, p. 47). Indeed, Hong Kong has become the hub or pivot of a sub-regional economic development, with the participation of China's southern provinces of Guangdong and Fujian, Taiwan and Hong Kong. It is a new mode of cross boundary economic co-operation, termed growth triangle, that is gaining currency in Asia (Thant et al., 1994; Yeung, 1994).

Indeed, the emerging regional economic integration in southern China in the context briefly described has enabled Hong Kong to effect an economic restructuring since the early 1980s. With the opening of southern China, the Pearl River Delta in particular, for investment and development since 1978, Hong Kong has been relocating its manufacturing plants *en masse* across the border when escalating labour and land costs have reduced their competitiveness in the world market. It has been estimated that as many as three million workers are now employed in factories in Guangdong financed and managed by Hong Kong developers. As a consequence, the manufacturing sector has steadily decreased in the number of people employed (down to 483,628 in 1993 from 907,463 in 1980), contribution to total employment (26.9% in 1993 from 62% in 1980), and contribution to GDP (13.7% in 1993 from 30.9% in 1970) (Table 9.3). Conversely, employment in the financial sector has increased sharply from 39,431 in 1975 to 125,850 in 1990, accounting for 2.2% and 4.5%, respectively, of the labour force (Jao, 1993, p. 56).

The buoyancy of the Hong Kong economy and its location at the crossroads of the western Pacific rim have made Hong Kong a favourite tourist destination. Between 1970 and 1993, tourist arrivals have increased almost ten times, reaching almost nine million in 1993. The contribution of the tourist industry to the Hong Kong economy is significant (Table 9.3).

Tourists visit Hong Kong for various reasons, but many come for participation in international conferences, an indication of Hong Kong's attraction as another kind of hub. As Table 9.4 shows, Hong Kong was rated 13 and 18 in the world, respectively, in 1989 and 1990 in the number of conferences held. It was the second or third after Singapore in Asia as a venue for international conference. The opening of the Hong Kong Convention Centre in 1989 and its current expansion plans have greatly strengthened Hong Kong's competitive position. The decision of the World Bank and the International Monetary Fund to hold their annual meeting in Hong Kong in 1997 after the return of sovereignty to China has proven this point.

Table 9.4 International Conventions by Major Cities

1989			1990		
Rank	City	No. of Conference	Rank	City	No. of Conference
1	Paris	388	1	Paris	361
2	London	261	2	London	268
3	Geneva	170	3	Brussels	194
4	Brussels	165	4	Vienna	177
5	West Berlin	160	5	Geneva	166
5	Madrid	139	6	West Berlin	166
7	Vienna	129	7	Madrid	151
8	Washington D.C.	120	8	Singapore	136
9	Singapore	111	9	Amsterdam	108
10	Roma	108	10	Washington D.C.	101
11	Amsterdam	101	11	Strasbourg	100
12	Strasbourg	82	12	Roma	91
13	Hong Kong	74	13	New York	87
14	Stockholm	73	14	Copenhagen	85
15	New York	72	15	Hague, The	83
16	Copenhagen	70	16	Tokyo	81
17	Tokyo	69	17	Stockholm	80
18	Helsinki	62	18	Hong Kong	74
18	Buenos Aires	62	19	Barcelona	70
20	Munchen	59	20	Budapest	69
20	Rio de Janeiro	59	21	Rio de Janeiro	68
22	Manila	55	22	Helsinki	67
23	Hague, The	54	23	Seoul	60
25	Bangkok	52	24	Manila	58
28	Beijing	49	25	Beijing	53
33	Seoul	45	26	Bangkok	51

Source: UIA (Union of International Association) (1990), *Yearbook of International Organisations*, in Hong (forthcoming).

Finally, as the forces of globalisation impinge on Hong Kong and as emigration of Hong Kong people has continued unabated, the inflow of foreign populations has increased markedly. Between 1980 and 1992, Filipinos, Thais and Canadians, for example, have more than tripled their populations (Table 9.5). Many of the new immigrants have come for work, to take the positions vacated by Hong Kong people seeking emigration. The influx of particular nationals has become so sizeable that new international schools have been established for them. As more non-Chinese populations come to live in Hong Kong, they have strengthened the cosmopolitan outlook of society.

Table 9.5 Changing Foreign Populations in Hong Kong, 1980-92

Nationality	1980	1989	1990	1991	1992
Philippines	10,290	51,300	67,400	72,000	90,700
U.S.A.	10,880	17,600	20,500	21,000	24,600
U.K.	23,490	16,100	16,400	16,000	19,200
Thailand	6,520	12,500	14,300	17,000	19,200
India	13,940	16,600	17,000	18,000	18,800
Canada	3,050	11,400	13,000	15,000	17,200
Australia	7,600	10,600	12,000	13,000	15,000
Japan	7,460	9,900	10,600	11,000	13,800
Malaysia	8,480	11,300	11,700	12,000	12,600

Source: Wong et al. (1992).

CONCLUDING REMARKS

From a humble village in the mid-nineteenth century, Hong Kong has over 150 years grown steadily, but since the end of World War II rapidly, in population and economic stature. It is now a vibrant, efficient and highly integrated economic hub of six million inhabitants with China, the Asia-Pacific region and, indeed, the world. As Peter Hall (1984, p. 198) observed, it is one of the few cities in the newly industrialising world that can justifiably claim to be a world city.

Much of the continuing and growing value of Hong Kong as a world city is derived from its range of hub functions, which it has taken pains to invest in and to discharge with efficiency and reliability. The construction of a new replacement airport at Chek Lap Kok at astronomical costs is an excellent example of how much the government is prepared to improve on its hub functions and to equip itself for the future. Thus what started as a historical accident, reinforced by its geography and recently further favoured by the nature of a new global economy, Hong Kong's hub functions have served the community well, now and into the 21st century.

Acknowledgement

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Commercial and Industrial Land Strategy

Edward HO

INTRODUCTION

Since the early 1980s, China's open door policy and reform toward a socialist market economy have accelerated her economic development, particularly in the special economic zones and coastal cities. This development and growth have been key factors in generating the dramatic growth of Hong Kong's own economy in the last decade.

Moreover, the situation has taxed our infrastructure, resources and environment to extremes and clearly illustrates the need for a well-planned, co-ordinated and flexible development strategy for the 21st century.

A successful strategy will depend on a number of factors, including the future shape and direction of our economy, environmental concerns, transportation needs, the increasing economic complementarity between Hong Kong and China, especially the Pearl River Delta (PRD) region, and accuracy in projecting future population growth.

Hong Kong's projected population in the year 2011 is 6.5 million or an increase of 600,000 from today. In fact, when we become part of China as a Special Administrative Region (SAR), I believe that the rate of urbanisation in Hong Kong will increase much more intensely, bringing with it a much higher growth in population than originally projected.

This paper attempts to provide an appropriate commercial and industrial land strategy within the context of the government's overall Territorial Development Strategy (TDS). As the chairman of the Business and Professionals Federation (BPF) of Hong Kong, my recommendations encompass the views of some of Hong Kong's most prominent land developers who are our members.

HONG KONG'S CHANGING ROLE

In the past ten years, Hong Kong has moved rapidly from a low-cost manufacturing haven to Asia's main services centre. We are no longer just a trans-shipment point for cargo for China but a "management entrepot" for China business. As a result, we now host twice as many service companies as manufacturers and the service sector employs twice as many people.

Multinational firms have located regional headquarters in Hong Kong, attracted by the continuity of her market-driven economy, free flow of information, goods and capital, and low taxes, to name a few. These policies should continue so that Hong Kong can remain a vibrant international business centre and support the dramatic growth on the mainland at the same time.

We at BPF completed in 1993 an economic study called "HK 21". The study gathered together the opinions of economists and leading business and political leaders in Hong Kong. From this study, we believe that Hong Kong's role in the 21st Century will be a dual role. On the one hand, she will be an international and regional centre of business – a gateway to China – and, on the other hand, a provider of powerful support for China's economic growth. These twin economic roles are compelled by the emerging co-operative relationship and interdependency between Hong Kong and the neighbouring Pearl River Delta region. Hong Kong will provide technological, managerial, marketing and sales, as well as other support to facilitate the rapid economic development of South China.

In order to fulfil those dual roles, we concluded that there will be an urgent demand for co-ordinated planning and development of infrastructure in Hong Kong and the PRD, and Hong Kong will stand to gain significantly from this economic symbiosis.

The "HK 21" study also predicts that if Hong Kong assumes these twin economic roles now, in ten years time Hong Kong will be one of China's leading commercial cities and the services capital of Asia.

INDUSTRIAL LAND STRATEGY

Many of our low-cost, high-volume, labour intensive industries have moved across the border in recent years. While it is apparent that the shift of these industries to mainland China is irreversible and will continue to change our economic structure, I believe that manufacturing is still a major economic activity in Hong Kong and will remain so.

Owing to the relocation of many operations to various parts of the PRD

where land and labour costs are significantly lower, our manufacturing sector has shifted toward more capital intensive, high value-added activities.

Hong Kong is a support base not only in providing a variety of technological services, but also materials, parts, components and tooling. Hong Kong manufacturers now concentrate on the more skill-intensive activities, thereby contributing directly to the substantial improvement in labour productivity. This structural change creates both a need for a comprehensive study of the role, the requirements and the implications of our industrial sector, as well as a new demand for more modern industrial space.

Most of these new types of industries will not be efficiently accommodated in multi-storey factories. It is not sufficient for government to auction off industrial land at regular plot ratios to the highest bidders. Government should designate industrial land for low density single tenant industrial users.

Since its establishment in 1977, the Hong Kong Industrial Estates Corporation (HKIEC) has helped us to keep up with the structural change we have witnessed. HKIEC has played a very important role in upgrading Hong Kong's industry, technology and labour force as well as the quality and quantity of products for export and domestic consumption by providing assistance in the form of fully serviced land at very attractive prices for industries less dependent on labour and more on innovative technologies and automation.

The HKIEC has successfully disposed of nearly all its sites in Tai Po and a substantial amount in Yuen Long. It is anticipated that it will completely dispose of all its sites in five to six years' time, including the latest Industrial Estate at Tseung Kwun O. Because of this five to six-year lead time, government should start planning for a fourth estate now.

Given that our manufacturing industry is entering a new era, I would support the setting up of an Industrial Authority made up of government and private sector experts to oversee development of industries and to formulate an industrial land policy for Hong Kong. The old standards and guidelines used to estimate the demand for industrial land will have to be revised. We should also investigate solutions such as the development of business or industrial parks for these modern, more sophisticated high tech industries.

COMMERCIAL LAND STRATEGY

As for commercial land strategy, In addition to forecasting commercial space requirements, it will be necessary to consider whether to allocate new sites

for development on the one hand or redevelop existing commercial sites on the other.

The emergence of new commercial sites on reclaimed land in Central, Wan Chai and Kowloon Point will help to reinforce Hong Kong's role as an international business and finance centre and will enhance her importance to China and her role in China's development. Rapid economic growth across the border, particularly in the PRD region, will stimulate demand for office space convenient to cross border transport routes. Development of secondary commercial districts conveniently accessible to key MTR stations outside of the Central Business District or along the KCRC routes in the New Territories, for example, should be considered.

Planning for and building new office towers outside of the traditional commercial centres like Central and Tsimshatsui would alleviate the employment/population mismatch which is due to the migration of population to the suburbs and the centralisation of employment opportunities in the metro area.

Originally, new towns were designed as self-contained communities where job opportunities were readily available to those who live in the same town. The reality is that most of the people living in the new towns actually work in the urban areas. Most are white collar workers rather than blue-collar workers as originally envisaged. This one way direction of workers to the urban areas has placed an immense strain on our already stretched transport system.

To remedy this, we have to fundamentally examine where our future commercial/business centres should be located. Ideally, they will be located north of the New Territories, near the border with mainland China. Establishing new suburban centres will help to alleviate traffic bottlenecks during peak office hours and rush hours.

Another consideration has to be based upon the future economic relationship between Hong Kong and mainland China.

As the economy of Hong Kong and PRD has become more and more inter-related in the last few years, we are already feeling a tremendous amount of daily cross-border pedestrian traffic at Lo Wu. These are people who commute between Hong Kong and the Chinese mainland for work and trade. It is anticipated that this kind of activity will increase exponentially after Hong Kong becomes an SAR of China. Northwest New Territories will be especially strategically important to economic linkages with Shenzhen, Zhuhai (if the bridges go ahead) and other parts of PRD.

Looking ahead into the 21st century, these would have to be a new generation of new towns, which will be secondary business centres in the

Northwest New Territories, complementing the more established business centres in the old urban areas. These new business centres should be sufficiently large in scale and self-contained to attract relocation of businesses from the more dense urban areas and should be complemented by residential areas complete with recreational facilities for various income groups. A bold new vision is called for in the planning of this new generation of new towns.

In the urban areas, the demand for office or commercial space should be considered within the context of changes in our industrial structure. In other words, planners should consider the benefits of converting underused industrial sites into commercial properties. This will bring about much needed environmental improvements, and would avoid untimely expenditure of financial and human resources on large-scale reclamation projects. Concerning the latter, much public opinion has been expressed recently about the need to proceed with more reclamation works in the Victoria Harbour, and the effect it will have on the natural beauty of the Harbour. The Government should examine the potential supply and demand situation of commercial land around the Harbour before the year 2006, before implementing the detail programme of reclamation works.

ENVIRONMENTAL IMPACT

Conservation and improvement of the natural environment must be a key consideration in planning and development of commercial and industrial land strategies. The impact on the natural and urban environment, especially problems with air, water and noise pollution, needs to be studied thoroughly. Any planner knows it is not always easy to balance environmental and conservation interests with the need for continued development. And it will not be easy to control development across the border which is not compatible with Hong Kong's conservation and environmental policies.

One way to ensure the protection of environmental objectives without compromising economic growth would be to re-examine Hong Kong's planning standards and guidelines. Already a large portion of our land areas has been designated as protected areas of one kind or another. The country parks, and other green belts and designated open spaces take up more than 50% of our land areas. In order to conserve as much of the natural environment as possible, it is necessary to revise densities judiciously upwards, especially in new town areas where basic infrastructure and open spaces are adequate.

PLANNING FOR THE FUTURE – TDS

Indeed, one of the problems in long-term strategic planning is the degree of uncertainty involved. As a result, implementation of a plan requires forward planning and a maximum degree of flexibility to make room for rapid changes and rapid growth.

In 1993, the government published the second Territorial Development Strategy (TDS) which took into account the strategic inter-relationship between Hong Kong and the Chinese mainland.

The reality of our economic and social interdependence with mainland China will necessarily influence our current pattern of commercial and industrial development, especially in the border areas. Thus, we must ensure that the TDS is flexible enough to adapt to key factors such as faster-than-expected population growth in Hong Kong. It also must be flexible enough to adapt to the increased demand for housing and transportation near the border and within the territory and to higher-quality industrial developments close to the border.

Commercial and industrial land strategies must take into consideration transportation planning, population density control, environmental and conservation concerns, the evolving nature of the economy, immigration trends and human resources, education and training, and technology. Investment in so-called soft infrastructure will help to ensure that our economy continues to move toward higher value-added in both manufacturing and services.

Additionally, we must take into account planning and development in the vast hinterland – whether we define the hinterland as the Pearl River Delta region or beyond. We must consider our status as an international financial centre and as the gateway to China. BPF has called for increased co-ordination and asked for planning authorities on both sides of the border to discuss policies and problems. The establishment of the Sino-British Cross-border Infrastructure Co-ordinating Committee is a very encouraging and significant step in the right direction.

CONCLUSION

The government's ongoing review of its TDS is a very important initiative and I applaud the organisers of this conference for realising the importance of input from the private sector.

Many of us have a major stake in Hong Kong's long-term prosperity and welfare. On behalf of the business and professional community and particularly all the BPF members, I am pleased to have had this opportunity to speak on the territory's development blueprint.

Agriculture and Rural Land Use Strategy

LAM Kin Che

BACKGROUND

Hong Kong is a pressured place – a small area with the highest population density in the world, a high-performing economy that sees no end to growth, a vibrant city with six million people attempting to carve out a living (Marsden, 1994). The pressures on the use of land are tremendous, manifested not only in the undesirable interfacing of incompatible land uses in the urban areas but also in the haphazard development in the rural countryside.

The problems in the New Territories (NT) bespeak the lack of a formal land use planning system for rural land use. For years, the government has worked with a non-interventionist policy which basically meant providing the bare essentials to its citizens while allowing private interests to take care of the rest. Whilst this might have worked in the past, it can no longer cope with the many competing claims put on rural lands.

There are numerous competing claims on rural lands in the NT, including demands of land for agriculture, village housing, open storage, industrial workshops, recreation and nature conservation. The driving force behind the changes in rural land use is a response to the economic dynamo of Hong Kong, leading to an increasing demand for cheap and relatively large tracts of land which are no longer available in the urban areas. With improved accessibility, the NT has become the pressure valve of urban activities. There are of course significant economic benefits arising from these non-agricultural uses which until very recently were exempted from planning control.

With the rapid growth of South China and the Pearl River Delta (PRD) and the emergence of Hong Kong as a hub of activities in the region, there has been a remarkable increase in port activities and the related freight

traffic across the border. There is also a pressing need to convert more and more rural land for port back-up and open storage uses.

It is time to examine the changing role of Hong Kong in the region and the pressure these economic activities put on the lowland rural areas of the NT. The paper will focus on the agricultural strategy and other non-agricultural land uses on the understanding that the important issue of countryside conservation will be dealt with in another paper.

CURRENT SITUATION

Most of the rural lands in the New Territories have traditionally been agricultural but are currently only partly cultivated. The total area of arable land in Hong Kong had decreased from 13,460 ha in 1954 to 7,900 ha in 1994. Over the same period, the proportion of fallow land rose from 8% to 51%. In 1994, about 4000 ha of arable land are lying fallow.

Employment in farming and fishing represents less than 1% of the total labour force and has been declining in the past three decades. The contribution of the agricultural sector to the GDP is small, representing only 0.3% of the total. In comparison with other sectors, the average income of the farming population is much less. There is hence a gradual shift of the labour force from the farming to the industrial and service sectors. A survey undertaken in 1991 (SRH, 1992) indicated that nearly half of the farmers were aged 60 or above and only 13% of the young members of farming households preferred to continue working on the farms.

In spite of the shrinking scale of operation, local agriculture produces a significant portion of the fresh foodstuff consumed in Hong Kong, accounting for about 1/8 of live pigs and 1/4 of the fresh vegetables. The rest are imported mainly from the Special Economic Zones and other parts of South China. Imported foodstuff makes up an increasingly larger share of the total food consumption, reflecting a reduced competitiveness of local products and an increasing acceptance of frozen foods.

Reasons for the decline of agriculture are varied and complex, the major ones being urban encroachment and competition from China. Rapid urban growth has not only taken up large amounts of arable lands at the urban fringe, but also invoked changes in landowners' attitude towards letting out rural land for farming purposes. Most would rather leave the land vacant in anticipation of development opportunities than to let them out for farming because of potential difficulties in subsequent repossession.

The fundamental cause of arable land abandonment does not rest with the soil conditions, but is attributable to (1) land speculation; (2) multiple or

absentee ownership; (3) difficulty for tenants to assemble sufficient space for a viable farm because of fragmentation of ownership; (4) labour shortage and (5) the lack of interest among the younger members of farming households.

Very little of the hardship experienced by the agricultural sector can be alleviated by government efforts because the overriding principle is that except where there are compelling social considerations, the allocation of resources is left to market forces with minimal government intervention. This free-enterprise philosophy obviates direct subsidy or price support to primary producers, and the government's role is limited only to infrastructural support (irrigation and drainage improvement) and technical advice and assistance.

The decline of agriculture has created a vacuum for other non-agricultural uses to creep in. Most of the farmlands close to the new town boundaries have fallen vacant or succumbed to conversion for open storage uses. Such conversion necessitates landfilling which often results in flooding and blockage of water courses. The subsequent proliferation of structures, squatters and rural industries will further aggravate water pollution, adversely affecting crop production and economic return.

The proliferation of these activities has significantly changed the character of the rural areas and is nicely summed up in the consultancy study on port back-up facilities in the New Territories (Shankland Cox Ltd, 1994):

“The rapid rise of activities, largely occurring in a haphazard and uncontrolled manner, has threatened the amenity of the rural environment. Many container storage and repair sites now completely dominate the landscape. Stacking of containers up to seven units high on sites comparing in size to small villages, having a particular dwarfing effect on surrounding rural communities Many sites are in close proximity to residential uses or near sensitive environmental areas. Adverse environmental impacts on these include noise from movement of heavy vehicles and container handling operations, air pollution from vehicles moving on unpaved sites and roads, visual intrusion and road safety hazards.”

The rural landscape on the other side of the border has also witnessed similar changes. Some of the Hong Kong farmers have crossed the border to engage in market gardening. Industries, particularly the labour intensive ones, have moved too. PRD is gradually taking over many of the functions, taking advantage of the cheap labour cost, building cost and land rent. If the trend continues, it is possible that agriculture may ultimately be phased out

and this may promote further proliferation of open storage uses on rural lands.

The continued economic growth in Hong Kong and the PRD is expected to hasten changes in rural land use, particularly at the border area where there is a high level of cross border interaction. In North West New Territories (NWNT) the pressure on rural lands is the greatest and changes the most rapid as the border gradually diminishes.

The pressure on rural lands is not unique to Hong Kong. In the UK, there is a also grave concern about the non-agricultural use of rural land as the urban areas outgrow their normal limits. Hong Kong is probably different from other countries in that the use of rural lands has long been exempted from planning control. Furthermore, unlike other rapidly developing countries in the region, there is no government intervention in Hong Kong to protect the agricultural sector by way of tariffs and subsidies.

THE MAJOR ISSUES

The Territorial Development Strategy (TDS) Review currently undertaken by the government provides a timely opportunity to re-examine the situation. As stated in the preamble of the consultation document:

“The broad goal of the TDS review is to establish a long-term land use-transport-environment planning framework within which the necessary land and infrastructure can be provided, having regard to resource availability, to enable Hong Kong to continue to grow as a regional and international city and to become a better place in which to live and work.” (Planning Department, 1994, p. 3)

It is apposite for the TDS review to address the issues of rural land use in Hong Kong as these are not only planning issues but are also political ones. From the planning perspective, the key issue is what is in the best interest of the public having regard to the growing aspirations of the community for a high quality of life and a better environment. There is also the political consideration of the interest of the indigenous people of the New Territories, the need of the other residents of the NT for a clean and amiable living environment, and the demand of the urban dwellers for the amenities which only the countryside can provide.)

From the ecological viewpoint, the call to preserve the rural countryside is well understood. A city without nature is not sustainable. The countryside is a retreat for urban dwellers, its ecological subtleties provide the urban man with another perspective of the world. Rural lands also support another form

of production and maintains a balance between urban and rural functions, making the city more habitable.

Granted that it is in the interest of the public to preserve the rural lands, the questions that follow are (a) whether these lands can be put to productive use given the current economic climate; and (b) if the rights of the indigenous people to use the land has been undermined.

It is often argued that agriculture is no longer profitable in Hong Kong and that the prohibition of open storage on rural lands would seriously affect the livelihood of the indigenous people. Many contend that open storage is less environmentally damaging than most urban activities. They also claim that open storage in the NT is not only necessary but also in the public's interest as it makes up for the shortfall of land for which the government has made inadequate provision.

Whilst the agricultural and open storage uses of rural land are competitive, they are not necessarily exclusive. It is unrealistic to expect that all 4000 ha of fallow lands can be restored for profitable productive use. Equally unreasonable is the assumption that open storage can take up all the agricultural lands that have fallen vacant. In 1994, there are about 550 ha of land being used for open storage, out of which less than 30 ha of are located in areas to be zoned for this purpose. Demand for open storage is estimated to increase only to 850 ha by 2011 (Shankland Cox Ltd, 1994).

Therefore, both uses can be accommodated in the rural lands of the New Territories provided that they are channelled to their appropriate locations in view of their incompatibility. Agriculture is a form of use that is sensitive to the external environment and open storage is an activity which creates negative externalities on its neighbours. Some form of segregation in the form of zoning is required to ensure that open storage will not adversely affect the rural environment in general and the agricultural industry in particular.

PROPOSED AGRICULTURAL STRATEGIES

Logic and experience tell us that the rational use of rural lands in Hong Kong cannot be left to market forces alone. Some form of planning control is needed to define the uses which the land can be put to. [The Town Planning Ordinance was accordingly amended in 1991 to extend the scope of planning to the rural areas. This removed the ambiguity in the law, stipulated uses that were permitted and laid down the basis for enforcement action. [Development proposals within these rural areas are now scrutinised for their compatibility with the surrounding environment and planning intention. All these changes help preserve the character of the rural areas.

Incorporated into the amended Town Planning Ordinance is the power to take action against unauthorised development so that the environmental damage can be curtailed. Whilst this power is not applicable to unauthorised uses which had existed before the amendment in 1991, it provides the basis of the government to deal with activities which take place on government lands or where the lease conditions are being breached.

In working out the outline zoning plans for the rural areas, attention should be given to the preservation of good arable land and fish ponds in areas where there remains scope for worthwhile investment in agricultural activities. Designating suitable land for agriculture through statutory zoning is badly needed to safeguard existing farms and to encourage rehabilitation of fallow lands for farming. It also frees land previously held up for speculation. Most important of all, zoning provides the security of land tenure. After all, agriculture is land based and land security affects investment decisions on the part of the private as well as the public sector.

There are of course many queries about the planning approach to promote agricultural use of the land. The two most frequently asked questions are whether it is in the public interest to maintain agriculture and whether agriculture is at all viable.

Regarding the first, the environmental benefits of preserving the rural landscape have been mentioned in preceding sections. On purely economic grounds, it does not matter whether Hong Kong keeps its agriculture provided alternative food supplies are available. However, the total demise of agriculture is not in Hong Kong's best interest.

Perhaps the most compelling ground is that Hong Kong has to maintain a production level that could tide over any period of supply vacuum at times of serious disruption of imported supplies. Even at times of normal overseas supply, local agricultural produce serves to stabilise the price and offers consumers a wider range of choices in terms of quality and variety. Agriculture is also a traditional way of life for the rural people. It helps keep the rural character of the land and provides an economic basis for a thriving rural community.

Those who oppose to keeping agriculture in Hong Kong may argue that even if agriculture is desirable, it may not be viable. After all, the last thing the community would like to see is zoning only to retain the land as undeveloped farming. It adds nothing to the amenity of the rural landscape and prevents the land from being used for other profitable uses.

To be viable, agriculture in Hong Kong has indeed to make certain adjustments and redefine its direction. Traditional farming has to give way to modern, efficient and environmentally acceptable practices which aim at

meeting the upmarket demands. In an affluent society with a shift toward green consumerism, there is an increasing demand for farm produce which are good, safe and clean.

The government should not of course merely assign the land for such purposes without pulling in sufficient resources to encourage and support agricultural development along these lines. For agriculture to take on the new course, initiatives would have to come from the government to focus on the following tasks:

- a) research, develop and promote modern, safe and environmentally friendly farming technology aimed at the production of high value, good quality produce;
- b) explore the scope for the industry to become self-supporting and more business-minded to fully realise the development potential of the industry.

The latter can be achieved by establishing a government-owned corporate entity responsible for promoting and steering agricultural development. The operation of this corporate body serves many purposes, the principal one being a model for other farmers.

Agriculture provides only the livelihood, it does little in improving the general rural environment. To cater for the latter, the government has embarked on a \$4 billion ten-year program which helps make life more pleasant and secure by provision of the essential infrastructure, building new drains and clearing of existing ones to alleviate the flooding problems. In view of the rapid pace of development in rural areas, this rural planning and improvement strategy has to be expedited or else the environment may continue to deteriorate which could only be put right at a much higher cost.

PROPOSED NON-AGRICULTURAL LAND USE STRATEGY

As aforesaid, there has been a lot of pressure for converting rural lands for nonagricultural uses such as low density housing, open storage, warehouses etc. There is considerable scope in the rural areas to accommodate these land use changes provided that these activities are channelled to the appropriate locations and are assessed for their likely environmental impacts.)

Some of the pressure may come from the demand of land for village housing from individual farmers and village housing projects. While the planning system should allow the flexibility for the rural community to erect farm houses close to the agricultural fields, large village housing developments should be channelled to urban transition areas and selected

rural locations already provided with transport services and basic infrastructure. Furthermore, development should also avoid environmentally sensitive areas such as nature reserves, marshes and wetlands of NWNT. At locations of high landscape value, development proposals should be carefully screened to safeguard the environmental amenity.

There is also a great demand to convert agricultural land for open storage uses. A recent study has already indicated the acute shortage of land for port back-up and open storage activities in Hong Kong (Shankland Cox Ltd, 1994). The shortfall for 1996 is estimated to be in the range of 57 ha to 107 ha. This demand cannot be ignored and unless suitable alternative sites can be found, the shortfall has to be met in the NT. The best strategy is to concentrate these activities in a few selected locations hence avoiding the dispersal of these activities all over the NT. This approach helps contain the environmental problems arising from these activities.

The administration has of course to consider adopting a more pro-active approach to increase land supply for storage purposes particularly at locations close to the new container ports. To pre-empt problems and minimise impacts, there is a need for the administration to stipulate conditions with which new development application must comply; and to introduce a licensing system together with a code of practice to those existing open storage areas that are amenable to improvement.

DISCUSSION

The problems that have occurred in the rural lowlands of NT are the consequence of the lack of co-ordination and planning controls in rural development in a high pressured environment. While these problems can hardly be solved without resort to planning controls, planning provides only the framework for future development and does little in restoring the damages that have taken place. The government has to take a more positive and pro-active role in rural land use management. As aforementioned, preservation of the rural landscape cannot be left to the market forces alone.

The amendment of the Town Planning Ordinance in 1991 was of course a welcoming move. It also signified a fundamental change in the approach of the government in managing rural lands, from one of non-intervention to a role of co-ordination (Bachnar, 1991). Plans however only set the bounds and goals; they do not bring about changes. The initiatives have to be taken by the private sector or the government. For example, it has been argued that if agriculture in Hong Kong is to survive, it must change from the traditional mode of labour intensive practice to value added activities. For this to

happen, the initiative has to come from the government to define new direction and to demonstrate to the industry that agriculture is still viable.

Moreover, planning is forward looking and outline zoning plans cannot rectify the problems that have occurred. Now that a considerable portion of the rural land in the NT has already been spoiled, no matter how noble the planning goals may be, to have the original rural landscape restored and the degraded farm lands rehabilitated will be impossible unless there are government inputs.

The planning approach can also be criticised for the lack of flexibility to cope with new circumstances and the changing development situation. Given the pace of development in Hong Kong and the PRD, there is a need for the TDS to review periodically to keep abreast of the latest development.

CONCLUSIONS

The rapid development of Hong Kong and emergence of Hong Kong as a hub in the region have brought significant pressure on the rural lands in the NT. Agriculture is on the decline and the environment is rapidly deteriorating. It is argued in this paper that the total demise of agriculture is not in the best interest of Hong Kong and there is a need to convert part of the lowland rural lands for open storage use. While agricultural and open storage uses are incompatible, they could be channelled to their most appropriate locations through (statutory zoning.)

Planning alone does not automatically bring about the restoration of the rural landscape. The government has to take a more positive role in promoting a modern type of farming that caters for the upmarket demands. She has also to take a pro-active role in supplying land for port back-up and open storage activities and stipulating conditions which these operators must comply.

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Recreation and Tourism

Kent HAYDEN-SADLER

INTRODUCTION

The Territorial Development Strategy (TDS) is one of the most important strategies that set forth a framework for the long-term physical development of Hong Kong. Recreation and tourism should be two of its most important components:

- Planning for recreation is an essential ingredient to provide Hong Kong residents with a higher quality of life as the increasing standard of living in the Territory provides greater leisure time; and
- Planning for visitors and tourists is essential to provide the visitor and tourism industry with the regulatory framework and essential infrastructure to be successful. The visitor and tourism industry is one of the most important industries in Hong Kong's open economy. It is the industry that brings businessmen and businesswomen into Hong Kong, provides them with accommodation, activities, entertainment and a range of support services while they are here. Without a high quality, successful visitor and tourism industry it would be a great deal more difficult for Hong Kong's other industries to play their part in the international economy!

Recreation And Tourism

There is clearly a significant overlap between recreation facilities and attractions for local residents and facilities and attractions for visitors. The range of recreational facilities that predominantly attract local residents such as country parks, sports facilities and cultural events are also all available for visitors. Facilities and attractions which primarily focus on visitors such as the hotels, the Peak Tram and tours are also widely used by local residents.

There are very few, if any, facilities or attractions which are exclusively for local residents or exclusively for visitors. Thus the range and supply of local recreation facilities is reinforced by the spending and demands of visitors. Recreation and tourism are and should be complementary.

The Pearl River Delta

Also complementary are the facilities and attractions of our neighbours in the Pearl River Delta (PRD):

- Hong Kong provides the cosmopolitan flavour of an international city and provides the excellent facilities that draw visitors to the region;
- Macau offers a more leisurely pace and Portuguese colonial influences;
- Guangdong has a series of fast developing cities and traditional countryside which gives a range of China experiences and provides for more space extensive activities such as golf courses and theme parks.
- Increasingly the PRD is providing a package of these attractions for international visitors and for local residents.

The HKTA is a full participant in the recently launched Pearl River Delta Marketing Organisation (PRDMO) which also embraces the tourism organisations of Guangdong and Macau. The participants see Hong Kong as the main attraction to international visitors. The aim is to increase inbound tourism to Hong Kong and the PRD through joint marketing of the PRD tourism product. This will become increasingly important in the future.

However, our neighbours probably see Hong Kong residents as a far more important source of their visitors than international visitors. The theme parks of Shenzhen and the golf courses in Shenzhen, Zhuhai and Zhongshan are all pitched strongly at visitors from Hong Kong. There will be many more such attractions in the future.

Visitor and Tourism Strategy

Hong Kong has been and remains a very successful multi-faceted travel destination. It attracts business and leisure visitors from a wide range of international destinations. Recently more and more visitors have come from within South East Asia and from the PRC. These trends are likely to continue. In this context the HKTA with the co-operation of the Planning Department has launched a Visitor and Tourism Study:

“to formulate a visitor and tourism strategy suited to the future needs of Hong Kong and to recommend appropriate courses of action to implement a selected strategy”

The study is looking at:

- world and regional tourism trends and prospects and the way these will affect Hong Kong;
- the value of tourism to the Hong Kong economy;
- forecasts of the possible number of visitors to the Territory in the future;
- the existing and future requirements for visitor facilities, attractions, services and events; and
- constraints and opportunities for tourism development.

We envisage that the results and the selected strategy will be a powerful tool for us to influence Government on the future development of the industry.

The purpose of this paper is:

- to demonstrate the importance of the visitor and tourism industry to Hong Kong;
- to outline the key elements of the TDS for recreation and tourism; and
- to highlight some of the critical areas that need to be addressed urgently in the successful implementation of the TDS.

THE VALUE AND ROLE OF TOURISM

Tourism is clearly a valuable component of the Hong Kong economy and makes a significant social and cultural contribution.

In 1993 total visitor spending was \$76 billion. This is an average of approximately \$8,500 per visitor. Visitors spend their money on a wide range of goods and services including accommodation, food and beverages, transport, travel and tours, entertainment and shopping. Without visitors and tourism the receipts of a wide range of industries in Hong Kong would suffer!

The industry makes a valuable contribution to the economy. It is estimated to have contributed \$67 billion (8 per cent) of Hong Kong's Gross Domestic Product in 1993. It is emerging as one of the larger economic sub-sectors. Over the period 1982 to 1992 the average annual growth in the direct

contribution of tourism to the economy was 19 per cent per annum. On this measure tourism outperformed all other major economic sectors and sub-sectors including wearing apparel, textiles, construction, banking and finance and construction.

The tourism sector provides direct employment for 83,000 people in a range of occupations. Visitor spending also helped underpin an estimated 46,000 jobs in other economic sectors.

Visitors are a catalyst for the provision of a wider range of facilities than there would otherwise be, such as shops, restaurants, cultural events, exhibitions and museums. These facilities provide an opportunity to enrich the quality of life of the city. Visitor interest also provides a healthy stimulus to the case for the preservation and conservation of local heritage including our natural environment.

THE TERRITORIAL DEVELOPMENT STRATEGY REVIEW: RECREATION AND TOURISM

The TDS Review sets out six objectives. They are:

- to enhance the role of Hong Kong as an international city;
- to ensure that adequate provision is made to satisfy land use and infrastructure needs;
- to conserve and enhance significant landscape, ecological and heritage features;
- to enhance and protect the quality of the environment;
- to provide a framework for a flexible transport system; and
- to provide a flexible and implementable strategy.

The Administration has made it clear in response to public consultation that it views each of the six objectives as of equal importance. However, to many people the objectives are likely to appear to be contradictory. For example, how is a balance to be struck between the conservation and enhancement of significant landscape and ecological features and the satisfaction of land use and infrastructure needs? In practice, it is likely to prove necessary to give different weight to the different objectives.

The issue of balancing the objectives will be as important in the tourism sector as any other. For a healthy visitor and tourism industry it is essential that adequate provision be made for land and other resources for:

- entry and exit facilities;
- visitor accommodation;
- facilities for business visitors;
- attractions for leisure visitors; and
- transportation infrastructure within Hong Kong.

However, it is also essential that adequate environmental protection be provided both in Hong Kong and across the border in the PRD. If the environment of Hong Kong deteriorates it will affect the number of visitors (particularly the discretionary travel, leisure visitors) that will come to Hong Kong. The number of visitors will also be affected if Hong Kong falls behind its international competitors in cleaning up the environment. Pollution does not recognise borders. It is not enough to address the problems in Hong Kong if it simply displaces the problem to Guangdong. A greater dialogue is probably necessary and a wider plan in order to try to reconcile these wider issues.

A Strategy for Recreation/Conservation/Tourism Development?

There seems to be no co-ordinated territorial policy for recreational and tourism development emerging from the TDS Review. The concept of utilisation by local resident and by visitor does not seem to be clearly understood among the relevant Government Departments. There is an assumption that planning for tourism can be subsumed in planning for recreation. There may be an overlap in many areas but there are also potential differences in emphasis.

For recreation the Foundation Report for the TDS seeks to:

AREA	RECREATION
Urban	provide local open space for passive recreation
Urban Fringe	urban fringe parks
Rural	direct private recreation by Government investment in basic infrastructure
Countryside	restrict type and extent to limit environmental impact
Water Based	extend statutory protection of inshore waters and beaches

Within this context the TDS sets out objectives for tourism:

- to maximise potential areas of tourism attraction by rationalising land use patterns to reduce conflict;
- to reserve land for the future development of large-scale tourist attractions and to provide space for the re-provisioning of existing facilities;
- to develop new areas of tourism interest on the new reclamations;
- to identify areas of cultural heritage and scenic spots in rural and coastal areas; and
- to investigate alternative institutional mechanisms or agencies to monitor the development of tourist attractions in Hong Kong.

These objectives really relate to the provision of attractions. They are divorced from the concept of provision of the entry/exit and accommodation facilities, for example, that are necessary to support the industry.

HOW IS THE TDS REVIEW TO BE IMPLEMENTED?

One of the major concerns of the visitor and tourism industry is how a strategy such as the TDS should and can be implemented. No doubt there are similar concerns in other fields!

The issue of hotel accommodation is a good example. It is an issue that is of immediate concern to all of us in the industry. Unless the supply of visitor accommodation can be encouraged to grow in line with growth in demand, the development of the visitor and tourism industry and its contribution to the economy will be curtailed. The TDS Review groups hotel development with office development for the purpose of its assessment of future requirements. This is no surprise since the planning system in Hong Kong treats both as land-use acceptable in a "Commercial Zone". The TDS Review projects continuing demand for office development and continuing demand for new hotels. It does not address the balance between the two.

(It notes that in recent years hotels have tended to decentralise away from traditional tourist areas to secondary centres (Yaumatei, Mongkok and Wanchai) and to off-centre nodes (North Point, Quarry Bay and Shatin). It expects the trend to continue because of the lack of suitable sites in the core area:

"driving hotels to outer areas which can offer lower land price and more choices for development" (Planning Department, 1993, p. 46)

There is no assessment of whether this is good for the industry or for the economy of Hong Kong. There is no assessment of whether Hong Kong needs hotels in the Central Business Area. There is no assessment of the impact on Hong Kong as a tourist destination if the hotels are squeezed out of the traditional tourist area.

The TDS Review projects a substantial increase in the demand for new hotel rooms (an additional 35,700 rooms by 2001 and 68,400 rooms by 2011). It assumes that since:

“hotel development can be incorporated in a wide range of land use zonings, the supply is quite flexible and hence no major problem of land provision is envisaged” (Planning Department, 1993, p. 46).

TDS suggests that new hotel development should be encouraged in five locations:

- existing tourist centres (Central and Wanchai Reclamation, West Kowloon Reclamation, Causeway Bay and Hung Hom Bay);
- new centres (Kowloon Bay Reclamation);
- new hotel nodes (Quarry Bay, North Point, Tsuen Wan);
- Tung Chung (ancillary to the airport); and
- non-Metro centres (Shatin and outlying islands).

There is nothing wrong with these suggested locations. They would provide opportunities for the private sector to provide a wide range of visitor accommodation to meet the varied needs of potential future visitors.

However, there is a fundamental flaw in the assumption that because hotel development is permitted in a wide range of zoning that it will actually happen. The experience of the last two years in which we have seen six important hotels close because their sites are more valuable in office use (Lee Gardens, China Harbour View, Ambassador, Harbour, Fortuna and the Emerald) should be evidence of this. At a time when visitor arrivals have been increasing strongly and occupancy levels and hotel profitability have been increasing the number of rooms Hong Kong has to offer visitors has been shrinking. There are other planned demolition or conversion of hotels around the corner and relatively few firm plans to build new hotels.

The reason for this is widely recognised and has been clearly demonstrated in the Visitor and Tourism Study. It is that the value of a site in commercial office use is far more valuable than as a hotel. (The hotel may be a successful business offering a good return on the investment for an owner but in prime locations an office development might be as much as five times more valuable. This is not a short-term cyclical phenomenon.) It is because

the market for hotels and offices is substantially different. It is also a result of structural changes in the economy which have led to a burgeoning demand for office space particularly in central locations. To maintain the varied hotel supply the Territory needs it is essential:

- to zone sites specifically for hotel development in suitable locations;
- to release as a matter of urgency new sites; and
- amend the Building Authority's outdated practice of granting lower plot ratio for a hotel than for an office on the same site.

Only through these measures will Hong Kong get the new hotel supply it needs to allow the visitor and tourism industry to grow and continue to play its full role in the continued prosperity of Hong Kong as an international city.

The TDS Review is a bold attempt to formulate a long-term land use-transport-environment development framework but the clear message from the tourism sector is that the regulatory framework that backs up such visionary plans as the TDS Review needs to be carefully and clearly thought out. We need plans which are practicable and implementable. Implementation is particularly important for the recreation and tourism sectors because although they are often viable they often prove to be less valuable land uses than other commercial, residential or industrial activities in Hong Kong.

CONCLUSION

The TDS Review is an important long-term development strategy for Hong Kong. Hong Kong has experienced a long period of steady economic growth that has raised our living standards and our expectations. One of the consequences of this has been and will continue to be an increasingly important role for recreation and leisure.

Facilities and attractions for local resident recreation and facilities and attractions for visitors overlap to a degree. Good planning and provision for local resident recreation will benefit the visitor and tourism industry. Good planning for the visitor and tourism industry will benefit the local community (by providing a wider range of things to do and by stimulating the economy!).

A clearer strategy for the development of the visitor and tourism industry is needed in order to meet the substantial challenges of the years to come. A greater emphasis needs to be put on a range of practicable measures designed to facilitate and encourage the development of the industry. The Visitor and Tourism Study is designed to do just that.

Looking ahead to the future of the TDS Review, once the results of the technical assessment of the development options and the comments received in the public consultation have been fully taken into account and incorporated into a preferred option and recommended strategy, the general public should be invited again to comment before the TDS Review moves forward to implementation. Armed with our own vision for the future of the visitor and tourism industry, HKTA is looking forward to that!

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Conservation and Environment

Gordon T.L. NG

SUSTAINABLE DEVELOPMENT

The landuse strategy within a sustainable development framework is expressed in the Conservancy Association's Agenda 21 for Hong Kong: Towards a Green Era.

"Government should review existing land use pattern and develop an integrated approach in the formulation of land and development policies with a view to achieving sustainable development. This means to include environmental, social, demographic and economic issues." (Conservancy Association, 1993, p. 18)

The scope for landuse strategy planning is wide-ranging, from landuse zoning, land policy to development policy. These three aspects of planning are essential to maintaining a "good" environment.

Landuse zoning has been the traditional approach to environmental protection. Zoning of different landuses according to their compatibility is one important way of ensuring a better living and working environment. Industrial districts are kept away from the residential areas. Industries that are more polluting should be located in remote areas. Areas with conservation value are zoned in such a way that development is either not allowed or strictly regulated.

The landuse strategy is closely related to the land policy. The amount of land to be allocated for certain uses is in turn closely related to the development policy. These latter two elements depend to a large extent on the value the society put on the allocation of our limited land and natural resources in Hong Kong and the perception of such resources in the global context.

Four principal areas in the society's development are considered: environmental, social, demographic and economic. A fifth area is transportation. These concerns are often prioritised such that decision makers may justify their decisions on particular land and development policies. The

premise of this presentation is that an integrated approach is required to address these concerned areas in totality rather than in isolation. It is also the intention of this presentation to examine how environmental and conservation issues should be considered as integral parts of land and development strategies, as well as how landuse is affected.

NATURAL RESOURCES IN HONG KONG

Hong Kong is a small place with a size of 1,078 sq.km. and a population of over 6 million. However, it should be noted that most people concentrate in the built-up urban area which occupies about 14% of the total area. The majority of the land is covered by grass and scrub, and woodlands (69% of total land area). Despite its small size, Hong Kong is endowed in biological resources. There are 38 species of land mammals, 352 recorded species of birds, over 20 species of amphibians, 80 species of reptiles, over 200 recorded species and forms of butterflies, 150 commercially important species of fish, crustaceans and molluscs, 50 species of corals, 2,700 species of vascular plants. In Mai Po Marshes (an internationally significant site for migratory birds of about 380 ha), there are more than 250 species of birds. Ng and Ng (1992) suggest that Hong Kong has more native species of plants, mammals, reptiles and amphibians than the whole of Britain, which is about 200 times bigger than Hong Kong.

There is tremendous pressure on the countryside arising from various sources: the prosperous economic, construction and trading activities leading to the development of open storage of containers and other material; the linkage with China requiring more infrastructure for transport in the New Territories; the rising affluence and expectation for living space resulting in residential development and recreational facilities (including golf courses). Such pressure has posed difficulties for nature conservation in two main ways. Firstly, the rural landscape has changed from natural or less hostile agricultural (typically abandoned) habitat to developed land. Pollution has further threatened directly the survival of wildlife.

Hong Kong has a deep water harbour. The harbour provides not just a good location for port development. It also provides good flushing capacity for the wastewater and sewage discharged into the harbour. The subtropical monsoon climate in Hong Kong also helps to disperse the air pollutants arising from its industrial activities. As far as the economic activities and population are kept under a threshold and the pollution assimilation or dispersal capacity is not exceeded, Hong Kong might still enjoy a "good" environment. This also depends on the expectation of the residents and

their perception of what constitutes a “good” environment.

Since the seventies, the physical environment in Hong Kong has been increasingly stressed as a result of rapid urban and industrial development. The natural environment in Hong Kong has been unable to cope with the increasing stress arising from the rising pollution level (some pollutants start accumulating very rapidly before the natural environment can assimilate them). The concentration of human activities (transport, sewage, industry, etc.) has overloaded the environment. While government’s efforts to conserve and protect the environment through the various departments such as the Agriculture and Fisheries Department and the Environmental Protection Department initiated in the late seventies and eighties have remedied some of the problems, such efforts have been insufficient to cope with the growing demand for the environmental services as a result of both the more prosperous economic development and rising expectation of its more affluent population.

PLANNING FOR A BETTER ENVIRONMENT

The compatibility of landuses, with regard to the pollution generated by a particular landuse and the sensitivity of other landuses to such pollutants, is one of the major planning considerations for a better environment. Even with the best available environmental mitigation measures, some landuses may still generate or have the risk of generating pollutants that are not acceptable to other landuses. Such detrimental landuses need to be located further away from other sensitive landuses.

On the other hand, some landuses are supplementary to each other. For example, conservation of natural resources is complementary to some form of recreational uses whereas recreational activities may provide income or justification for government to designate land for conservation and set aside resources for proactive management of the conservation areas.

Economic development, which is often associated with landuses (e.g. manufacturing industry) generating major pollutants, is often considered incompatible with environmental protection. From the viewpoint of the society at large, it should be noted that environmental protection should not be viewed as an obstacle to economic development. Rather, it is important to maintain a “good” environment for its people who conduct economic activities. A “good” living, working and recreational environment is essential to the health and productivity of the people. The supplementary nature of recreation and conservation is a good example of how environmental protection is important for the psychological health of the people.

IMPROVING THE ENVIRONMENT

This section recommends more practical aspects of landuse strategies for Hong Kong. Two main areas are examined: (a) environmental infrastructure; and (b) natural habitats.

The improvement and upgrading of environmental infrastructure is essential to maintaining a healthy local environment. Planning needs to be integrated with environmental policy in determining the provision of environmental infrastructure. For example, the provision of secondary or tertiary sewage treatment facilities has implication on land availability and landuse zoning. The support of recycling activities may include allocating land for recyclable sorting facilities. Table 13.1 lists the major environmental infrastructure and facilities that should be considered an integral part of a territory wide landuse plan. Some of these are already incorporated but some are still lacking or insufficient.

Previous section has suggested that Hong Kong is a biologically diverse region and the preservation of such resources is important for recreational purpose. Hence, the rural environment should be conserved to serve this purposes. Currently, about 40% of the land area is designated as country parks. There are 49 Sites of Special Scientific Interest and three Nature Reserves. Although the country parks are protected by law and development

Table 13.1 Major Environmental Infrastructure and Facilities

Major Facilities	Current Status in Hong Kong
Waste recoveries facilities	lacking
Waste collection facilities	a network of transfer stations and refuse collection points
Waste treatment/disposal facilities	incinerator to be phased out and three strategic landfills are built
Sewage treatment facilities	a few treatment plants up to secondary level, 50% sewage untreated
Air pollution monitoring stations	mostly for ambient level, insufficient for ground level
Alternate energy supply facilities	lacking
Bicycle trail and parking	insufficient
Country Parks	40% of total land area
Conservation Areas	insufficient statutory support

is, supposedly, subject to stringent regulation, they are often threatened by the various types of development such as golf courses (e.g. Shalotung), landfills (e.g. South West New Territories Landfill) and others.

The provision for environmental protection and conservation should be incorporated in other areas, such as energy production and consumption, and transport system. The design, planning and zoning of these facilities need to consider other options which may be environmentally more friendly and more sustainable. For example, a shift of energy source from predominantly fossil fuel to more diversified energy sources including renewable energy or waste-derived fuel may require some adjustment in the current landuse and land allocation policy. A good and efficient public transport system should also be encouraged.

CONCLUSION

Towards the twenty-first century, the dynamics of political, economic, social and environmental issues become more complicated. Planners would have to grasp these forces in developing the framework of landuse strategies within the goal of sustainable development. The environment is an integral part of the planning process and should not be neglected.

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**TRANSPORT AND
INFRASTRUCTURE
STRATEGIES**

Roads

Fred N. BROWN

The economic and land use development of the Pearl River Delta Region in the past twenty years has been nothing short of astonishing. Transport infrastructure, and roads in particular, forms a fundamental foundation for this growth. To this end massive investment in roads has taken place in Hong Kong and Guangdong Province and even greater investments are planned and proposed for the future.

This paper provides the following:

- A review of road development in the past 20 years
- An assessment of future roads
- An overview of current plans and proposals
- A commentary on critical financing factors
- A summary of key issues for the future

The present paper is presented as part of a broad ranging series of papers at the Conference and it is assumed that other papers cover planning, economic and related matters in greater detail.

DEVELOPMENT IN HONG KONG AND GUANGDONG PROVINCE

In the past 20 years the economic base of Hong Kong has changed from a largely export-led manufacturing centre to a financial service centre controlling industrial processing units in Guangdong Province and elsewhere in China. This economic shift has brought with it high incomes, raised expectations for quality of living, and associated growth in demands for housing and services. The territory's land uses have changed as follows:

- 1970's
- Establishment of New Towns Programme
 - Redevelopment in urban areas

- 1980's
 - Development of service sector in Central and downtown areas
 - Consolidation of New Towns
 - Migration of industry to China
- 1990's
 - Continuation of trends of the 1980s leading to:
 - Concentration of jobs in downtown areas
 - Shortage of jobs in New Towns
 - Suburban developments in New Territories

The future plans for the territory to a large degree reinforce these trends with:

- Reclamation in the harbour area for expansion of the service sector
- employment
- Further New Town development
- Major residential development on new reclamation areas at South
- East Kowloon and Green Island
- Population growth in the North West New Territories (NWNT)

In addition, the planned new airport and port facilities at Lantau will add two major strategic generators of transport demands.

Shenzhen

Over the border, Shenzhen has grown from a largely agricultural population of 100,000 or so to a present population of 2 millions largely based on export led industry. Real GDP growth in recent years has been of the order of 15% p.a. and Shenzhen now has GDP value of around RMB350 billion .

Operating costs are going up and already Shenzhen is taking on functions as a service sector and industry is migrating to lower cost locations. The Special Economic Zone (SEZ) has now been expanded to include Boan County and is expected to have a population of 5 millions by 2010.

Guangzhou

The provincial capital has a population of 4 millions with a further 10% to 20% of migrant workers. Guangzhou is the seat of administration and education. Traditionally a centre for heavy industry, outward processing establishments have grown rapidly and spread to the outer areas and new development zones at Huangpu.

The Master Plan covers expansion to an area of 530 hectares including a new airport at Huaxian, some RMB35 billions investment in transport infrastructure, and a second city centre at Tienhe.

Other Cities

Cities throughout the Pearl River Delta and indeed Guangdong Province have developed rapidly, generally as industrial growth nodes offering lower costs than Hong Kong and Shenzhen. Key cities include Dongguan, Longgang, Huizhou, Foshan, Nanhai, etc. Populations range from 100,000 to over half a million and GDP growth rates of 10-25% per annum.

ROAD NETWORK DEVELOPMENT

Hong Kong

In Hong Kong the strategic road network grew out from the old urban areas largely to serve the New Towns. The New Territories Circular Route ("NTCR") was completed in full in 1994 when the Yuen Long Southern Bypass provided the last link. The NTCR is a dual three or two-lane expressway system linking all the New Towns to each other and to Kowloon via the Tolo Highway or Tuen Mun Road.

Within the urban area, trunk roads and expressways provide an incomplete but quite extensive network of strategic roads.

The present network is already under pressure and bottlenecks exist at the main physical barriers, for example, across the harbour, or through the mountain ranges to the New Territories.

Traffic growth in the New Territories over the last 10 years has been in the following order of magnitude:

	% p.a.	1994 Daily Flow
Tolo Highway	15	120,000
Tuen Mun Road	10	95,000

Cross border traffic comprises less than 20% of these flows. However, in the future cross border traffic is expected to grow substantially and projections are typically in the range 10-15% per annum growth.

Route 3 will form the third and central corridor through the New Territories and run into West Kowloon. It will provide links to the existing container port at Kwai Chung and the future port and airport at Lantau. This route (together with the Port Passenger Railway Line) will open the NWNT for further development and provide a new corridor to the border. Goods vehicles will comprise around two thirds, and cross border traffic around one third of the total flow.

Cross border traffic will be an increasingly important component of the

traffic flow and plans must be made accordingly. At present 95% of the traffic is goods vehicles, since private cars permits are restricted in number.

Future road plans for the territory largely add to the existing strategic capacity. A further Outer Western corridor has been conceived linking Hong Kong Island to Lantau with onward connections to Tuen Mun, possibly combined with a rail link. This may well have an important role in accommodating new links to China, as discussed below. Figure 14.1 shows the strategic highway development in Hong Kong to year 2011.

Shenzhen

The Master Plan and road layout plans for Shenzhen incorporate major East-West Routes fed by North-South expressways or trunk roads. Traffic growth in Shenzhen, like Hong Kong, is racing ahead of infrastructure. Already Lo Wu has traffic congestion typical of any city centre. East-West routes are incomplete and currently through traffic enters central Lo Wu. The border crossings are also a source of congestion due to the wait times for processing.

The road network has been developed rapidly with the upgrading of Route 107, the recently opened Guangzhou-Shenzhen Superhighway, and initial phase of the Shenzhen Urban Ring Road. It is essential that the urban network is developed rapidly and that through routes are provided to divert extraneous traffic from urban Shenzhen. Whilst the Superhighway traffic is still building up, daily flows in the range 30-50,000 vehicles occur on Route 107; at present, the highest volume of traffic tends to be in the North-South corridors linking to the SEZ.

Cross border traffic has a significant impact on Shenzhen and already the SEZ is developing plans for a fourth crossing point to divert longer distance traffic from the SEZ roads. New links are being investigated between Shekou and Yuen Long area with connections into the Guangzhou-Shenzhen Superhighway at Huangtian.

The development of a functional hierarchy of roads in Shenzhen is very important to the effective operation of the road system and the SEZ as a whole. Figures 14.2 and 14.3 show the planned major highways in Guangdong Province and Shenzhen Municipality respectively.

Pearl Delta Region

To date, the road network in the Pearl River Delta Region has developed in piecemeal manner. The Guangzhou-Shenzhen Superhighway, Foshan Expressway and northern section of the Guangzhou Expressway Ring Road

are examples of major strategic roads. At the same time substantial sections of National Highways have been upgraded to dual carriageways, many as toll roads. Various counties and cities have also developed and upgraded roads to trunk road standard. As a consequence the standard of roads varies substantially, certain duplication exists, and the investment environment is uncertain.

The longer term network proposals for the Pearl River Delta contain some very exciting prospects. Several North-South expressways have been proposed along the west side of the Pearl River. A bridge crossing is being constructed at Boca Tigris and will cut 80 km off the road journey from West to East and bypass Guangzhou. This will dramatically change the linkages between opposite banks of the Pearl River.

A major East-West route from Guangzhou to Huidong and onwards to Shantou is under development. Sections are under construction, whilst sponsors are being sought for other sections.

Several strategic north-south routes are planned including the Guangzhou-Zhuhai Eastern Expressway on the western bank of the Pearl River Delta, and the Huizhou-Heyuan Expressway which will link with the existing highway between Huizhou and Yantian Port.

More recently a route across the Pearl River has been proposed linking Zhuhai and Hong Kong and/or Shenzhen. This would have far reaching impacts on the economic relationships between the two sides of the Pearl River Estuary and bring the port facilities of Hong Kong and Shenzhen rural closer to the industrial centres to the west. Such a link would require very careful and co-ordinated planning between the Hong Kong, Shenzhen and Zhuhai authorities. Again it would overlay "domestic" traffic in each sub-region with strategic long distance traffic, much of it goods vehicles and container lorries.

Guangdong Province

Guangzhou will maintain a key role as provincial capital and the strategic roads will continue to be developed radiating from the city. The Outer Expressway Ring Road will provide the main distributor and bypass for traffic to/from Guangzhou and its early completion is vital if severe congestion is to be averted. New trunk roads/expressways are planned or recently opened to the North and West of the city including the Guangzhou-Huaxian Section of National Highway 107 and the Guangzhou-Zhaoqing Expressway. Traffic volumes of the order of 200,000 vehicles cross the city boundary each day, and key roads carry flows up to 70,000 vehicles per day.

Figure 14.1 Strategic Highway Network Development

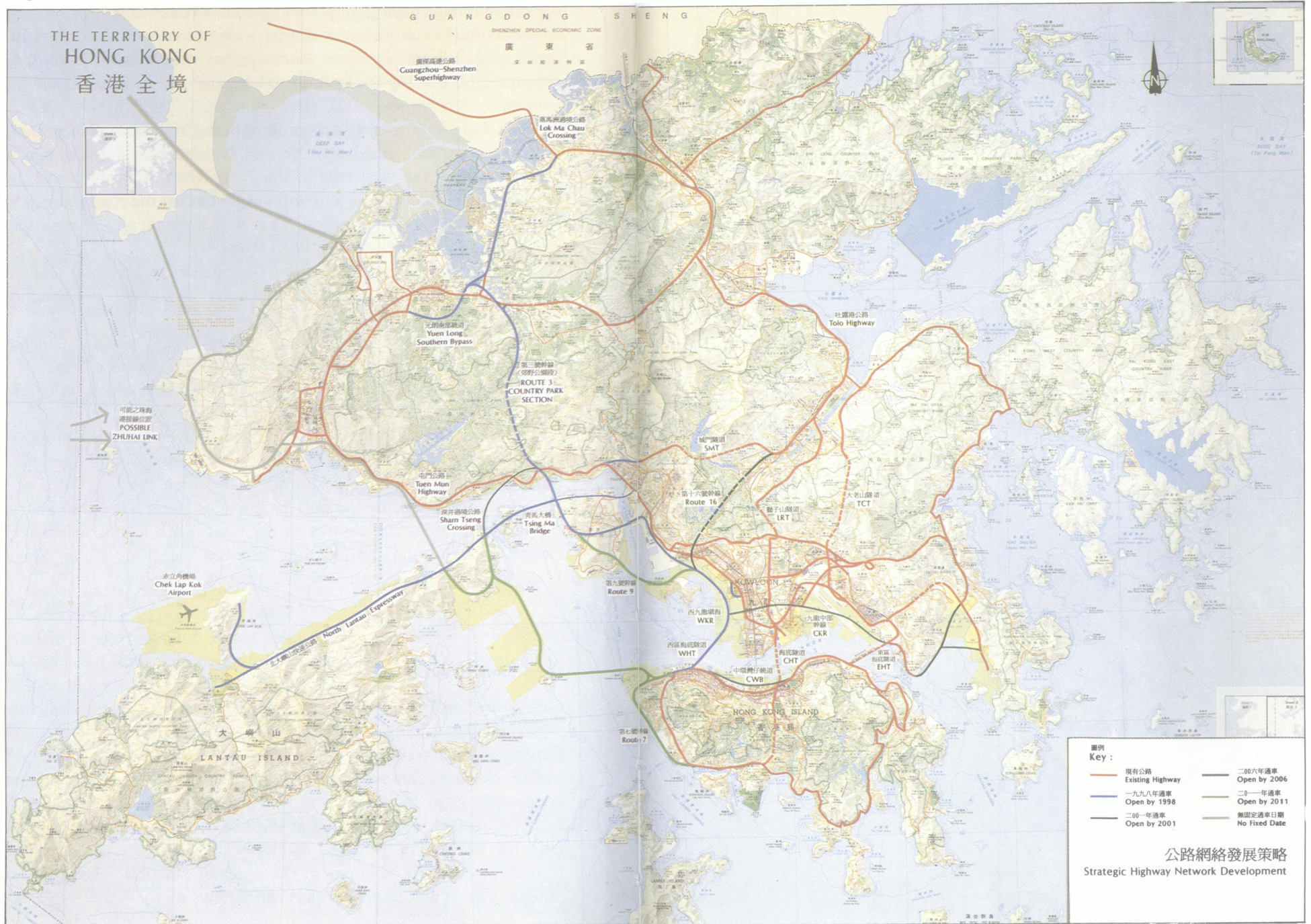


Figure 14.1 Strategic Highway Network Development

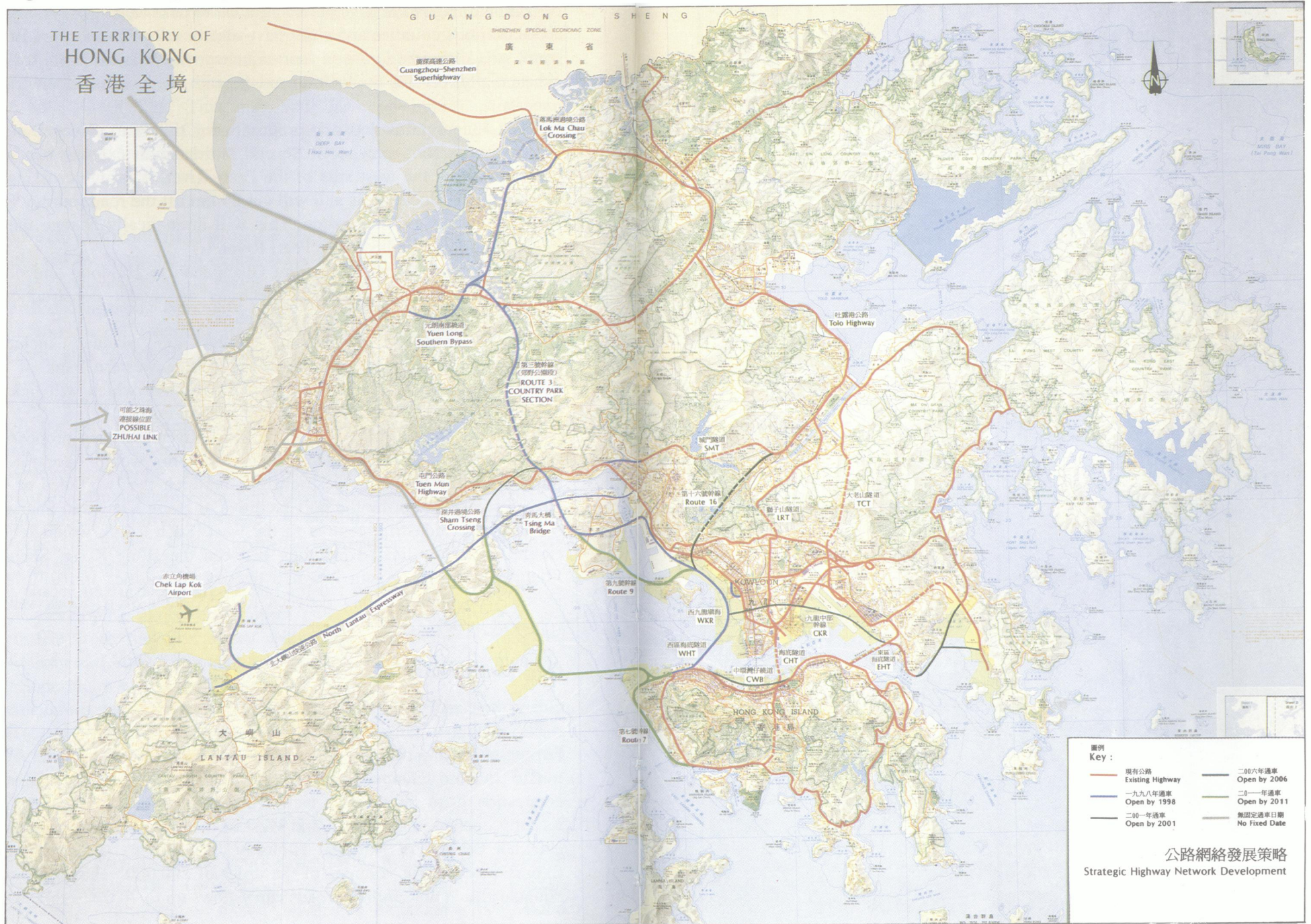
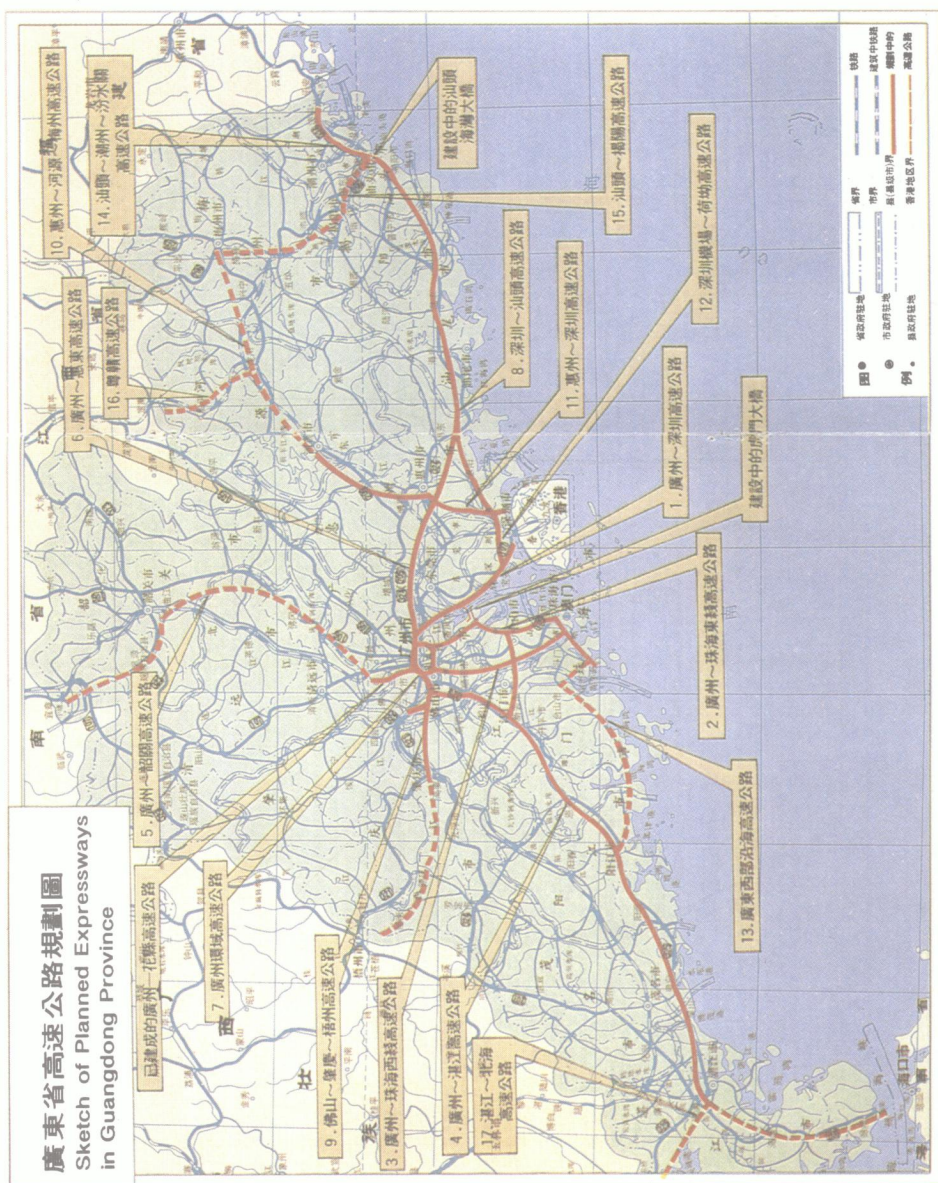


Figure 14.2 Sketch of Planned Expressways in Guangdong Province



廣東省規劃中的 17 條高速公路

1. 廣州—深圳高速公路 122公里
2. 廣州—珠海東段高速公路 150公里
3. 廣州—珠海西段高速公路 110公里
4. 廣州—湛江高速公路 527公里
5. 廣州—韶關高速公路 343公里
6. 廣州—惠東高速公路 151公里
7. 廣州—肇慶高速公路 64公里
8. 深圳—汕頭高速公路 287公里
9. 佛山—肇慶—梧州高速公路 221公里
10. 惠州—河源—梅州高速公路 262公里
11. 惠州—深圳高速公路 64公里
12. 深圳鹽田—荷坳高速公路 46公里
13. 廣東西部沿海高速公路 205公里
14. 汕頭—潮州—汾水關高速公路 76公里
15. 汕頭—揭陽高速公路 54公里
16. 粵韓高速公路 95公里
17. 湛江—北海高速公路 90公里

17 Planned Expressways in Guangdong Province

1. Guangzhou—Shenzhen Expressway 122 KM
2. Guangzhou—Zhuhai Expressway (East Route) 150 KM
3. Guangzhou—Zhuhai Expressway (West Route) 110 KM
4. Guangzhou—Zhanjiang Expressway 527 KM
5. Guangzhou—Shaoguan Expressway 343 KM
6. Guangzhou—Huodong Expressway 151 KM
7. Guangzhou Ring Expressway 64 KM
8. Shenzhen—Shantou Expressway 287 KM
9. Foshan—Zhaoding—Wuzhou Expressway 221 KM
10. Huizhou—Heyan—Meizhou Expressway 262 KM
11. Huizhou—Shenzhen Expressway 64 KM
12. Shenzhen Airport—heno Expressway 46 KM
13. Guangdong West coastal Expressway 205 KM
14. Shantou—Chaozhou—Fenhuiguang Expressway 76 KM
15. Shantou—Jieyang Expressway 54 KM
16. Guangdong—Jiangxi Expressway 95 KM
17. Zhanjiang—Beihai Expressway 90 KM

Guangdong Province, like China as a whole, has not yet achieved the level of road building attained in automobile oriented countries such as United States and some EC countries. Further, this slow addition of new roads lag behind the high economic growth achieved to date. Figure 14.4 shows that China's growth in travel demand (in terms of person-km) has been significantly higher than its rate of road building over the last 15 years.

PLANNING

The foregoing has simply demonstrated the interaction between sub-regions and the need for co-ordinated planning to accommodate the strategic and domestic traffic. This not only includes the development of a "super" strategic network, but also its integration into "domestic" sub-regional networks and broader land use planning. The possible Shenzhen-NWNT links, and the Zhuhai links are particular examples which will have reaching impacts in the Pearl River Delta.

FUNDING

Historically the Hong Kong Government has financed road infrastructure except for certain tunnels which were suitable for private sector funding. This approach has generally managed to bring on supply as it is needed, with the exception of certain bottlenecks.

Hong Kong's road programme has to date been successful in introducing Build-Operate-Transfer (BOT) schemes to the Cross-Harbour Tunnel, Eastern Harbour Crossing, Tate's Cairn Tunnel, Western Harbour Crossing (under construction), and now Route 3 Country Park Section. Opportunities for new BOT road projects in the coming decade include Route 16, a new expressway connecting Sha Tin and West Kowloon and links in the possible Outer Western Corridor. With the public sector building the Lantau Fixed Crossing, opportunities may well exist for contracting out the management and operation of the crossing.

In Guangdong Province, funding has come from

- Public funds
- International aid agencies
- Private funds

The result of this process has been the relatively swift development of local roads under public sector or local loans. The development of BOT style investment has offered great potential for private sector participation in the

Figure 14.4 Supply-Demand Gap: China

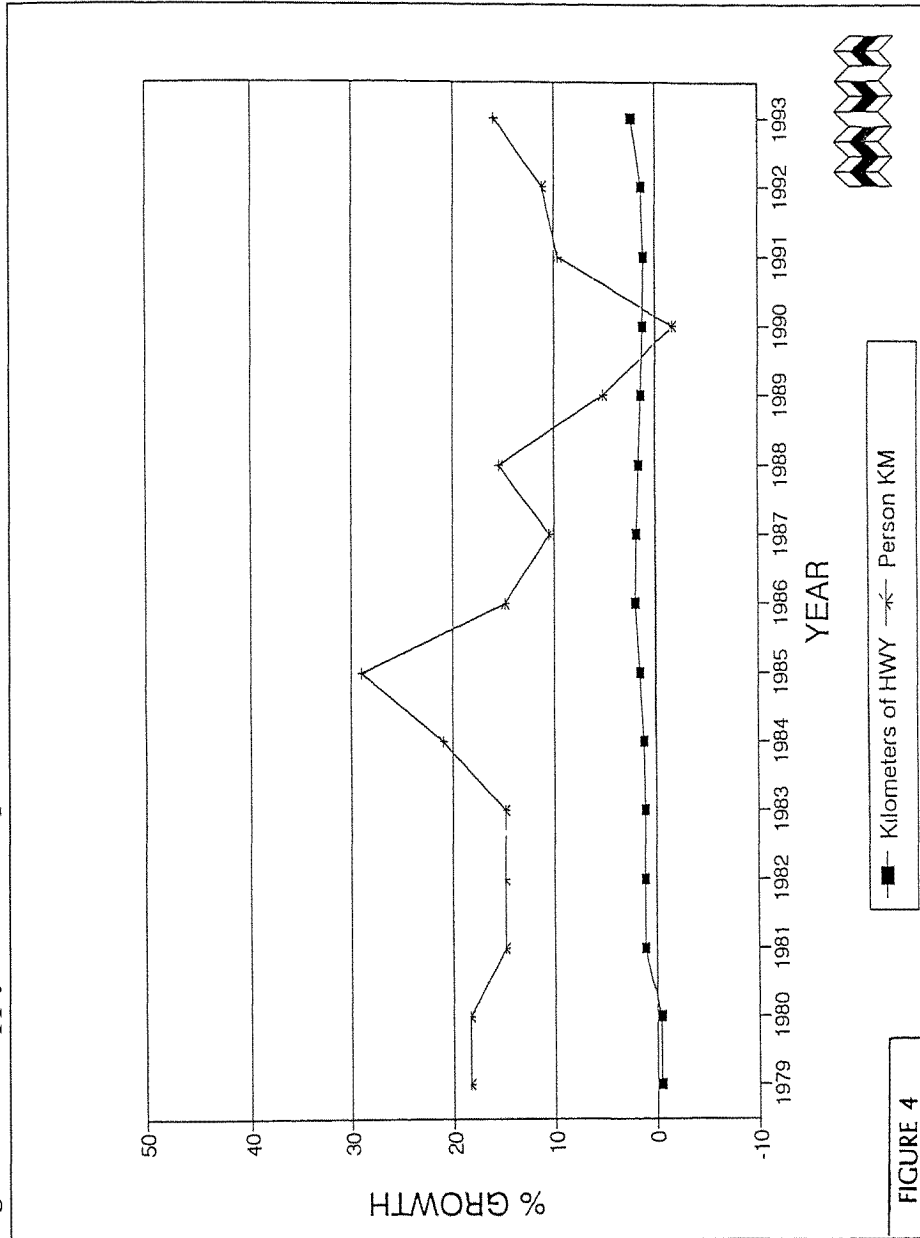


FIGURE 4

development of new road infrastructures such as the Guangzhou-Shenzhen Superhighway and Guangzhou Northern Ring Road. This approach will continue to be used as a major financing technique for large road projects, as the case in both western and other Asian countries. However, implementation programmes will be subjected to the uncertainties of the sentiment of the sources of funds and credit rating

POLICIES

A number of factors other than impacts from toll levels will affect the usage of inter-urban roads

- Taxation on vehicles, fuel and materials
- Environmental legislation on vehicles
- Fuel costs
- Vehicle safety and standards
- Restrictive legislation, e.g. lorry bans from urban areas at certain times of the day

Currently some 22,000 goods vehicles and 1,000 cars/coaches cross the border each day. This compares with 100,000 cars/coaches and 100,000 goods vehicles travelling on the Tolo Highway and Tuen Mun Road in Hong Kong; and 100,000 vehicles across the northern border of the Shenzhen SEZ. Current policies on cross border travel severely limit the number of vehicles and drivers; and virtually exclude private cars. Any relaxation in this legislation will substantially affect cross border usage and infrastructure requirements.

KEY ISSUES FOR THE FUTURE

This brief overview reveals a number of key issues and trends:

- Road development is essential to serve the future economic growth of the region.
- The development of a hierarchical road system commencing with strategic “long distance” routes, and scaling down to urban networks is essential if sustainable development is to take place and environmental standards are to be maintained.
- The interaction between and impacts on each sub-region need to be understood and co-ordinated plans prepared.

- The policies on border crossings (vehicles and people) have a fundamental impact on infrastructure and management requirements and cannot be excluded from physical planning.
- Funding needs to be secured in a timely way for the road programme to keep up with economic growth. All sources of funds should be exploited. However, private sector involvement will be more sensitive to market conditions and make programming less certain.

Without doubt, plans need to be co-ordinated in the region to ensure a balanced road network is provided that meets future demands and supports wider planning, development, economic and environmental objectives of all communities.

The Role of Rail

Kevin HYDE

What is the role of railways in preparing Hong Kong for the 21st century? In order to explore this topic, it is necessary first to look at the broader picture of railways in China.

IMPORTANCE OF RAILWAYS TO CHINA

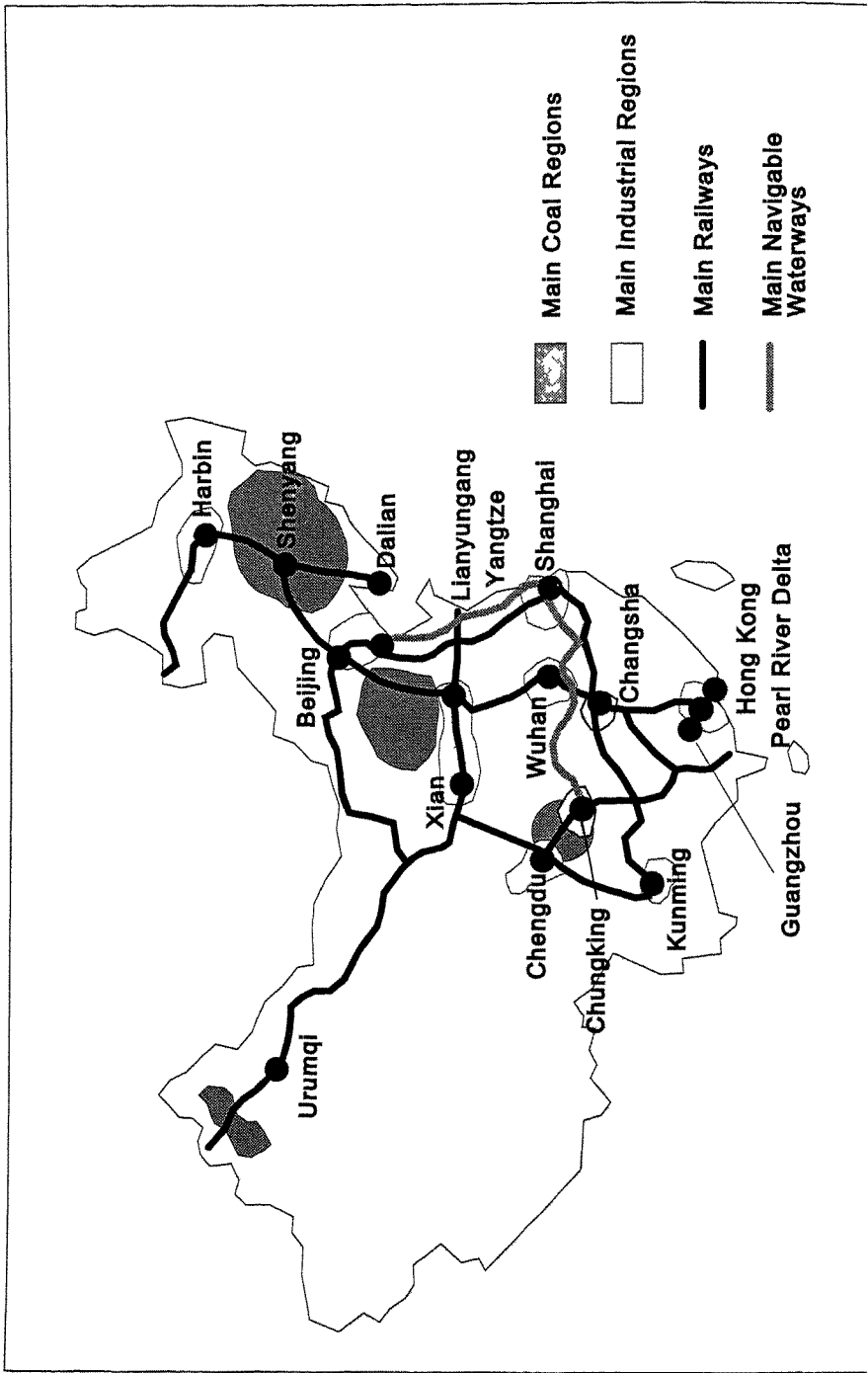
Rail is the backbone of the Chinese transportation system. Figure 15.1 shows the important rail linkages between raw material and industrial regions, which are important parts in China. Probably no other country relies more heavily on its railway system than China does. The rail network carries 53% of all passenger journeys and 70% of all freight movements. What that means in actual numbers for 1994 is:

- 1.08 billion passenger journeys; and
- 1.57 billion tons of freight

In the Eighth Five-Year Plan (1991-1995), China put railway development and construction on the second place of the strategically important list, only ranked lower than agriculture. It has been afforded this priority because, in the absence of a nation wide highway network, it is the only means of transport that can meet China's expanding needs. However, its present size means that it is having great difficulty in meeting the demand. That rail capacity is stretched, is reflected in the fact that Chinese railways are achieving the world's highest levels of asset utilisation, as illustrated in the following statistics:

- The 53,000-km-network has expanded 13% since 1977, while traffic has grown by 65%.
- Track utilisation¹ is three times higher than in the U.S., before considering passengers.
- Freight car utilisation is 97%.

Figure 15.1 Importance of Railways to China



- In addition to the currently high rail capacity, enormous growth is expected in the next few years because in the year 2000,
- passengers carried will move from just over 1 billion to 1.5 billion; and
- freight carried will move from 1.5 billion to 2 billion tons.

To put that in railway terminology, China's railway workload will, in the year 2000, be 2.5 trillion converted ton/kilometres (or 50 million tons will move over every kilometre of its 53,000-km-network each year = 135,000 tons over every kilometre every day). This projected capacity is a huge undertaking which can hardly be fulfilled without China's planned new investment in its railway network.

Massive Investment on Railways

As rail is the main focus of the Eighth Five-Year Plan (1991-1995), priority is being given to:

- relieving bottlenecks for key commodities such as coal.
- diverting much short distance freight from rail to road; and
- the opening of the second Beijing to Kowloon truck line in 1995.

With this new line from Beijing to Kowloon, the linkage between the Chinese railways and Hong Kong in the 21st Century emerges. However, in order to appreciate the importance of the new line, it is necessary to understand China's new commitment to intermodalism.

Strong Commitment to Intermodalism

Intermodalism is the movement of freight, by container on various modes of transport, under a single bill of lading and single accountability. For export traffic, *rail* will undertake the long land-based haul and hand over to shipping for the transport to the importing country. Late last year KCRC entered into China's first ever rail-based intermodal agreement, with the Ministry of Railways, to jointly undertake intermodal operations to and from the Hong Kong Port. It implies that China's railways must put emphases on:

- ISO containerisation of freight in central China (where newly emerging production takes place),
- improving yards by building 30 large and 300 medium/small size yards by the year of 2000, and
- improving the flatcars/locomotives needed to haul the freight to Hong Kong by adopting high technology.

These intermodal trains will also be given priority in the allocation of train paths to ensure high service levels and they will be priced to reflect this premium service.

It is evident, from the above discussion, that Hong Kong is crucial to China's rail strategy which mainly serves its critically important export sector. In short, the new Beijing to Kowloon line and the intermodal agreement with KCRC, reflects the importance China places on Hong Kong as its premier port, not just today but well into the 21st Century.

PEARL RIVER DELTA AND ITS TRANSPORT INFRASTRUCTURE

A few years ago, the Pearl River Delta had hardly any sort of transport infrastructure of regional significance (Figure 15.2). Today the picture is

Figure 15.2 Regional Transport Infrastructure in the Past

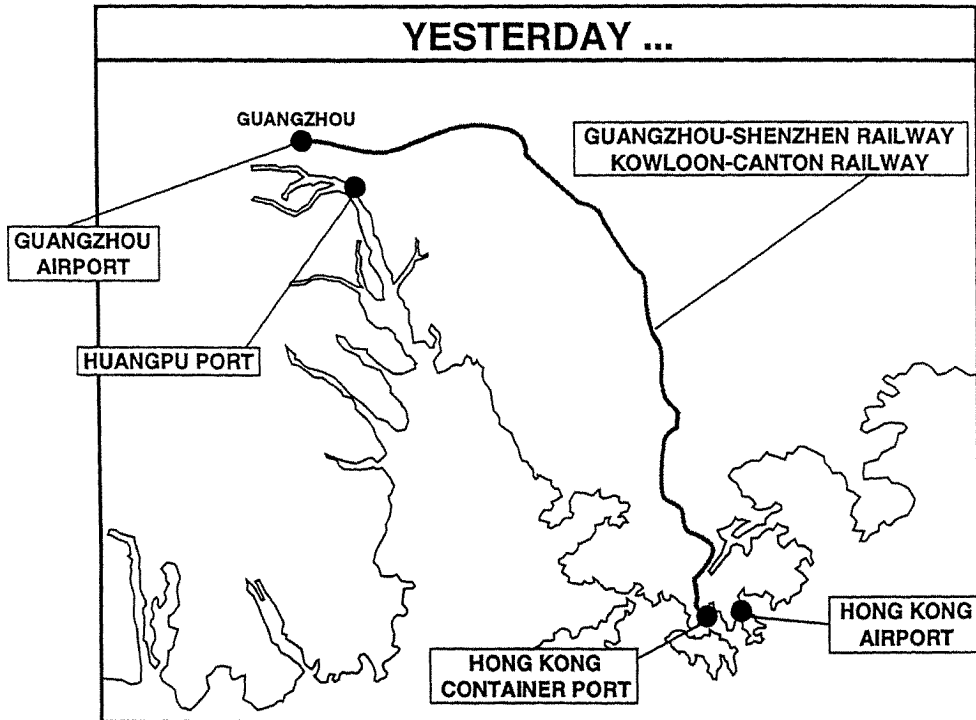
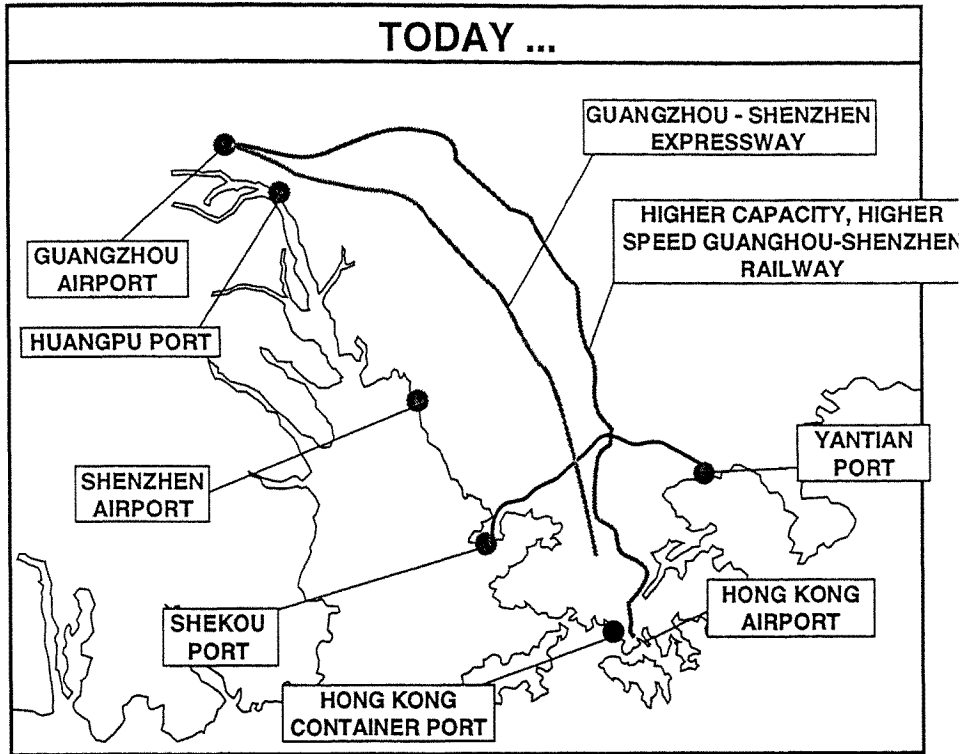


Figure 15.3 Regional Transport Infrastructure Today

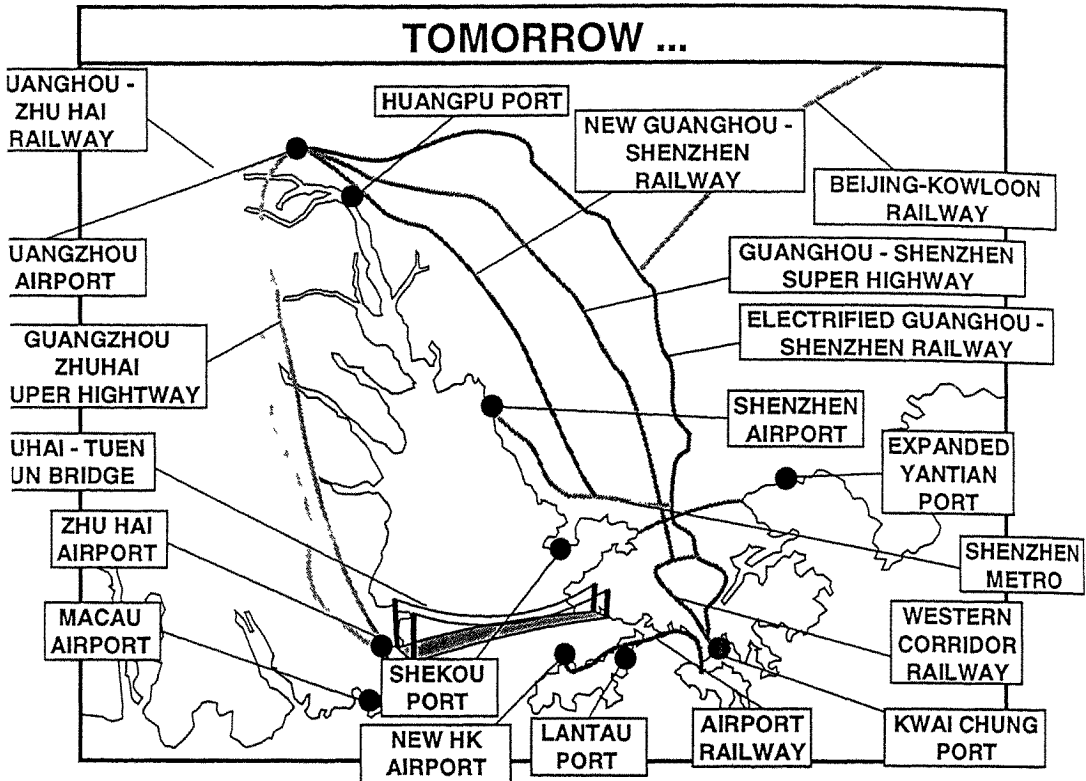


getting much more complex, with the emergence of the following facilities (Figure 15.3):

- Superhighway
- Shenzhen Airport
- ^ Upgraded Guangzhou airport
- Pingnam Railway to Shekou port
- Yantian Railway to Yantian port
- Higher capacity and higher speed Guangzhou-Shenzhen Railway
- (which was launched last month)

Moreover, one should never ignore all the other planned transport infrastructure for the region, much of which is already under construction (Figure 15.4). For instance,

Figure 15.4 Regional Transport Infrastructure in the Future



- Guangzhou-Zhuhai Railway
- Guangzhou-Zhuhai Superhighway
- Zhuhai-Tuen Mun Bridge
- Macau Airport
- Electrified Guangzhou-Shenzhen railway; and
- Beijing to Kowloon railway

Therefore Hong Kong, as it enters the 21st Century, has both a great opportunity and a great competitive challenge. The opportunity comes in the form of China's recognition of Hong Kong as at least one of its long-term premier ports. This is reflected in their massive investment in the Beijing to Kowloon railway and their commitment to priority intermodal operations to and from Hong Kong. The question is whether Hong Kong will be able to

grasp this opportunity in the face of others in the region laying claim to, at least, their share of central China's newly emerging export/import traffic.

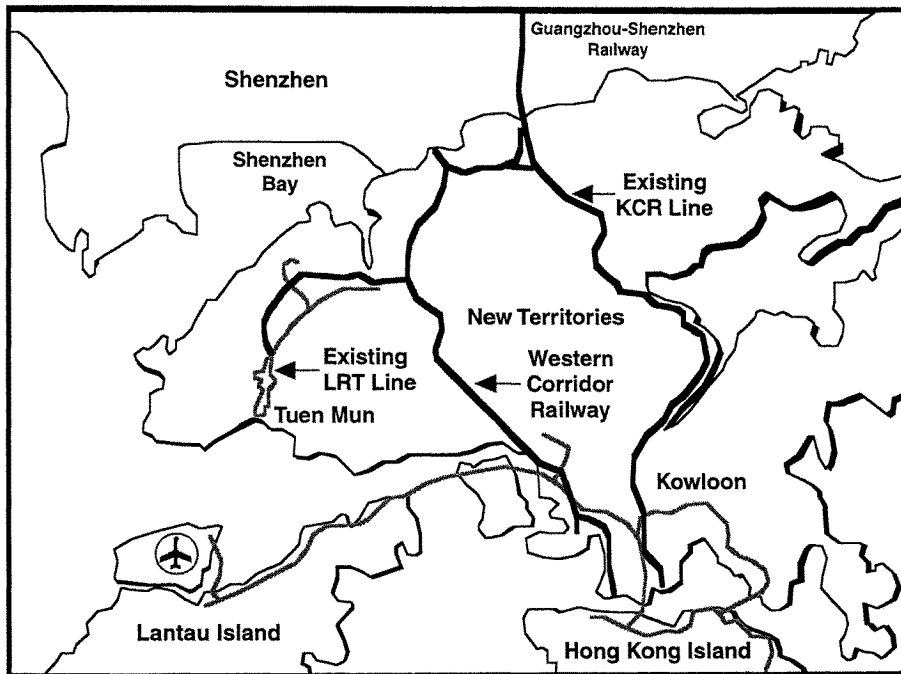
Western Corridor Railway

KCRC believes Hong Kong can meet the challenge and that an important part of the solution lies in a new railway, the Western Corridor Railway. This proposed new line will connect the mainland network directly to the port of Hong Kong both in its present location and its proposed terminals on Lantau (Figure 15.5). This railway has been given top priority by the Hong Kong Government and late last year KCRC was invited to submit a proposal for undertaking this task.

The economic benefits of the Western Corridor Railway includes:

- the enhancement of Hong Kong's role as Southern and Central China's premier port
- an additional cross-border rail link which relieves the heavy rail

Figure 15.5 Western Corridor Railway



capacity of Lo Wu as it is expected to reach its capacity limit by the end of this century

- the rail link between the towns in the Northwest New Territories (NWNT) and the urban areas which helps to overcome the sense of isolation in the Northwest and provide a fast link to the city.
- a maximum flexibility for all travellers by linking together all the existing rail networks in Hong Kong.

In undertaking the Western Corridor Railway project, we recognise that we are, in effect, planning for the 21st century because construction will not be completed before the year 2000. We are, therefore, being careful to ensure that we accommodate as many of Hong Kong's needs as possible in this planned new infrastructure.

Notes:

1. Track utilisation = Freight ton-miles/ route-miles

Hong Kong's Port in the Pearl River Delta Region

Benjamin P. WONG

Everyone knows that Hong Kong is a natural deep water port, that it is the largest container port in the world which handled 11.1 million TEUs in 1994, that it is located at the entry of the Pearl River Delta which is the manufacturing region rated with the highest economic growth in the world in recent years. Its natural deep water and unique geographical position no doubt contribute to the success of the Hong Kong port, and is well publicised. However, much less is said about the key factor which contributed to the port of Hong Kong rising above all other ports in the nearby area, which is the people and the system as described by Vice Premier in charge of trade and economic development in the State Council, Li Lan Qing, in discussion last month with the Guangdong delegates attending the Eighth National People's Congress on the development of special economic zones. Li referred this human element and system factor as "software" relative to the "hardware" of port facilities. It is the industrious, enterprising, managerial-orientated and profit-motivated people of Hong Kong and the wide-ranging all-comprehensive banking and financial system of trade facilitation and project fund raising, plus global information and communication network and the infinitely larger shipping frequency to all parts of the world that make Hong Kong port excel in this region. Frequency of sailings creates opportunities and convenience, and simple export documentation and customs inspection procedure with minimum Government interference are strong incentives to persuade shippers and consignees of cargo to disregard Hong Kong's higher port and cargo handling charges.

With regards to frequency of sailings, the difference between Hong Kong and other PRD cities is big. Instead of hundreds or thousands of ship calls per year in ports such as Yantian and Shekou, the number of ships entered and cleared the port of Hong Kong totalled 375,500 in 1994, representing a 13.4% increase over 331,005 in 1993. The number of ocean-going ship calls

was 74,000 in 1994, representing a 10.8% increase over 66,778 in 1993; but it is in the number of river trade cargo ships that recorded the highest growth, namely, 177,500 in 1994, representing a 16.4% increase over 152,546 in 1993. The number of river trade ferries which included Macau ferries, the latter accounting for 67% of the total, also went up to 124,000 in 1994, representing an increase of 11% over 111,681 in 1993 (Table 16.1). This exceptionally high frequency of calls of both ocean-going and river trade ship provides unlimited transshipment and forwarding opportunities to all parts of the world. Shippers are not in the least worried if cargo production or cargo arrival suffers delays and misses designated sailings because alternate shipping opportunity is available same day or just the next, and no lengthy waiting is required.

Shenzhen ports are well located too: Yantian has natural deep water but small manufacturing hinterland. Huang Pu of Guangzhou has big hinterland and good source of cargo but there is a limitation for very large vessels due to the water depth; Shekou has the advantage of being in close proximity of industrial centres of the Pearl River Delta region, but at present very large vessels entering the port of Shekou should be via the Ma Wan channel of Hong Kong; and Chiwan and Ma Wan enjoy similar advantages, yet the

Table 16.1 Port of Hong Kong – Number of Ship Calls

	1993	1994	Growth Rate (%)
Ocean-onging ship entered (in)	33,042	36,700	
cleared (out)	33,736	37,300	
Total:	66,778	74,000	10.8
River trade cargo ships entered (in)	76,661	89,000	
cleared (out)	75,885	88,500	
Total:	152,546	177,500	16.4
River trade ferries entered (in)	55,837	*62,000	
cleared (out)	55,844	*62,000	
Total:	111,681	124,000	11.0
Total number of ships entered and cleared	331,005#	375,500	13.4

* Macau ferries accounted for 41,500 calls in each direction

Growth rate of 1993 over 1992 was 10.8%

Source: Hong Kong Government Marine Department Statistics

volume of cargo throughput of all these Guangdong ports has not reached the volume of what Hong Kong is handling. The infrastructure to generate cargo and the software facilitating cargo to be channelled through these ports will take time to develop, and human factors, above all, are responsible for the success or failure of these ports.

As I mentioned, the people of Hong Kong are driven by profit incentives. They are born and educated in a community of business environment, they are good managers, brought up to respect efficiency, and they dedicate their lives to business achievement which enables Hong Kong to have such high economic growth rate, in turn high cargo growth. Hong Kong is relatively free of bureaucracy. There are far less number of authorities whose approval is required to facilitate cargo movement. Hong Kong is surrounded by close to 60 ports in the Pearl River Delta served by over 40 shipping companies; cargo from these river ports are channelled by both regular or unscheduled feeder services to Hong Kong (Tables 16.2 and 16.3).

Hundreds of sailings a day covering all important trade routes, make Hong Kong the natural hub port to service the vast hinterland of South China, be it inflows of raw materials or export/transshipment of manufactured goods. Hong Kong benefits from the shallow draft of river ports in the region which restricted direct calls of ocean-going vessels. As facilities in these river ports improve and grow in sophistication, the advantage of lower land cost and lower labour cost will increase containerisation, boxes will be stuffed in the ports of origin instead of in Hong Kong, which in turn leads to

Table 16.2 List of Ports in the Pearl River Delta

Ports	Frequency
Aotou	1 sailing per week
Chiwan	unscheduled service
Daya Bay	unscheduled service
Domen	every 2 days
Dongguan	daily service
Feng Huo Jiao	daily service
Foshan	daily service
Guangzhou	daily service
Heshan	daily service
Huangpu	daily service
Huizhou	unscheduled service
Jia Zi	daily service
Jiang Men	daily service

Ports	Frequency
Jiao Kou	3 sailings per week
Jie Yang	weekly service
Jing An	2 sailings per week
Ko Ming	3 sailings per week
Lanshi	daily service
Lian Hua Shan	daily service
Nanhai	daily service
Ping Hai	unscheduled service
Pu Ning	unscheduled service
Qing Yuan	unscheduled service
Rong Qi	daily service
Sambeimen	weekly service
San Bu	daily service
Shan Shui	daily service
Shan Wei	weekly service
Shantou	weekly service
Shek Ki	daily service
Shekou	unscheduled service
Shenzhen	unscheduled service
Shi Qiao	unscheduled service
Shui Dong	1-2 sailings per week
Shui Kou	unscheduled service
Xiao Lan	daily service
Xinhui	daily service
Xintang	unscheduled service
Yangjiang	3 sailings per week
Yantian	unscheduled service
Zhanjiang	1-2 sailings per week
Zhaoqing	3 sailings per week
Zhongshan	daily service
Zhuhai	daily service
Beijiao	daily service
Huadu	daily service
Jiujiang	1 sailing per week
Jiaokou	1 sailing per week
Beichun	daily service
Xinan	daily service
Huilai	unscheduled service
Gongyi	unscheduled service
Enping	unscheduled service
Macau	unscheduled service
Shajiao	unscheduled service
Gaoyao	unscheduled service
Yingde	unscheduled service

Source: Chu Kong Shipping Co Ltd

Table 16.3 List of Shipping Operators in the Pearl River Delta

1. East Spark	25. Goodie Shipping
2. Chu Kong T & T Co Ltd	26. Wing Tai Shipping Ltd
3. Wangfoong	27. Dragon Ray
4. Man Shun	28. Rich Sky
5. Eternal Way	29. F.E. Enterprising
6. Wing Lee	30. South Star
7. Top Wealth	31. Up Sail Ltd
8. Sui Kong	32. Vincent
9. World-Track	33. Widely
10. Sinoway	34. Wai Bert Steamship Co Ltd
11. Newcorp Shipping Ltd	35. Wah Hoi
12. Sea Express	36. Exportrans
13. Chu Kong Transportation HK Ltd	37. Silver Crown
14. Guangdong Transport	38. Vane Sail
15. Vane Sail	39. Haitone Maritime
16. Y.S. Container	40. Zhuhai Int'l Maritime Transport
17. Yong Long	41. Zhu Sheng
18. Rich Glory	42. SLT
19. Shui Nam Navigation	43. Shen Zhin
20. Jiang Tong Wharf Co	
21. Maxwell	<i>New Sailings</i>
22. Liuzhou HK & Macau	1. Nan Sha
23. Danfast Shipping Ltd	2. Yun Fu
24. Eastern Harbour	3. En Ping

Source: Chu Kong Shipping Co. Ltd.

increase in transshipment versus re-export cargo passing through Hong Kong. Indeed, the volume of re-export and transshipment cargo from China now already accounts for 66-70% of Hong Kong's export (Table 16.4).

Hong Kong is the major beneficiary of China's economic reform, modernisation and open door policy. Cargo growth from the Pearl River Delta region has averaged well over 30% per year for the last ten years, and the increase in 1994 was 45% over 1993. However, recently there are signs of slowing down, particularly in the first three months of 1995, although it is too early to predict whether this is the new pace or a new trend. This

Table 16.4 Number of Containers in 1994 from Major Ports in the Pearl River Delta to Hong Kong (rough estimates)

	TEUs ('000)
Zhuhai	220
Zhongshan	160
Huangpu (Guangzhou)	180
Jiang Men	70
Heshan	50
Shunde	50
Lian Hua Shan (Pan Yu)	50
Dongguan*	10

* Majority of Cargo from this industrial town is moved by road.\

underlines the importance of understanding the trade, predicting and preparing for new development and the need of statistics for planning. The River Trade Committee of the Port Development Board of Hong Kong consider cargo from the Pearl River Delta to be the most important component determining Hong Kong's future cargo growth, hence we are delighted that the Hong Kong Government has finally accepted Port Development Board's recommendation to allocate funds to compile statistics on cargo movement from this region, and has now commissioned a professional consulting agency to produce statistics and analyse cargo movements. The first preliminary report covering the period of the first quarter of 1994 is completed and released to interested parties. Full report based on a systematic 7% sample of 82,500 consignments covering the whole year of 1994 cargo movement is expected to be available in May 1995. A few tables of cargo statistics from this source are attached for your digestion (Tables 16.5, 16.6 and 16.7). These tables reveal that we have in 1994, 30 million tons of cargo from and to ports in the Pearl River Delta region. Excluding dry bulk cargoes such as stone, sand, gravel, and liquid cargoes such as chemicals, fuel, lubricants etc., the total cargo to Hong Kong was 5.7 million tons inward and 10.4 million tons outward, of which 7.5 million tons or 46% was containerised. At a compound growth of over 30% per annum, cargo from this region is the most important source and has the biggest potential impact on the Hong Kong port.

As shown in our estimate of the volume of future River Trade cargo in

Table 16.8, even adopting a conservative 25% growth rate, the total tonnage in year 2000 will reach 114 million tons, increasing significantly the component percentage of River Trade cargo in total cargo throughput of Hong Kong at, say, an annual rate of 6.7%, as adopted by Port Development Board's Strategy Review.

The flow of cargo from this region can be examined from a different angle, namely, movement by road. Statistics show that there are now well over 20,000 vehicles crossing the Shenzhen border every day. The number has reached the saturation point. To ease traffic queue-up, border check-points among which two kiosks at Lok Ma Chau are now operating 24 hours. In spite of efforts such as this and special emergency traffic control arrangement, congestion on Hong Kong roads, mainly caused by these goods vehicles, has reached a crisis level of total breakdown particularly after major holiday periods or unusual inclement weather such as last few heavy rainfalls. New roads such as Route 3 will help. A new border crossing point is being discussed by the Pearl River Delta Planning and Co-ordination Committee and the Sino-British Major Infrastructure Planning and Co-ordination for Hong Kong and Mainland Committee met last month to discuss a new link from Zhuhai by Lingdingyang Bridge to Tuen Mun Mui Fui Wu north of Lan Kok Tsui. These developments are in the right direction, but these big infrastructure projects costing billions of dollars will not make new road facilities available until year 2000, hence it is back to river traffic and movement of cargo by barges that has repeatedly proved by history and in different parts of the world as the most efficient and cheapest means of transporting cargo. Just as the River Rhine serves to bring cargo from the heartland of Europe to ports such as Rotterdam, the Pearl River will provide the same service to bring cargo from the manufacturing centres in the Delta region to Hong Kong.

Rail is a possibility, particularly for cargo originating from the interior of China. Container stack trains will come, but not until the rail network in China is geared up to handle the large volume of cargo, and completion of the Northwest Port Passenger Rail Line to Kwai Chung in Hong Kong to provide adequate rail yard facilities to receive cargo for shipment.

What future problems do Hong Kong port face? The first and most obvious one is that we are located in a high cost area, suffering from high inflation and high cost of land reclamation, resulting in high port tariff, hence we are vulnerable to competition – not so much from Singapore which is also an important transshipment centre but handles different categories of cargo and which is too far away to be reached by barges from the Pearl River Delta. We have also not yet felt encroachment from Kaohsiung, which is

Table 16.5 Estimated *River Trade Cargo (Tonnes) Analysed by Commodity Group for 1994

Commodity Group	Type of Shipment						Total
	Inward Direct Shipment	Inward Transhipment	Inward Shipment	Outward Direct Shipment	Outward Transhipment	Outward Shipment	
Food and live animals chiefly for food	472,070	253,195	725,265	178,616	180,061	358,677	1,083,942
	3.6%	9.4%	4.6%	1.9%	3.6%	2.5%	3.6%
Beverages and tobacco	38,455	24,165	62,620	76,399	13,907	90,306	152,926
	0.3%	0.9%	0.4%	0.8%	0.3%	0.6%	0.5%
Crude materials (except fuels)	9,887,928	262,120	10,150,048	834,052	479,793	1,313,845	11,463,893
	76.1%	9.7%	64.7%	9.0%	9.5%	9.2%	38.3%
Mineral fuels, lubricants and related materials	195,762	54,834	250,596	2,829,386	154,547	2,993,934	3,244,529
	1.5%	2.0%	1.6%	30.8%	3.1%	21.0%	10.8%
Animal and vegetable oils, fats and waxes	134,187	19,499	153,686	71,711	20,815	92,526	246,211
	1.0%	0.7%	1.0%	0.8%	0.4%	0.6%	0.8%
Chemicals and related products	382,786	635,224	1,017,959	653,998	753,902	1,407,899	2,425,859
	2.9%	23.5%	6.5%	7.1%	14.9%	9.9%	8.1%
Manufactured goods classified chiefly by materials	1,182,373	675,669	1,858,042	3,910,650	2,912,177	6,822,827	8,680,868
	9.1%	25.0%	11.8%	42.4%	57.7%	47.8%	29.0%
Machinery and transport equipment	278,025	272,360	550,386	564,090	383,270	947,360	1,497,745
	2.1%	10.1%	3.5%	6.1%	7.6%	6.6%	5.0%
Miscellaneous manufactured articles	416,815	504,848	921,663	95,834	151,353	247,188	1,168,851
	3.2%	18.7%	5.9%	1.0%	3.0%	1.7%	3.9%
Commodities not classified elsewhere	469	3,352	3,821	604	171	775	4,595
	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	12,988,819	2,705,266	15,694,085	9,225,340	5,049,995	14,275,335	29,969,420
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source Study on River trade Cargo Handling Activities, Hong Kong Port Development Board (1994)

Note * Preliminary estimates based on provisional statistics for the first nine months of 1994. All the figures are subject to revision up to completion of the whole exercise in May 1995.

exercise in May 1995

Table 16.6 Estimated *River Trade Cargo (Tonnes) Analysed by Cargo Type for 1994

Cargo type	Inward Direct Shipment	Inward Transhipment	Inward Shipment	Outward Direct Shipment	Outward Transhipment	Outward Shipment	Total
Containerised	968,375	2,444,586	3,412,961	1,604,041	2,438,522	4,042,563	7,455,524
Break bulk	2,068,259	182,938	2,251,197	4,546,863	1,843,229	6,390,093	8,641,289
Dry bulk	9,738,333	27,383	9,765,717	254,254	605,180	859,434	10,625,151
Liquid bulk	213,852	50,358	264,210	2,820,182	163,064	2,983,246	3,247,456
Total	12,988,819	2,705,266	15,694,085	9,225,340	5,049,995	14,275,335	29,969,420
	7.5%	90.4%	21.7%	17.4%	48.3%	28.3%	24.9%
	15.9%	6.8%	14.3%	49.3%	36.5%	44.8%	28.8%
	75.0%	1.0%	62.2%	2.8%	12.0%	6.0%	35.5%
	1.6%	1.9%	1.7%	30.6%	3.2%	20.9%	10.8%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source Study on River trade Cargo Handling Activities, Hong Kong Port Development Board (1994)

Note *Preliminary estimates based on provisional statistics for the first nine months of 1994. All the figures are subject to revision up to completion of the whole exercise in May 1995.

Table 16.7 Estimated *River Trade Cargo (Tonnes) Analysed by Place of Loading/Discharge for 1994

Place of Loading/Discharge	Type of Shipment								Total					
	Inward Direct Shipment	Inward Transshipment	Inward Shipment	Outward Direct Shipment	Outward Transshipment	Outward Shipment	Total							
Dongguan	589,701	4.5%	3,555	0.1%	593,256	3.8%	581,638	6.3%	33,510	0.7%	615,147	4.3%	1,208,403	4.0%
Foshan	247,996	1.9%	105,483	3.9%	353,479	2.3%	383,466	4.2%	255,039	5.1%	638,506	4.5%	991,985	3.3%
Guangzhou	806,095	6.2%	1,553,776	57.4%	2,359,871	15.0%	971,743	10.5%	1,395,217	27.6%	2,366,961	16.6%	4,726,831	15.8%
Guizhou	1,495	0.0%	397	0.0%	1,891	0.0%	23,362	0.3%	28,850	0.6%	52,213	0.4%	54,104	0.2%
Jiangmen/Xinhui	498,575	3.8%	100,351	3.7%	598,926	3.8%	544,055	5.9%	164,295	3.3%	708,350	5.0%	1,307,276	4.4%
Nanhai	155,118	1.2%	14,427	0.5%	169,545	1.1%	204,719	2.2%	32,490	0.6%	237,209	1.7%	406,754	1.4%
Panyu	153,070	1.2%	14,234	0.5%	167,304	1.1%	485,217	5.3%	140,755	2.8%	625,972	4.4%	793,276	2.6%
Shenzhen-Shekou	281,282	2.2%	270,157	10.0%	551,439	3.5%	712,325	7.7%	289,014	5.7%	1,001,339	7.0%	1,552,778	5.2%
Shenzhen-Yantian	708,862	5.5%	1,480	0.1%	710,343	4.5%	34,810	0.4%	6,757	0.1%	41,568	0.3%	751,910	2.5%
Shenzhen-Others	418,823	3.2%	109,445	4.0%	528,268	3.4%	259,980	2.8%	845,400	16.7%	1,105,380	7.7%	1,633,647	5.5%
Shunde	230,853	1.8%	29,314	1.1%	260,167	1.7%	513,995	5.6%	96,211	1.9%	610,206	4.3%	870,374	2.9%
Zhaoqing/Yuntu	128,143	1.0%	14,045	0.5%	142,188	0.9%	63,041	0.7%	35,861	0.7%	98,902	0.7%	241,089	0.8%
Zhongshan	361,891	2.8%	103,501	3.8%	465,392	3.0%	626,480	6.8%	223,475	4.4%	849,954	6.0%	1,315,346	4.4%
Zhuhai (within river trade limits)	7,858,954	60.5%	139,261	5.1%	7,998,214	51.0%	912,047	9.9%	518,023	10.3%	1,430,070	10.0%	9,428,285	31.5%
Guangxi	326,055	2.5%	79,058	2.9%	405,113	2.6%	2,066,959	22.4%	84,522	1.7%	2,151,481	15.1%	2,556,594	8.5%
Macao	216,203	1.7%	144,728	5.3%	360,931	2.3%	820,071	8.9%	853,108	16.9%	1,673,179	11.7%	2,034,110	6.8%
Other river ports	5,704	0.0%	22,055	0.8%	27,759	0.2%	21,430	0.2%	47,468	0.9%	68,899	0.5%	96,658	0.3%
Total	12,988,819	100.0%	2,705,266	100.0%	15,694,085	100.0%	9,225,340	100.0%	5,049,995	100.0%	14,275,335	100.0%	29,969,420	100.0%

Source: Study on River trade Cargo Handling Activities, Hong Kong Port Development Board (1994)

Note: * Preliminary estimates based on provisional statistics for the first nine months of 1994. All the figures are subject to revision up to completion of the whole exercise in May 1995.

Table 16.8 Estimated River Trade Cargo Throughput in Future Years

Year	Throughput Volume (million tons)
1995	37.46
1996	46.83
1997	58.53
1998	73.17
1999	91.46
2000	114.32

(Although 1994 throughput of 30 million tons represented an increase of 36% over 1993, the above estimate was based on a conservative annual growth rate of 25%.)

prevented by political factors from catering to direct traffic between Mainland China and Taiwan of China, but which will eventually come when cross-strait direct shipment is permitted. This will take away from Hong Kong some China transshipment cargo, but the majority will not be from the Pearl River Delta Region, more likely from the economic zones of the coastal region of Fujian.

The next and potential competition will come from Shenzhen ports across the border as Shekou, Yantian, Chiwan, Ma Wan and Gaolan develop. These ports already got good infrastructure and they will capture at least a portion of the cargo when simplified export and customs procedures start to materialise. In this respect, the Reform Committee reporting to the State Council and the initiative of the Shenzhen Party Secretary, Li You Wei, Zhuhai Party Secretary, Liang Guang Da and Shantou Party Secretary, Wu Bo, together with Guangdong Governor, Zhu Sen-lin, seeking permission from the State Council to reform procedures, to introduce a unified single charge for customs clearance and to simplify frontier cargo inspection to raise working efficiencies and its qualities, are worthy developments which will help the Shenzhen ports to develop and to compete. Once these are achieved, cost consideration will channel at least some of the Hong Kong traffic to these ports, and many more ocean-going ships will call. However, I have said and I continue to hold the view that we need not be alarmed by the development of ports across the border; they complement rather than compete with the current excellent facilities of Hong Kong. Maturity of ports in nearby areas will only develop the region into a complex of

complementary ports. Better distribution of cargo and higher utilisation of facilities of all ports together will stimulate growth even more. We must not be short-sighted. We must take a long-term view of the inter-dependent relationship of ports in the region. Efforts by our neighbours is an excellent stimulus spurring on Hong Kong port operators to continue to improve efficiency, and we shall all benefit from the development.

Hong Kong's Airport in the Pearl River Delta

J.C. Seale

INTRODUCTION

The new airport at Chek Lap Kok is beneficial to Hong Kong since airport service is always in great demand. It is so badly needed that every citizen in the Territory is expecting its completion as soon as possible. The new airport will be a quantum leap from Kai Tak International Airport for:

- the customers
- the airport community
- operationally, and
- the people living around Kai Tak.

Moreover, it is something that Hong Kong can be proud of, especially when compared to Singapore, Bangkok and Amsterdam.

THE COMMERCIAL USERS

Let us assume that the opening day has arrived and everything functions normally:

- Baggage systems work (unlike Denver)
- People movers work
- Immigration systems work

A passenger, Mr. Chan, has just arrived from Toronto. How will he get to Central?

A) By express train

- Will the airport express train line be operating on the opening day?
- How much will it cost – HK\$60?
- Will it operate 24 hours a day – like the airport?

B) By taxis (No doubt taxis will be available on a 24-hour basis)

- How much?
- Highway and bridge tolls?

C) By buses

- How much?
- Where to?
- 24 hours a day?

D) By ferries

- Will there be any? (As Chek Lap Kok is an island, the answer should be positive.)
- Ferry terminal? Where is it?
- Not just to Central and Tsimshatsui but also to other points in Hong Kong, such as the Gold Coast, Tuen Mun, North Point, Kowloon Bay, and the south side of Lantau Island
- Just as important is the hi-speed ferries to Macau, Zhuhai, Guangzhou and other points in the Pearl River Delta.

In my opinion, sea transportation is an integral key to make Chek Lap Kok the absolutely preferred point as the gateway to, not just the Pearl River Delta, but also China as a whole. At present, there are direct air links to approximately 40 points in China. No doubt direct flights to China will increase as the capacity of the new airport is much larger than the old one. However, sea transportation to the Pearl River Delta can still increase the attractiveness of Chek Lap Kok as the gateway to China.

THE AIRPORT STAFF

My previous remarks have been addressing the commercial users of Chek Lap Kok. What about our people who work there or fly out of there? At present, with few exceptions, they live on Hong Kong Island and Kowloon. How will they get to work especially in the case of our 6.5 thousand crew who travel with their luggage? Likewise what about the staff of other airline companies and the Government/Provisional Airport Authority (PAA) staff? It is estimated that about 30,000 to 50,000 people will be commuting daily to Chek Lap Kok. There are serious concerns as to how we will manage our respective businesses.

CARGO

Furthermore, it is not only people using the new airport. How will the cargo get to and from Chek Lap Kok? Surely not only on trucks and other aircraft. There must be an answer on the water. An enormous amount of cargo now comes from China to connect to the world and vice versa. Once again there is the overall cost of getting freight to and from an island by road. I think the *sea* must provide an interesting viable alternative.

OTHER INFRASTRUCTURAL PROBLEMS

Hotels

Let us continue with our case study. Will Mr. Chan find a 3-star hotel? Or will Hong Kong become like Tokyo/Taipei to provide business hotels only? They must be available at very high rates! Will there be enough hotels in general as some of them are being demolished? Is Gold Coast or Tuen Mun, which can be linked by ferries, a desirable location for hotel accommodation? If these locations are appropriate, should there be further linkages, besides ferries, such as a bridge, causeway or tunnel?

Office space

There is a shortage of office space on Chek Lap Kok. Tung Chung new town will only come on stream in 1999 and with a limited amount of office space initially. Can something be done along the Gold Coast? In my opinion, a ferry service is badly needed.

CONTINGENCY PLANNING

Contingency planning means having plans for nasty eventualities. Examples of contingencies are:

- 1) Flight disruptions on a major scale by situations such as bad weather or aircraft immobilised on runway. How to care and disperse passengers and freight?
- 2) Natural and man-inspired disasters affecting rail-links or bridge connections between Chek Lap Kok and Lantau or the main urban area.

THE ENVIRONMENT

The PAA/Environmental Protection Department and the various companies working on the airport are actively putting in many “green” safeguards and innovative systems to control waste emissions and energy conservation. These cost but eventually will save resources. PAA plans for the “greening” of Chek Lap Kok with trees/shrubs/lawns are being actively supported by Cathay Pacific Airways and our associated companies. Ultimately,

- consumers will not buy from
- people will not work for
- new people will not join, and
- communities will not embrace
- business that do not take their commitment to the environment seriously.

THE FINANCIAL CONCERN

The Chek Lap Kok airport will be among the finest in the world but, to be among the finest, it does not have to be among the most expensive. There is competition for all the services to be provided to the airlines and indeed for passengers. It should be borne in mind by PAA that airlines are concerned about the cost of operating at Chek Lap Kok. In today’s “cut-throat” airline world, options offered by other Pearl River Delta airports will figure prominently in any finance director’s thinking.

CONCLUSION

Chek Lap Kok will certainly be a great airport. However, planners must plan well ahead to handle the concerns and to alleviate the potential problems that have been raised in the above discussion.

Planning Strategy for Supplying Electricity to Hong Kong for the 21st Century

W.N. AU

INTRODUCTION

China Light & Power has served Hong Kong for over 90 years and is supplying the power needs of Kowloon and the New Territories. Unlike many other places in the world where the newspaper headlines complain of recession, Hong Kong enjoys continuing high levels of economic growth. There is clearly a correlation between the growth of our economy and the demand for electricity. China Light & Power is planning and developing its supply system to make sure that the economic growth and the way of life in Hong Kong are not hindered by lack of electricity.

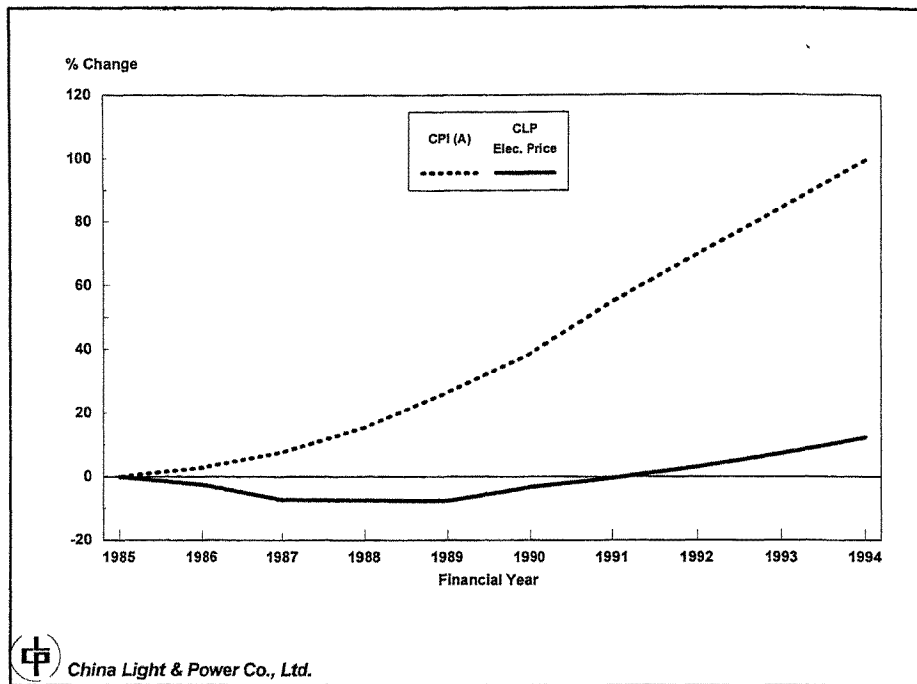
This paper reviews China Light & Power's planning strategy for supplying electricity to Hong Kong and the system development plan for the next century.

BALANCE OF INTERESTS

A reliable and reasonably priced supply of electricity has been fundamental in helping Hong Kong to adapt to economic change, and to play a part in one of the world's most exciting economic revolutions: the opening of China to the outside world since 1978. Hong Kong has entrusted the responsibility of providing adequate power supply to the private sector, that is China Light & Power and Hongkong Electric. Striking the right balance between the interests of company shareholders and those of customers is not easy but the experience in Hong Kong shows that the right balance can be struck.

Power companies need to get a reasonable return on their investment, and they have accepted the obligations and the responsibility of maintaining an efficient electricity supply at a reasonable cost. On the other hand, customers want electricity at a price that they can afford. It is quite evident

Figure 18.1 Consumer Price Index vs Electricity Price



that both the power companies and the customers have got what they want. In fact, thanks to a wise decision to use coal instead of oil at Castle Peak Power Station in the late 1970s, the electricity bills of China Light & Power's customers have gone down by over 40 percent in real terms over the last ten years (Figure 18.1).

PLANNING CONSIDERATIONS

In preparing the system development plan, the following factors have to be duly taken into consideration.

Environmental Acceptability

In line with the development in other developed countries, Hong Kong is becoming more concerned with environmental protection and has developed its own standards and legislation, such as the definition of air quality objectives and water control zones. The environmental effects associated

with electricity production have to be addressed during the planning stage to ensure compliance with standards set by the Government.

Economics

It is China Light & Power's primary objective to provide reliable supply of electricity to customers at the lowest possible cost. As various generation technologies and fuel types will result in different capital and operating costs, their economics are assessed by comparing their total present worth costs to customers over their respective plant lives.

System Reliability

System reliability is a major concern in formulating the system development plan. In general, the greater the reserve capacity, the more reliable will be the supply. However, higher reserve margins require a more capital investment which increases the cost of electricity. It is necessary to strike a balance between reserve capacity and the cost of electricity in formulating the system development plan.

Energy Conservation

Energy conservation is important not only to preserve resources for future generations but also to reduce the adverse environmental effects caused by energy production and consumption such as greenhouse effect and acid rain. In electricity generation, energy conservation can be effected by the use of generating plant of high thermal efficiency. Continuous review of advanced technologies, their commercial reliability and applicability in Hong Kong is an integral part of the planning process.

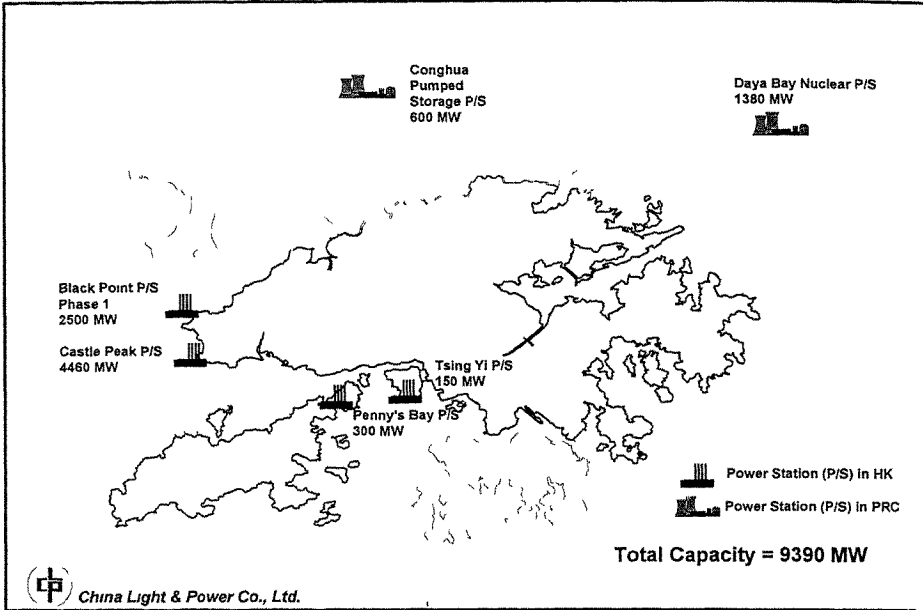
Fuel Diversification

In formulating the system development plan, attention is also given to the diversification of fuel. Fuel diversification will protect customers from fuel price fluctuations and shortages. The long-term availability and price of the fuel are carefully considered as Hong Kong has no indigenous energy resources.

GENERATION DEVELOPMENTS

China Light & Power has completed three major power projects over the past three years – a gas turbine power station at Penny's Bay on Lantau Island, a joint venture nuclear power station at Daya Bay in Guangdong Province, and

Figure 18.2 China Light & Power's Generating Capacity by 2001



a hydro-electric pumped storage scheme at Conghua, also in Guangdong Province (Figure 18.2). Sufficient generating capacity is therefore available to meet demand until the mid-1990s.

However, based on current demand projection, China Light & Power needs to start phased commissioning of a new power station from 1996 onwards to ensure a reliable supply of electricity. This new power station is being built at Black Point in the Western New Territories. Its first phase will comprise eight 312MW generating units, to be completed by 2001. This power station will play a major part in meeting Hong Kong's increasing power needs over the remainder of this decade and well into the next century.

In today's world there is a good deal more to electricity generation than producing accurate forecasts of demand and building the generating capacity to meet that demand. There are new and important imperatives: to use cleaner technology, to conserve energy, to diversify fuel sources, and last but not least, to be more accountable to the public. The Government has set demanding objectives for air quality. China Light & Power has responded by using the best practical means to meet these objectives. Emission of nitrogen oxides and sulphur dioxide gases and particulates from power

stations have been reduced, and environmental impact assessments are carried out for all new plants.

USE OF NATURAL GAS

Besides finding suitable sites for power stations in Hong Kong where various developments and infrastructural projects are competing for the use of the limited land resources, choosing the most appropriate fuel has always been a challenging task for China Light & Power. The search for a right fuel requires both long-term planning and commitment. In making a choice for fuel, various factors come into play – social, economic, environmental, technological, long-term availability and ultimate cost to customers.

Based on its concern for the environment, China Light & Power initially studied the feasibility of using liquefied natural gas. However, heavy capital and operating costs required for the processing of the liquefied fuel made this option impracticable at present.

With the discovery of a large natural gas field in the South China Sea off Hainan Island and the securing of a 20-year gas supply contract, the choice of natural gas has once again become a viable proposition. The natural gas will be supplied via an 800-kilometre submarine pipeline to Black Point Power Station starting from 1996, when the first two 312MW generating units enter into service (Figure 18.3).

For China Light & Power, the use of natural gas marks an environmental and economic milestone that will provide Hong Kong with a cleaner and more economical mode of electricity generation to fuel it into a greener 21st century. This means that by the latter half of this decade, the electricity in Hong Kong will be generated from coal, oil, natural gas, nuclear, and hydro-electric sources. China Light & Power is also exploring the possibility of generating electricity from landfill gas produced from the three large strategic landfills being developed in the New Territories (Figure 18.4). The use of such diversified fuel sources is quite remarkable for a territory of only 1,000 square kilometres with no energy resources of its own.

FACTS ABOUT NATURAL GAS

A) Natural Gas is Environmentally Friendly and Cost-Effective

- Natural gas contains minimal amounts of sulphur and produces no solid waste products when it is burnt.
- It also produces 50 percent less carbon dioxide than coal, substantially reducing the emission of greenhouse gas.

Figure 18.3 Natural Gas Supply to Hong Kong

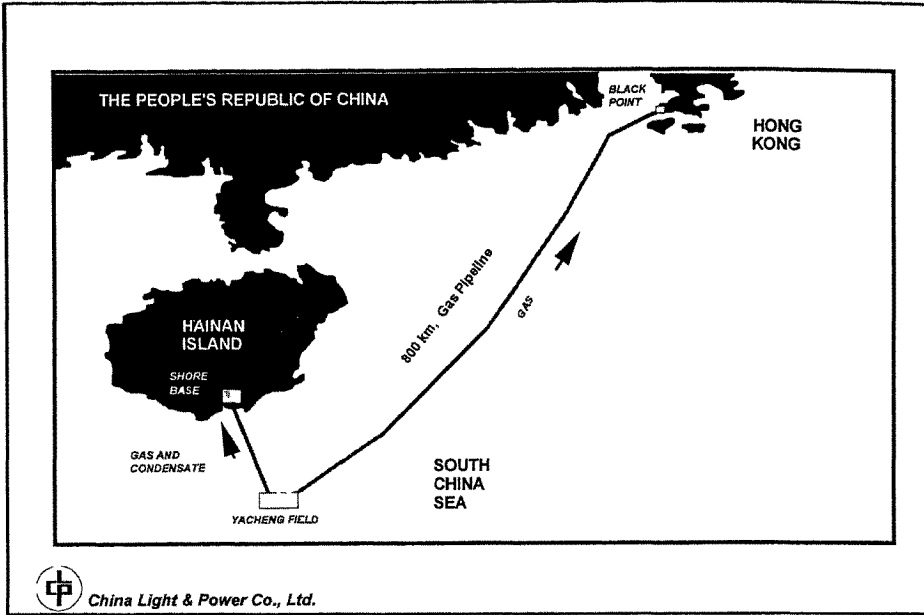
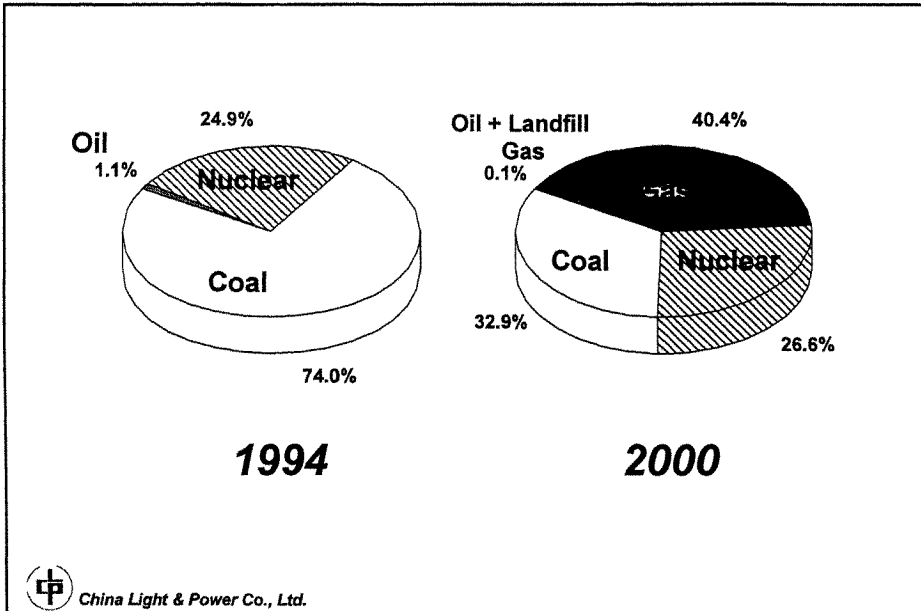


Figure 18.4 Forecast Fuel Mix for the China Light & Power System



- Natural gas also produces a minimal amount of sulphur dioxide and less nitrogen oxides as compared to coal and oil, helping to significantly reduce the incidence of smog and acid rain.
- Hence, a gas-fired power station does not require the kind of expensive environmental-control equipment that is necessary for a coal-fired power station.

B) Natural Gas Conserves Energy

- Natural gas allows the use of a combined cycle generating system that recaptures a significant part of the lost heat energy of the gas turbine for use in the steam turbine generator.
- With a thermal efficiency of about 50 percent, as compared with 36 percent for a coal-fired power station, the improvement in efficiency will mean significant fuel savings.

(C) Natural Gas Saves Operating Costs

- Manpower requirements and various other operating costs are substantially lower than those needed for a coal-fired plant of similar capacity.

(D) Natural Gas Benefits Customers

- Although fuel costs will be higher than coal on an equivalent heat basis, China Light & Power's customers will enjoy lower electricity charges due to reduced plant costs, higher thermal efficiency and lower operating costs. Besides, the customers will benefit from a better environment.

TRANSMISSION DEVELOPMENTS

In order to deliver electric power from Castle Peak Power Station economically to load centres in Kowloon and the New Territories, China Light & Power started building a 400kV transmission network in the late 1970s, which was superimposed on the then existing 132kV system. The 400kV network consists of two 400kV double circuit transmission lines arranged in a ring encircling the New Territories, and three 400kV underground cable circuits reaching into the densely populated Kowloon Peninsula (Figure 18.5).

This 400kV network has to be reinforced from time to time to provide transmission outlet for new generating sources and to supply the demand of major area developments. 400kV transmission lines are being built from Black Point to Shatin and to Castle Peak Power Station respectively to provide transmission outlets for Black Point Power Station to be operational in 1996. In addition, a 400kV substation is being built at Yau Ma Tei to supply the new loads on the West Kowloon Reclamation and another 400kV substation will supply the rapid developments in Tseung Kwan O New Town (Figure 18.6).

The 400kV network is also connected to Daya Bay Nuclear Power Station and to Conghua Pumped Storage Power Station via the 500kV network in Guangdong Province. The China Light & Power network can thus be considered as part of the South China power grid.

In order to provide a secure electricity supply to the new airport and the developments associated with the Port and Airport Development Strategy on Lantau Island, three 132kV submarine cable circuits have been laid from Tuen Mun to Sham Shui Kok in 1991. The 132kV supply will be reinforced by laying another two submarine cable circuits at the turn of the century. Together with the existing Penny's Bay Power Station, a highly reliable supply to Lantau can be ensured (Figure 18.6).

China Light & Power's 132kV network is also connected with that of Hongkong Electric since 1981. This interconnection has provided significant benefits to customers on both sides of the Victoria Harbour by allowing economy power interchange, share of spinning reserve and mutual back-up between the two power systems.

DEMAND SIDE MANAGEMENT

While China Light & Power continues to add new generating capacity to meet the rapid demand growth, it is also drawing up demand side management measures to promote energy efficiency and conservation. The schemes in the pipeline include:

- Launching a public education campaign to enhance public awareness of energy efficiency and conservation, and to provide practical guidelines for the efficient and effective use of electricity.
- Establishing an Energy Efficiency Exhibition Centre within the Hong Kong Science Museum.

Figure 18.5 400 kV Transmission System – 1994

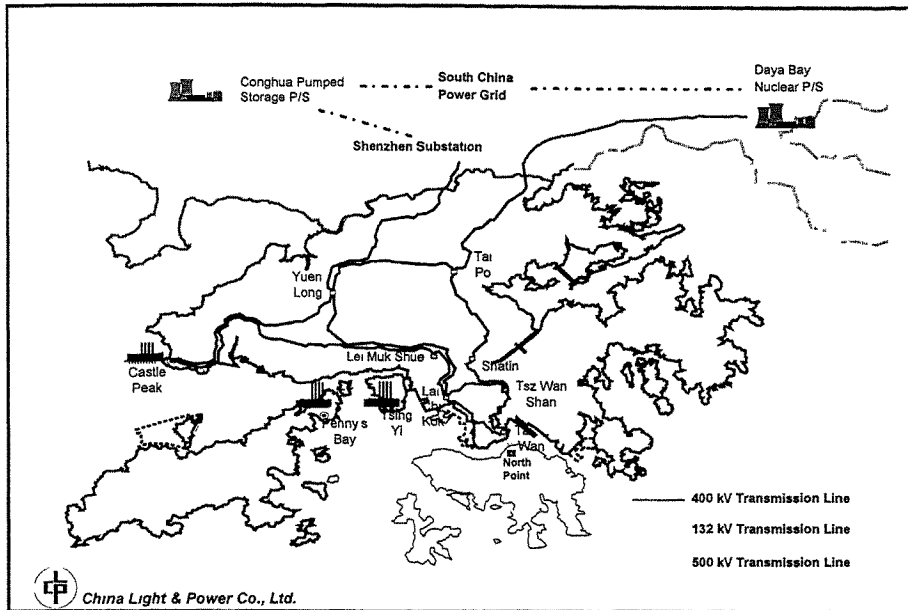
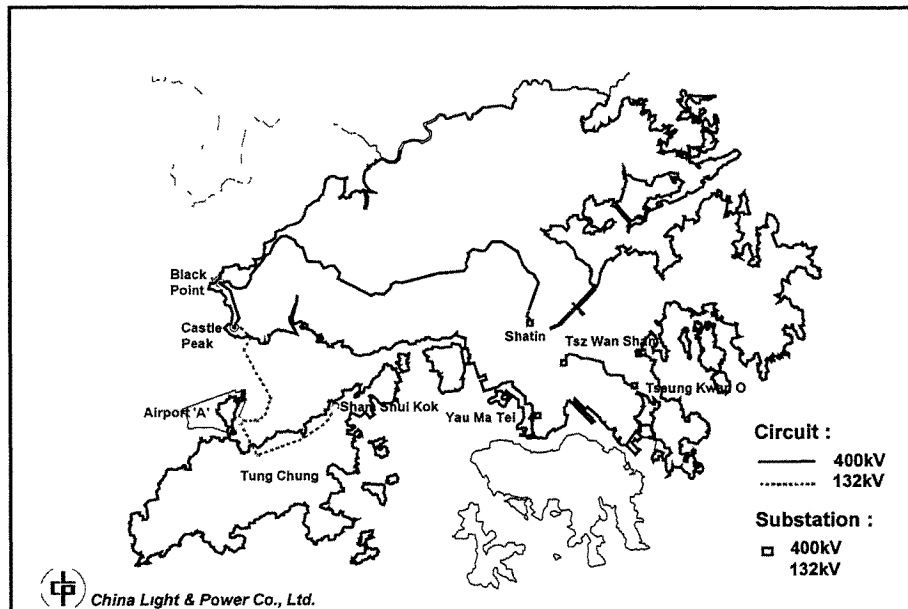


Figure 18.6 Major Transmission Developments, 1994-2000



- Filling of demand valleys and load shifting by promoting the use of environmentally friendly electric vehicles and ice-storage air-conditioning systems.
- Participating in the setting up of energy efficiency standards and labelling.
- Launching pilot energy efficient lighting programme and pilot differential electricity pricing to study the feasibility and customers' acceptance of these programmes.

CUSTOMER SERVICE

China Light & Power recognises the importance of continuously improving the quality of service to its customers. These new services include:

- Application of power supply by phone.
- Various payment methods at customers' convenience.
- Extension of payment due date.
- Customer feedback cards.
- New cash collection points.

SUPPLY TO CHINA

Besides providing the power behind Hong Kong's economic growth, China Light & Power has also been instrumental in powering the economic boom of the Pearl River Delta over the past 15 years. China Light & Power has been selling electricity to Guangdong since 1979. In the 1994 financial year, electricity sales to China amounted to HK\$843 million, representing about 6% of China Light & Power's total sales.

China Light & Power sees itself as a long-term player in China's energy development and is looking for opportunities compatible with this. The long established relationship with China will offer China Light & Power its most important opportunities for the growth in the next century. China Light & Power will continue to foster friendly co-operation with its neighbour in order to assist in the economic development of the Pearl River Delta and elsewhere in China. This includes capital investment in generation projects, sales of electricity, specialist advice and provision of management and operational training.

CONCLUSION

China Light & Power is determined to make its contribution to the continued success of Hong Kong. It will make the decisions necessary to maintain a high-quality electricity supply that satisfies the demands of its customers and gives Hong Kong a cleaner environment.

Telecommunications

Charles K. KAO

INTRODUCTION

With licences to be granted for three new PSTN (Public Service Telephone Network) in addition to the one to Hong Kong Telecom, with its four operating cellular phone operators, three CT-2 licences, 35 paging licences, one cable TV and one satellite TV, Hong Kong is not lacking in variety and quantity of telecommunication services. With optical fibre cable density of over 6 km per square km of land, with undersea cables, satellites, and over the horizon microwaves, Hong Kong is also the telecommunication hub-city with the largest number of international circuits in the world.

Undoubtedly, telecommunications in Hong Kong plays a pivotal role in supporting its financial, banking, servicing, manufacturing, trading, and commercial activities. Two new factors are making information communication even more vital for Hong Kong. These are: an increased linkage to China, and an increase in business competition on a global basis. This will require Hong Kong to plan for an increasing role for its information service sector.

Fortunately, Hong Kong is already taking proactive steps in the development of its information industry which includes, telecommunications, information communications, and information services. The government started to deregulate this industrial sector several years ago despite of the legacy of a monopolistic regulated telephone service base. First, it encouraged competition in mobile services, with cellular in the early 1980's. Second, it has licensed competitive services, particularly in data and international value added services where these fell outside the franchised monopolies. Then, it permitted multiple networks to come into being for a variety of services including video. Lately, the rule for mandatory interconnectivity of all networks was announced by the Telecom Authority. Now, the government is increasing the scope for companies and organisations to self-provide their own external telecommunication systems (SPETS). In the meantime the use

of information becomes increasingly important in all sectors of Hong Kong's activities, leading to the establishment of more information services including EDI (Electronic Data Interchange) which will make its much heralded entry soon.

The future development will continue to respond to the market push. The perceived opportunities of establishing information vending services will promote developments of several support industries which will then provide new products.

TELECOMMUNICATIONS STRATEGIES

The basic telecommunications strategies for Hong Kong in the 21st Century should be:

- i) Extending its role as a communication hub.
- ii) Developing a new telecommunication business base and an information service business base.
- iii) Using information services as a means to improve the gross domestic productivity per capita.

Hong Kong is in a most advantageous position to extend its telecommunication hub functions to service its domestic needs and those of its neighbours. Hong Kong is already in position, being equipped with the important basic piece parts such as its dense fibre network, its mobile phones and its databases. Major new undersea optical fibre cables (e.g. APC) and substantive satellite infrastructure development are underway. Additional fibre trunk extension into the Guangdong Province has also started. Recently it was announced that the education network of Hong Kong (HARNET) and China (CERNET) will be interconnected. Coupled with the completion of the fibre backbone network of China, Hong Kong's hub role will be fully accessible throughout China. The extension of hub services into China, Taiwan, and other neighbouring regions will increase the pivotal role of Hong Kong as a telecommunication hub.

With its hub role extended, Hong Kong is poised to develop its telecommunication business sector into a greatly broadened business sector. Besides being a telecommunication major hub in the worldwide net, Hong Kong will be able to develop a wide variety of information services. With its deregulated environment, the growth of an integrated information service, independently operated by multiple vendors, is possible. This will allow a fast growth of meaningful services without hindrances from the regulatory

impediments that exist in developed countries. Technological innovations are now available for the creation of telecommunications networks capable of supporting, in an integrated way, any time, any place, any means of communication including voice, video and data. Video-on-demand is under trial too. Already planned are personal communication systems, PCS, extending the voice/messaging service to include data and, later, video. Demonstration of interactive medical image transfer between hospitals and offices has been extended to real everyday usage. Database services are increasing in numbers. EDI is being readied. The distribution of information provided by information vendors is being actively pursued. Internet connection has promoted significant interest from users for new service vendors to provide value-added information taken from the internet. This situation will promote the growth of information vending and information services. In addition it will promote the demand of products ancillary to the basic telephones, faxes, computers. These new products will then support a new software-based industry which will probably be taken up by Hong Kong's electronic industry sector.

Information services in Hong Kong will grow in response to market demands. The market demands come from the trade and commerce sector as well as the industrial sector when information services can be seen to improve productivity. This process has already been started. Banks, stock markets, libraries, newspapers, travel agencies are using more information services beside telecommunication services. CD-ROMs containing information of all sorts are finding their way to the open market. Gradually many people will realise the importance of having more and better information to sharpen their business competitiveness. The chicken and egg issue has already been broken. The spiral effect of self-fuelling will see the growth of information services, particularly information vending and distribution, and the consequent effect in improving the Global GNPs. Hong Kong, being the telecommunication hub, will be a major benefactor. Growth in the network capabilities, the supporting industries, and information services will be assured.

INFRASTRUCTURE STRATEGY

The market driven strategy should still work best for Hong Kong. Given the favourable position held by Hong Kong in the transportation sector Hong Kong should respond aggressively. The policy and actions should address remaining regulatory impediments expeditiously. The monopoly of POTS (Plain Old Telephone Service) and international telephony will end in 1995

and 2006 respectfully. The cable TV licence will be for open competition in 1997. These are good news. Freedom of information dissemination must be protected, while laws governing proprietary information, personal information and code of conducts of the use of information must be carefully and clearly established. Encryption will be an important technology area to be addressed. Its legal implications must also be addressed.

Education and technology transfers must be designed to ensure respectively the growth of well qualified personnel in Hong Kong and the close coupling to international standardisation efforts. Development of support technologies for the telecommunication and information services sectors should be encouraged.

CONCLUSION

Hong Kong has a highly developed telecommunications network and serves as a major international communication hub. Its telecommunication strategies for the twenty-first century should be the extension of its communication hub role, the development for information service business base, and the usage of its communication capabilities to improve its GDP per capita. Hong Kong has the opportunity to lead the world in the development and utilisation of information services and its ancillary industries. Strategically, it is one of the most important areas for growth in the 21st Century. Doing this well will lead Hong Kong to become the most competitive region in everything it does.

Other Infrastructures: Water Supplies, Sewerage, Drainage

M.J. MATTHEWS

INTRODUCTION

According to the programme, the subject of my presentation is “Strategies for Other Infrastructures: Water Supplies, Sewerage, Drainage”; the relationship between which is summed up with elegant simplicity in the words of the Tom Lehrer song:

*“What they flush in the morning in San José,
they drink with lunch in Monterey.”*

What is not mentioned anywhere in the programme, and I think that this omission prejudices the success of the entire Conference, is the most friendly of utilities, gas! As the managing director of Towngas I am pleased to have risen to the challenge and included it in my presentation.

WATER SUPPLY

The critical strategic issue for Hong Kong’s water supply is to assure continuous, reliable supplies of clean water in the face of slowly growing demand in Hong Kong, static water resources within Hong Kong’s borders and growing pressure on water supplies across the border. This year Hong Kong will consume about 950 million cubic metres of water, of which 270 million will come from Hong Kong’s own resources and the balance from the East River in Guangdong Province via the Shenzhen Reservoir (Figure 20.1 and Table 20.1).

In the next 15 years, Hong Kong’s demand is expected to grow by about 35% (roughly 2% per year), with all of the extra demand supplied through the existing Chinese source – an increase of about 50%. These extra quantities are amply provided for in a contract between the Hong Kong Government and the Guangdong Provincial Water Authority.

Figure 20.1 Pearl River Delta: Water Supply

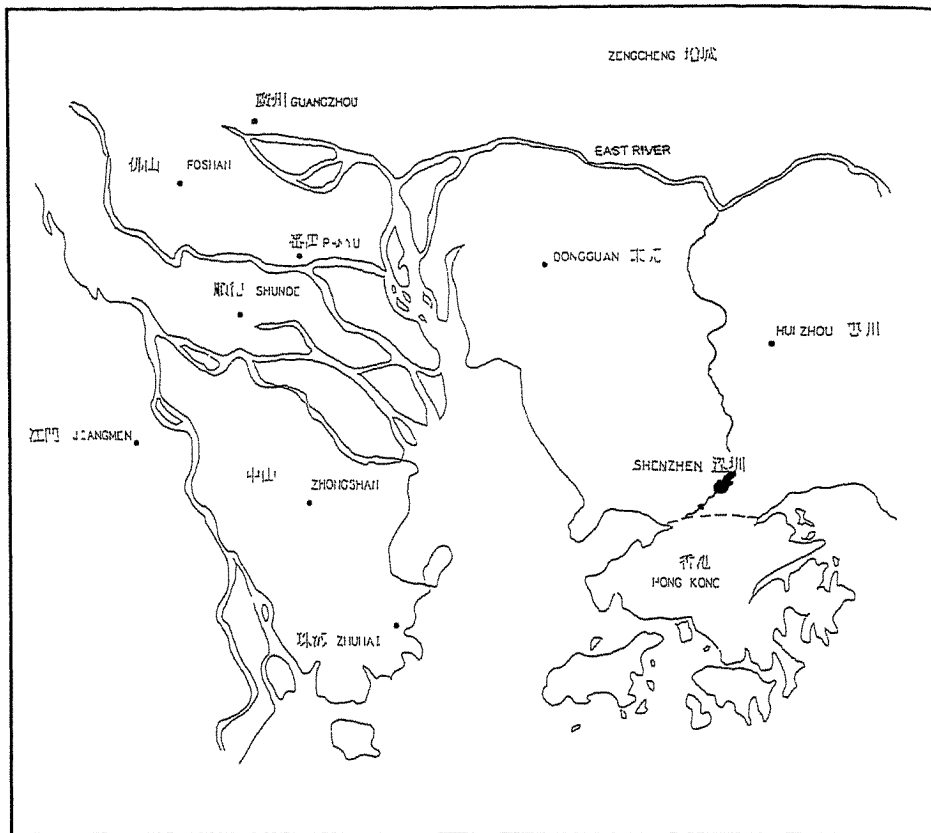


Table 20.1 Water Supply: Supply and Demand
(Units: millions of cubic metres per year)

	Hong Kong Demand	Hong Kong Local Supply	Balance from Guangdong	Contract Quantity Supplied by Guangdong	PRC Demand on East River	Average Annual Available Supply	Short-fall
1995	950	270	680	690	N/A	N/A	-
2000	1,050	270	780	840	24,300	25,570	490
2010	1,280	270	1,010	1,100	26,730	25,570	2,170

However, it is important to note that the cities which also draw water from the East River, principally Shenzhen, Dongguan and eastern Guangzhou, are experiencing rapid growth in both population and economic development. This has a two-fold effect on the water system. First, both human and industrial demand will grow quickly. Second, sewage and industrial waste will threaten the quality of East River water unless properly treated. Chinese sources indicate that with normal rainfall, overall demand on the East River supply will be just about satisfied in the year 2000 but there will be a shortfall of about two billion cubic metres in 2010, out of a total supply of 25.6 billion cubic metres.

But those figures are for average years. In fact, the difference in water supply in dry years and wet years is in the ratio 1:3. Furthermore, 80% of the rainfall occurs in the six summer months. So the overall supply system is potentially quite stressed.

Hong Kong's principal strategy is to rely on its contract with the Guangdong Water Authority, at an advantageous price, to give Hong Kong first call on available supplies. Given its relatively small share of the total supply even in a dry year, this is realistic. However, further measures to encourage conservation in Hong Kong would make strategic sense. The main thrust towards conservation has been salt water flushing and 90% of homes will soon be on this system. Further action would be appropriate and I would strongly encourage the Hong Kong Government to raise the price of water for domestic users to economic levels so as to give people a financial reason to take water conservation seriously.

Concerning quality, Hong Kong's strategy is to await developments. The cities along the East River have a strong incentive to treat their own wastes in order to preserve the quality of their own water supply. If their response is inadequate, Hong Kong has the ability to augment its own water treatment plants to deal with any foreseeable contingencies.

SEWERAGE

If the water supply strategy takes care of what goes in, then the sewerage strategy takes care of what comes out. The overall strategic objective is to assure that waters in and around Hong Kong are of a quality suitable for their intended use. Each of the ten Water Control Zones has a set of Water Quality objectives, which are to be achieved through a broad range of measures defined in the 1989 Sewage Strategy including a massive upgrading of the sewerage infrastructure and the associated construction of deep interceptor sewers and large treatment plants, followed by discharge of partially treated sewage to the deep ocean.

All but one of the 16 main sewerage catchment areas have been reviewed prior to preparing a Sewerage Master Plan (SMP) to provide adequate facilities to collect all foul water in the area. Around the Harbour, the SMP sewers will run into facilities to be provided by the Strategic Sewage Disposal Scheme (SSDS), which must be the second-best publicised Government project after the Airport. Part of the first stage of the SSDS is now under construction but, as you know, there is a worrying lack of agreement on the form of treatment which SSDS sewage is to receive. The worst possible scenario is a massive discharge of untreated sewage collected from all points around the Harbour into a single point in the Harbour.

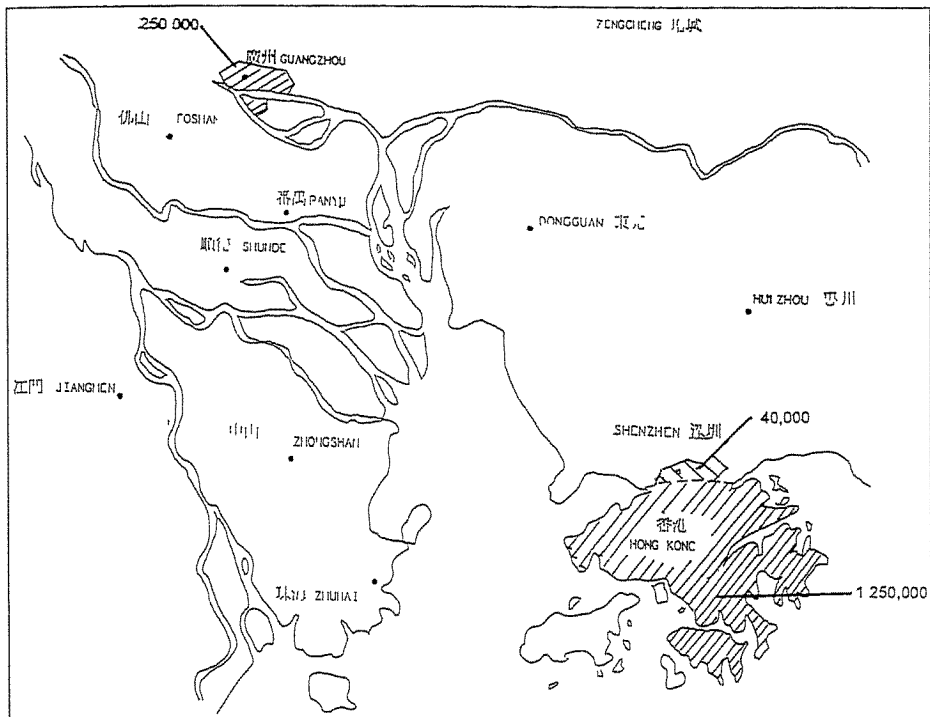
Assuming this issue is quickly resolved, the Sewage Strategy articulated by the Hong Kong Government should serve Hong Kong well into the next century, with minor adjustments for quantity and quality. The imponderable is the extent to which Hong Kong's aquatic environment will be affected by rising pollution of the 326 billion cubic metres of water per year discharged through the eighth mouths of the Pearl River. Strategy here will rely on cross-border co-operation such as the Joint Hong Kong-Guangdong Environmental Protection Liaison Group currently dealing with pollution in Deep Bay.

DRAINAGE

In part, drainage and sewerage are two sides of the same coin. Almost half of Hong Kong's sewage and industrial effluents today reach the sea via storm drains and are therefore untreated. The construction of adequate sewerage, backed by legislation, will bring about the necessary separation of storm water and sewage, in effect providing extra capacity to handle storm water run-off.

Beyond that, drainage strategy has to concentrate on the broader issue of flood prevention by assuring that our river system has the capacity to carry away as urban growth increases the rate of run-off. An example of this is the joint project with the Government of Shenzhen to straighten, widen and deepen the Shenzhen River for the 16.7 km between Muk Wu and Deep Bay. The Shenzhen River drains an area of 187 km² in Shenzhen and a further 125 km² in Hong Kong. Together with a second project to improve drainage of a further 91 km² by re-working sections of the Shan Pui and Kam Tin Rivers, this work should substantially reduce flooding in the Northwest New Territories (NWNT). The design criterion is the ability to handle 50-year storm conditions.

Figure 20.2 Pearl River Delta: Piped Gas Supplies (units in number of piped gas customers)



GAS

The planner's objective should be to make piped gas available to everyone who could be served economically. This, on the grounds of convenience, safety and cost.

In Hong Kong today, about 63% of homes are using piped towngas or piped LPG and another 5% have a piped supply already in the building. The total of 68% compares reasonably well with 79% in the U.K. or 49% in Japan and it is increasing at about 3% per year. So we can conclude that Hong Kong's future strategy should be a continuation of its past strategy.

In the Pearl River Delta, there is a small piped LPG system in Shenzhen and a larger towngas system in Guangzhou (Figure 20.2). Small piped systems are appearing in other cities in the Delta and these should be encouraged, so long as they are designed to be compatible with natural gas. In total, about 5% of homes in the Delta have piped gas.

Early next century, I expect to see natural gas from a second largest gas field in the South China Sea delivered to the shore-line of the Pearl River. It will be strongly to the environmental benefit and the economic benefit of this region if that gas is used by domestic, commercial and industrial customers instead of being burned in a power station. Creating an adequate base-load in reticulation systems in the Delta and Hong Kong will be one important step towards securing that gas. Another important step will be the provision of suitable space at the shore-line for gas reception facilities and transmission line rights-of-way to city-gate stations throughout the Delta.

CONCLUSION

No address by a “utilities man” to planners should be allowed to end before the following plea is entered: *“When you planners develop new areas or redevelop existing areas, please, please leave enough space under footpaths, cycle tracks or whatever for all the utilities. There are a lot of us; we are a necessary feature of the good life, but it is becoming extremely expensive to find routes for new or larger utility lines and one day, who knows it may simply be impossible!”*

STRATEGIC PLANNING ISSUES

Software that Keeps Hong Kong Ticking – People and Institutions

Anthony NEOH

When the title of this paper was first suggested to me, I thought that it was sufficiently intriguing to accept. When I began to think about it, the subject proved as difficult as it was intriguing. The difficulty lies in the many-faceted nature of Hong Kong society. I have therefore decided to try to go to the root of the “software” and suggest certain fundamental principles. Perhaps, using computer software jargon, a universal operating system – the UNIX equivalent in the world of social ordering.

As a lawyer and a public servant, I *should* at all times be keenly aware of the “operating system”. That normative statement is also to a certain extent a social fact. I am *in fact* at all times keenly aware of this “operating system”. This is not because I am particularly perceptive. It is because the people and institutions of Hong Kong keep me thus keenly aware.

The very definition of society is founded on the existence of rules of conduct which are commonly accepted. In modern day society these rules of conduct are institutionalised into rules of law. However, as Hart (1969, p. 113, Chapter VI) had pointed out, rules of law are efficacious only to the extent that they are commonly observed and officially applied according to commonly accepted standards, a point upon which Confucius has made a similar observation a long time ago and recorded in the Analects: “*People who are ruled by punishment, will not break the law though they will have no shame in disobeying it (presumably, if they are not caught). But people who are ruled by morality will not only obey the law but will be ashamed of disobeying it*” (Analects of Confucius, 1993). Underpinning the software, or the rules of law, in Hong Kong, is this basic ethical tenet, namely, the common acceptance of the principle that the law should be obeyed. This common acceptance applies not only to the citizenry but also among officials in all acts of government. Thus, to every act of government, be it

judicial, legislative, or executive, there is common acceptance that there must be legal support. Common obedience of the law in fact lies at the root of what we often call, the "Rule of Law". My friends from the Mainland often tell me that the one thing which impressed them most about Hong Kong is the common respect for the law. But there is no room for complacency.

As the people of Hong Kong are thinking people, they will not long accept the principle that the law is there to be obeyed unless they accept that the substance of the law is just. That is why, there must be opportunity for the people of Hong Kong to participate in the process of law making and in the process of application of the law. It is therefore very important that the culture of government should be founded on participation. By this proposition, I would make it plain that I am not an advocate for merely more democracy. I find democracy inadequate in present day society because democracy does not encourage participation but is merely a periodic exercise of a right to vote people in or out of office. If democracy is to mean anything, it will have to be reinvented to allow those who exercise the vote or have the right to do so, to participate in the process of public decision making.

A culture of public participation would mean that all important public policies should receive a public airing in a manner which enables the public to make an informed choice. At the same time, those who are subject to the application of public policy should be given sufficiently clear guidance as to enable them to comply or, if need be, to question the decision by informed and rational argument.

In the legislative process, there is already a culture of public participation, in particular, the White Bill process and to the process of Bills Committees of the Legislative Council, to which the interested public may either attend or make representations. The judicial process does not lend itself to public participation as the function of adjudication is vested with judge or judge with jury, as the case may be. However, as judicial proceedings affect not only the parties before the court but also the public by way of the judicial precedent set in the case, there must be a way of ensuring that important court cases are publicised in an intelligible manner to the public. A digest of important cases, with the basic facts and the central legal principles established or applied, could be published in both English and Chinese. This will involve substantial resources but in time, such a digest will enable the community to understand the legal process and thereby confer both legitimacy and confidence in it.

It is, however, in the area of public administration where the "operating system" has not been universally established. Three simple rules of public

administration, which I believe should form the operating system, might be adopted:

- i) *There should be an attitude of openness in all public decision making.* There should be a willingness to discuss the rationale behind any policy and the factual basis of the policy should be made freely available to the general public in a readily understandable form. This is an area where the Government presently does best. The Code on Access to Information is a positive step in helping open discussion of public policies. Furthermore, it is only when issues of public interest are openly discussed that the general public are able to judge the force of the argument of special interest groups and be in a position to judge for themselves, whether any public policy genuinely addresses the interest of the whole community.
- ii) *All unfavourable public decisions against individuals should be accompanied by full reasons.* Reasons cannot be regarded as full unless they form an adequate guide to action to enable the refused party to comply in a further application or be challenged on objective grounds. This is an area where many Government departments are improving upon, but there is no uniform practice. In particular, where reasons are given, sometimes they are so vague as not to allow the recipient to adequately comply. I believe that the Town Planning Board can usefully improve upon the quality of its reasons for refusal.
- iii) *An onus should never be placed upon a applicant for a licence or permission to prove a negative unless that could be readily done,* for example, it would be possible to prove that a person has no previous conviction by the production of a certificate of no conviction from the Bureau of Criminal Records. It would be entirely wrong for a public authority to refuse a permission if the applicant is unable to show to its satisfaction that, for example, a project under application, if approved and implemented, would not create adverse impact on the environment. That would be tantamount to conferring on the permission granting authority arbitrary powers of decision making. One can ask the rhetorical question: “When is an authority satisfied?” or “How long is a piece of string?”.

The idea of an universal operating system is that the user may use any software in any hardware. So it is with the three basic principles of public administration, the acceptance and universal application of which would enable the community to have confidence in the quality of public

administration and decision making. This would serve to continually reaffirm our belief in the Rule of Law.

Acknowledgement

I would like to thank my friend, Iris Tam, for outlining this paper for me.

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Is Hong Kong's Development Sustainable?

Peter HILLS

INTRODUCTION

As Hong Kong enters the 21st Century, environmental concerns are likely to occupy an ever more prominent position in terms of the way in which we evaluate the development of the future Special Administrative Region (SAR) and indeed, Hong Kong's status as a major world city. By environmental concerns, I do not simply mean the quality of the physical environment within which we live as reflected, for example, in air or water quality measures, but rather, the quality of the overall urban environment that emerges over the coming decades – the “urban experience”, if you like. Furthermore, I do not think it appropriate to consider this environment purely in terms of its local context. For various reasons, it may well be that Hong Kong's future environment will be influenced by a number of external factors that will become of increasing importance in the years ahead.

I have been asked to address the topic of sustainable development in the context of planning Hong Kong for the 21st Century. This is a potentially vast and complex topic which, I suggest, would leave as many questions unanswered as answered. I doubt that anyone can give a definitive response to the question that forms the title of my paper. Clearly, at one level, Hong Kong is inherently unsustainable from an internal viewpoint, as evidenced by our reliance on an enormous variety of imported raw materials, foodstuffs, water and energy. Nonetheless, Hong Kong has continued to develop and to enjoy relatively high rates of economic growth. This had been possible because of our ability to compete effectively in the international marketplace for the commodities we require and, more recently, because of the special relationship that we enjoy with China. What we often tend to forget, however, is that our environmental footprint extends well beyond the boundaries of the territory and its scale bears no comparison to the physical size of Hong Kong itself.

In the remainder of this paper I propose to set out some of the basic principles associated with the concept of sustainable development and to review briefly how Hong Kong might respond to the prevailing international concern regarding the emergence of sustainable cities. Before I do this however, I would like to emphasise that there is a continuing debate regarding the utility and effectiveness of the concept of sustainable development. While it is a concept that must inevitably appear on the agenda of any conference of this type, it is becoming increasingly clear that its basic tenets and operational implications are now being scrutinised in a much more critical manner than, say, just three years ago. There are already clear indications of an intellectual backlash against the very essence of the concept but an alternative paradigm has yet to emerge.

DEVELOPMENT AND THE ENVIRONMENT IN HONG KONG

Some two years ago, I chaired a public lecture in Hong Kong given by Frances Cairncross of *The Economist*. Ms Cairncross's lecture dealt with the relationship between economics and the environment. She started the lecture by telling her audience how fortunate they were to live in Hong Kong. She then went on to list some of the many achievements of the territory. I do not propose to offer you such a list. I think we all know what Hong Kong has achieved over the past 40 years and what we hope it can achieve in the coming decades.

Clearly, we tend to be preoccupied with Hong Kong's economic success. However, I hope that we would also agree that this success has been gained at some considerable expense to the quality of our environment. Over the past 15 years government has attempted to tackle many of the environmental problems resulting from rapid urbanisation and industrialisation. The environment has been dealt with, however, on an issue-by-issue basis, largely through an increasingly extensive system of regulation and related standards, and primarily, though not exclusively, as a local, that is to say, Hong Kong problem. The more determined critics of environmental policy in Hong Kong would probably argue that we have been doing a great deal of fire-fighting without getting to the real causes of the fire.

Advocates of sustainable development would argue that our existing approach to the environment is no longer viable as the sole means of defining the nature of the problems we face or possible solutions to them. Nor is it feasible for government's concern about environmental issues to be articulated or expressed through the activities of just one policy making branch and department. All areas of policy making touch upon or interact

with the environment in one way or another. In some cases, the linkages are very clear and direct. In others, less so. Nonetheless, all parts of government now have a responsibility to evaluate the environmental consequences of their policies and to work towards the achievement of sustainable development.

SUSTAINABLE DEVELOPMENT

“Sustainable development” has become one of the most widely used, and some would say misused, terms in the language of contemporary policy making. Definitions of the term are numerous, sometimes confusing and often unhelpful in providing guidance about how sustainable development can indeed be achieved. One author described sustainable development as “the refuge of the environmentally perplexed”.

These problems aside, there has however been quite widespread international agreement promoted through such mechanisms as the 1992 United Nations Conference on Environment and Development in Rio and *Agenda 21*, that the pursuit of sustainable development is a desirable objective, or, let me put it another way, that unsustainable development is undesirable.

Of the many definitions of sustainable development that have been offered, one of the most frequently quoted is that of the Brundtland Commission. This United Nations Commission, whose report, entitled *Our Common Future*, was published in 1987 defined sustainable development as:

“...development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

Sustainable development is both a concept and a strategy. As a concept it embodies three important principles:

- a) futurity;
- b) welfare;
- c) equity.

Futurity reflects a concern with the future – the long-term future, which extends well beyond the traditional time horizons of the policy making process. It also reflects a fundamental preoccupation with future generations and their well-being. Working with the concept of sustainable development is especially challenging for existing political and policy making institutions. Both must try to re-orientate themselves to think decades into the future and may well have to commit resources now to generate long-term payoffs, or to

avoid long-term costs, the nature and scale of which are notoriously difficult to specify.

Welfare is a central concern of sustainable development. It relates to the way in which we measure development. Conventionally, this has been expressed in terms of the rate of growth in GDP. An economic growth rate of 6% is typically preferred to one of 3% and is taken to indicate more (and by implication, "better") development. Sustainable development questions this interpretation and directs our attention to the meaning of development in terms of quality of life and the sustainability of the natural environmental systems upon which our economies are ultimately based. Let me emphasise that sustainable development does not imply no-growth, although it will almost certainly involve changes in lifestyle. Rather, it directs us to examine the quality of development and whether over the longer term our existing socio-economic systems can and should adapt to changing circumstances reflecting the availability of environmental resources. These resources involve not only commodities, such as tropical timber, but also the environment's own absorptive capacity (i.e., its ability to cope with airborne emissions, effluent discharges, etc.).

Equity considerations involve not only inter-generational issues (that is, between our generation and those that follow us) but also inter-generational concerns. The latter reflect the way that resources, including environmental quality, are distributed among the existing population and between countries. Needless to say, this is a highly contentious issue, touching as it does upon the essence of the relationship between richer and poorer countries.

In essence, sustainable development is trying to get us to move away from a situation in which we are constantly drawing down on environmental resources to one in which the renewal and replenishment of these resources are recognised as being essential to the long-term viability of our economies. Put another way, we cannot go on incurring environmental debts which we have no intention of repaying. Unlike the banks that can help us through the trials and tribulations of our own personal financial circumstances, the environment may in the longer term prove rather more unforgiving.

Environmental issues can no longer be regarded simply as a matter for the domestic political agenda. The environment is now a matter of global concern. It has become a diplomatic issue discussed among heads of governments. Responses to a growing number of environmental issues involve global initiatives (such as the Montreal Protocol on Ozone Depleting Substances). These global environmental responsibilities cannot be side-stepped. Hong Kong may be a relatively small actor on the international stage but, as I have suggested earlier, its environmental footprint is a significant nonetheless.

HONG KONG'S ENVIRONMENTAL FOOTPRINT

Let me briefly elaborate on this idea of the environmental footprint because I think it may help to clarify how sustainable development fits into the Hong Kong context. As I mentioned earlier, we have tended to be preoccupied with what we regard as our own environmental problems – pollution of the harbour, air quality in Kwun Tong, golf courses and their relationship with country parks. But these are only manifestations of one particular category of environmental problem. Of course, we may feel strongly about them because we can see or experience their negative effects on a daily basis.

But Hong Kong's impacts on the environment extend well beyond the 1,080 km² or so of the territory itself. Some of these impacts are of a transfrontier nature – air and water pollution. But others are more complex and difficult to appreciate because they result from Hong Kong's trading connections around the world. Hong Kong lacks any major resource base of its own. It imports much of its food, its water, its energy and many other raw and processed materials as well as finished products. The point about many of these commodities is that Hong Kong does not directly experience many of the social costs, that is to say, environmental costs associated with their production, conversion or processing. In short, we are often totally ignorant about the impact of our own demands on the environment, particularly where these impacts occur outside of Hong Kong. Needless to say, we are not always aware of real cost of impacts that actually do arise within the boundaries of Hong Kong itself.

Now of course you might argue that Hong Kong is simply a buyer in a global market and the fact that prices do not necessarily reflect the true social costs of production and processing is not Hong Kong's fault but that of the producing country. Fair point. But what I would suggest to you is that thinking in many countries is beginning to change and that as a consequence we are likely to see environmental costs figuring more prominently in the prices that we pay. This will place a premium on the efficient use of resources, if only for economic reasons, although the environmental arguments for such efficiency are compelling as well.

But it is not only what we buy in that will be affected by changing perceptions of the real costs of production and resource exploitation. What we ourselves produce and market will be increasingly subject to environmental regulation and requirements for sound environmental practice in terms of product design, related production processes, waste stream treatment, potential health impacts and the like. This is already happening in the European Union and in North America and will eventually be reinforced

through instruments such as the ISO 14001 international standard, which is currently being drafted. If Hong Kong manufacturers wish to remain competitive and indeed to retain access to their markets, they will have to comply with such requirements. Their production plants outside of the territory will also have to comply.

Yet another area of concern is Hong Kong's role and responsibilities in relation to certain key global environmental problems. Hong Kong has already moved on Ozone-depleting Chlorofluorocarbons (CFCs) problem. Far more challenging in many respects will be the problem of global climate change, touching as it does upon so many dimensions of a modern, urban economy. We must recognise, however, that we are talking here of global responsibilities and again I would emphasise that these cannot be ignored or side-stepped and also that they are likely to impinge upon many areas of policy making.

So we can look at Hong Kong's environmental footprint in a number of ways from the highly localised to the global. This footprint will not only change as Hong Kong adopts new environmental regulations and practices but will also be influenced by the changing structure of the local economy and, indeed, by Hong Kong's changing relationship with neighbouring parts of Guangdong Province. The implications of structural economic change in Hong Kong are indeed potentially far-reaching. I am of the view that manufacturing industry in Hong Kong will continue its decline over the next ten years and that Hong Kong is moving rapidly towards the status of a post-industrial city. This may well have profound environmental implications and it may also have significant implications for public attitudes and expectations regarding environmental quality. The emergence of the one of the world's great urban complexes around the Pearl River Delta will also profoundly affect our thinking on the environment in the decades ahead. In the longer term, if we wish to frame policies for sustainable development then we must, I feel, look to the development of a regional sustainable development strategy which embraces the Delta area as a whole.

These points conveniently close the circle and leads us back into the core of the concept of sustainable development and its concern with the meaning of development itself, with equity and our responsibility to the future.

As many of you will no doubt be aware, much of what I have said or implied appears not to be founded in the real world of politics, scarce government resources and apparently indisputable facts and figures. Rather, it is about values, attitudes and ethical considerations which cannot be easily captured in the policy making process. That, unfortunately, is the nature of the concept we are dealing with. It also a key dimension of the reaction

against sustainable development which appears to be gathering momentum in Europe. The problem essentially is that the implementation of the basic principles of sustainable development will require policy initiatives that are quite unrealistic insofar as they relate to necessary changes in individual lifestyles and perceived living standards in Western industrial societies.

MOVING TOWARDS SUSTAINABLE DEVELOPMENT

I do not propose to offer you a model of sustainable development that should be practised in Hong Kong. Given that nobody has yet developed a convincing and comprehensive strategy for sustainable development elsewhere it would be difficult to set out a strategy for Hong Kong. What I can do, however, is to direct your attention to some of the issues that I feel need to be resolved in any attempt to move towards a sustainable development strategy for the territory. These are:

- a) the need to integrate economic, social, political and environmental considerations within the policy making process. This implies more effective co-ordination of policy initiatives, monitoring of outputs and cross-checking for consistency of approach within an overall framework that sets out the kind of society that Hong Kong should be in 30, 40 and 50 years time;
- b) the need to evaluate critically the effectiveness of existing policy making and advisory institutions in terms of their performance in dealing with environmental issues;
- c) the need to track changing public values concerning environmental issues and to bring more clearly to the public's attention the trade-offs that are associated with different strategies for development as well the nature of Hong Kong's environmental responsibilities, both regionally and globally;
- d) the need to identify the roles and responsibilities of other "actors", particularly the private sector and NGOs;
- e) the need to target specific sectors and activities in which issues of sustainability figure prominently or which are central to the pursuit of sustainable development strategies. Examples might include the management and control of urban and infrastructure development, the development of transport systems, the changing scale and character of the manufacturing sector, the use of energy, water and other raw materials, including tropical timber products;
- f) the need to explore and evaluate a wide range of policy instruments that

might be used to encourage a move towards sustainable development. Foremost among these instruments would be market-based measures for environmental policy initiatives.

In short, if we wish to start to move towards a sustainable development strategy for Hong Kong we need a long-range vision of the kind of place and society that should emerge in the decades ahead, we need a consensus on where to start, that is, in which sectors, and, above all, we need a clear and consistent policy framework that is maintained on a long-term basis. I cannot over-emphasise the importance of the last point. The integrity and consistency of policy is all important in the pursuit of sustainable development, although clearly, policy must always remain robust or flexible enough to respond to new issues and challenges.

As far as developments elsewhere are concerned, I would like to comment briefly on some aspects of the UK's approach to sustainable development. In July 1993 the UK Secretary of State for the Environment issued a Consultation Paper on a UK Strategy for Sustainable Development. Its purpose was to set out a general structure for the strategy and to invite comments from interested parties as an input to the final document to be prepared by the end of 1993.

The Paper has its origins in two of the principal outcomes of the Earth Summit in Rio last year, namely the establishment of a Commission on Sustainable Development under the aegis of the UN and the adoption of *Agenda 21*, an environmental action plan for the 21st century. *Agenda 21* calls for the preparation of national strategies for sustainable development that are to be submitted to the new Commission.

The general structure of the UK's strategy document is as follows:

- a) an introduction outlining sustainable development issues in the UK and key principles;
- b) a section dealing with environmental media and resources – now and projected over the next 20 years;
- c) a section on economic activities and sustainability focusing on interrelationships between economic development in the major sectors of the economy and their environmental impacts;
- d) a section dealing with putting sustainability into practice, which deals with the role and responsibilities of different actors and the use of different instruments for policy implementation.

In specific cities in the United Kingdom attempts are being made to

formulate strategies that will enable progress towards greater sustainability in the decades ahead. One such example is the Manchester 2020 demonstration project which is concerned with the development of a sustainable city region. A recent report by the Working Group responsible for the management of the project identifies three key stages towards sustainability:

- 1) stabilisation of environmental impacts and trends;
- 2) redirection of impacts and trends to continuously reduce local and global environmental impacts;
- 3) longer term sustainability.

While the approach adopted in Manchester provides some interesting insights into the way in which a substantial conurbation works from an environmental viewpoint (e.g., in terms of inputs of key resources and outputs of wastes and pollutants), it remains problematic as no clear attempt is made to specify what constitutes sustainability. The main thrust of initiatives proposed in the Report involve the more efficient use of resources, such as energy, and the progressive reduction of pollution burdens, including greenhouse gases. This, I believe, points to one of the central dilemmas confronting planners who are trying to integrate sustainable development thinking into their work. It is essentially the dilemma of establishing effective measures of sustainability that provide both guidelines for policy and evaluation criteria. As it stands, the type of approach adopted in Manchester represents an intensification of existing approaches to environmental and resource management which although offering some potential benefits in terms of environmental quality improvements may not guarantee long-term sustainability of the urban system. Indeed, it appears that as soon as one moves into specific policy sectors overall sustainability concerns are often side-stepped in favour of addressing tractable environmental concerns of the type associated with problems such as vehicular emissions, energy efficiency and waste management and recycling. Clearly, such an approach has its attractions because it can be argued that the positive steps taken to address these concerns are likely to move us closer to a sustainable future rather than away from it. Furthermore, many such interventions make good sense from an economic perspective. The critical question, of course, is determining the boundaries of that sustainable future, knowing when it has been achieved and understanding what needs to be done on a much longer term basis to stay within the boundaries of sustainability.

Similar kinds of operational problems confront us in Hong Kong. We already know the areas where improvements are required to achieve higher

levels of environmental quality. We also know the types of policies that are needed to achieve such objectives. These objectives may be pursued within a sustainable development framework or outside of one. However, given the size and characteristics of Hong Kong, it is debatable whether a sustainable development framework is particularly useful within the context of the territory. Clearly, we should attempt to achieve the highest possible environmental standards compatible with overall territorial development objectives and we should seek to ensure that new infrastructure, housing and industrial projects are designed to promote the achievement of higher environmental standards. We are already making use of certain planning principles that can be integrated into a sustainable development framework, including the concept of carrying capacity. However, such concepts must be used extremely carefully here because the ultimate absorptive capacity of the certain environmental media (e.g., marine water quality and air quality) are determined not only by development actions that take place in Hong Kong but also what occurs in neighbouring parts of Guangdong Province. This again suggests that much greater emphasis has to be placed on strategic planning which seeks to integrate environmental management efforts across a much more extensive geographical region.

CONCLUSION

Sustainable development is a concept that few environmental policy makers can afford to ignore at the present time. It is a concept that is widely advocated but which few countries or cities have yet managed to translate into practice. In the context of Hong Kong, it is a concept that may have only limited relevance and application, for reasons that I have pointed to in this paper. It is debatable whether the concept can provide us with appropriate and realistic guidelines for planning and for the framing of long-term development strategies. This, of course, does not relieve us of the responsibility to manage our all our resources in such a way as to achieve the best possible environment for the community as a whole. The quality of the physical environment is, as I have argued, just one element in this more complex equation of resolving the trade-offs between economic and social aspects of development. It is clear, however, that the pursuit of improved environmental quality in Hong Kong will force us to confront the dilemmas and contradictions that arise in a society that is intrinsically growth-oriented and which even now lacks an awareness of its broader environmental footprint.

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The Socio-Politics of Community Participation in Territorial Planning – The Challenge of Hong Kong’s Governance Towards the 21st Century

LAI On-Kwok

THE NEW SOCIO-CULTURAL CONSTELLATION – RIGHTS TO PARTICIPATION IN QUESTION

In the late 90s and beyond, there will be changes on both political and social systems in Hong Kong as shaped by the Hong Kong Special Administrative Region (SAR) governance under the Basic Law and more importantly, it is the newly emerging socio-economic contours, predicaments and their constellation with a fast changing (post-fordist) mode of spatial division of labour in this region – the *Growth Triangle* in South China (OECD, 1994; ADB, 1994; Tang and Thant, 1994).

The newly emerging socio-political challenges over the SAR governance are much more difficult for officials and planners to comprehend and in turn, hard to cope with. With limited certainty on future, seemingly, there are two “black holes” of the future SAR governance. First, it is related to the structural-institutional set up of the political system whereby interest and conflict articulations between rival groups (with different socio-cultural origins as well as worldviews) are going to be more intensified – rather than serving as a buffer or reconciliation zone between the official administration sector and the general public. Second, the socio-cultural formation of Hong Kong is more complicated and complex than previous decade as expressed in terms of demographic differences, an ageing and ethnic diversifying society for instance, an emerging divided society with a dualistic (formal and informal) socio-economic structure:– widening gaps between the rich and poor, between employed and unemployed, and between local and migrant workers.

For socio-political governance over territorial development issues, the fundamental *problematique* confronting the viability, efficient and effective functioning, and legitimacy of our political system is: are most of the people (and in legal terms: citizens) represented fairly and in a just way in this system? Here, the distinction of the so-called Hong Kong Citizenship and others should be drawn, as *Citizenship* in most cases implies guaranteed civic, political and welfare rights (Jordan, 1989), which in turn shapes *Who* can participate in the political process of governing territorial and spatial policy decision making. Given a socio-cultural diversifying community, people participatory mode of territorial planning might mean different issues, strategies and ways in and through which planning decision could be legitimately established with popular supports. Hence, the people's right or more specific, the access to the right, to participation in planning process should be established with justice and equity consideration.

Historically and under a colonial regime, many critics have pointed out elsewhere that there was not much people (nor their elected representatives) participation in the administration-led planning process for spatial and territorial significant projects, say, the Port and Airport Development Strategy (PADS) and the Territorial Development Strategy (TDS) (Ng, 1993). Yet, this non-participatory mode of territorial planning should not be misread as having any positive functional relationship with the Hong Kong economic *miracle* in long run, as socio-political conflict articulations are more than often, and in some instances, more than necessary when the administration wrongly assumed their expertise could do good for people via re-allocation of specific groups of people to other locality – social costs and conflicts anchored at the New Town experiment can illustrate this point.

THE WAVES FOR SOCIO-POLITICAL PARTICIPATION – OVERLOADING OR UNGOVERNABILITY?

The quest for more individual, group and community interests articulation in and beyond the administrative system over land use and territorial policy as manifested in the form of NIMBY (Not In My BackYard) and NIOBY (Not in Our BackYard) to NIABY (Not In Anybody BackYard) is not uncommon as socio-political culture moving into a more mature phase of development (Mowrey and Redmond, 1993). This can be seen by the politicisation of land use and territorial issue (say, transport, housing and life chances at a particular locality) in and beyond the political system, which is in line with further opening up of the governmental administration in Hong Kong, particularly as expressed in the election campaigns (Lau and Louie, 1993),

on the one hand. On the other hand, for unconventional mode of socio-political articulation, recent findings (Chui and Lai, 1994; Cheung and Louie, 1990) also indicate that social conflicts in the 1970s and 1980s have been developing on an upward scale in terms of the mobilisation extent and readiness of citizens to take “unconventional” way of petitions, in spite of the opening up of channels for complaints. In short, it is quite obvious that people in Hong Kong, apart from expressing their political preference in election, are willing and ready to take a step further, if not for political reasons, for collective action (Lai, 1994, p. 70).

Coupled with this wave for more community participation, the historical challenge upon the political system is the emerging of a new environmental paradigm which is in favour of collective action to protect environment and in search for a sustainable way of living (Inglehart, 1990; Blowers, 1993), and certain local findings (Chan and Wong, 1994; Ng, 1991) also support this paradigmatic shift toward an environment-friendly approach for development; how territorial planning process involves such political themes for sustainable growth – as in some instances, their appeal might be more substantial (say, animal rights claimed by the eco-fundamentalists) than normal – as well as those environmentalists having other socio-political status:– presently, we have a rather culturally, ethnic and national diverse environmental groups profile. In short, their new politics articulations might challenge the established boundary of (people-centred) political arena (Dalton and Kuechler, 1990).

More problematic for Hong Kong is the fact that, historically and up-to-now, there is no transparency and institutionalised mode for public consultation or community participation exercise, as *how* and *to whom* the policy consultation exercise should be conducted and addressed to are contingent upon the goodwill of respective governmental policy branch or the departments concerned. This *ad hoc* and *case by case* approach of involving community participation in policy planning has made most concerned parties having the feeling of “All works have been done. Nothing is realised!”, which is repeatedly undermining the building of a reliable and feasible way for people participation in policy formulation. The key phase for this mode of participation might be: *Maximum Feasible Participation with Maximum Misunderstanding*. For instance, the politically charged electoral mechanism has been used to create certain (quasi-) political institutions:– District Board, Regional Council and Urban Council, and to a lesser extent the Legislative Council, which do not have a check and balance power over the administration.

Here, this problem of limiting the extent of an effective participatory planning is structurally anchored upon a quasi-political function of the administrative class governance in Hong Kong:— those making the final say over the spatial ordering of social life (in fact a political decision) are immune from any political responsibility! This contradictory socio-political set up and the related dynamics will less likely be sustainable in future, if and when people demand more influences and inputs in the policy making process; and the chaotic situation of politically overloading or ungovernability might be developed.

THE CHANGING INFORMATION AND COMMUNICATION TECHNOLOGIES

Information and Communication Technologies (ICTs) might also have challenges upon the traditional way of doing politics and planning via the representative democracy (Madon, 1994). For instance, in Taiwan, both legal and illegal radio and cable networks have successfully challenged, if not totally changed, the political communication, discourse and interest articulation in socio-political arena. Perhaps, this is the worry of the present Hong Kong government which still holds a very conservative and control position over the further liberalisation of frequency channels for citizens participatory communication network building – which is mirroring the *asocio-political* manifestation and representation of social reality in the electronic media, T.V. in particular. Yet, the élitist way of governance by technocrat (planners and experts) and (amateur) administrative class will be challenged some time in future as ICTs penetrates further into public sphere.

These challenges of Cyber or Hyper-Democracy (Wright, 1995) and in some instances, Cyber-terrorism, upon government officials and planners are new and uncommon at least in the following ways:—

- 1) Planners and administrator of our urban space have to face or expose themselves to a larger groups of formerly silent majority whom the people (not necessarily citizens in legal terms) could via phone-in, fax and other available ICTs media to voice or visualise their respective claims or protests over territorial issues. A typical case for planners in future, would be that she/he has to respond, on-line and on-air, to unknown people in radio phone-in program.
- 2) As people could get more direct assess to those involve in planning or decision making via ICTs, the officials' search for political safety and legitimacy of any planning decision via existing representative

democracy might be caught up in a paradoxical situation where views and opinions could be very different and confused, and more problematic is the trend that there is higher potential for mobilisation networking for further collective actions of NIMBY, NIOBY and NIABY.

- 3) More critical is the epistemological aspect of planning and decision making which is used to work with past (completed survey) and historical hard data, that is, their land use and transport modellings are historically anchored and mathematically coded, if not dead. Perhaps, the challenge of ICTs will be on the fluidity and mobilisation potentials of such networking which in turn prompts planners to respond to socio-cultural and ethnic diversity in this region.

From a people participatory point of view, our position on this is clear that a further liberalisation of communication channels for citizens utilisation or the development of minority (in contrast to mass) media for people participation in socio-political affairs should be of our principal means for better quality enhancement of socio-political governance in Hong Kong. Or else, the unregulated and unintended impacts of ICTs upon the governability of this region – as a legacy of traditionalism and colonial rule – will be jeopardised.

ETHICAL REMARKS ON PARTICIPATORY COMMUNICATION ON PLANNING FOR WHOM

As territorial planning has much and permanent impact upon the way people live which in turn shapes the life chance of individuals, groups and communities under consideration, and hence, planning process is in fact a socio-political struggle with different ideological appeals ranging from system maintenance to revolutionary praxis (Friedmann, 1987). For this, community participation should be discussed and actualised against this very nature of planning – it is really a matter of life or death for some people! And this put us to highlight certain ethical considerations here to end this brief.

Planning for a Hong Kong as an apex of *Growth Triangle* into 21st Century is a difficult task, particularly if and when we want some forms of people or citizens participation in this process. Perhaps, the task would be much more easily to comprehend if we really define territorial planning in socio-ethical terms, and at local (rather than a regional) scale with a strong focus on social reality – the ways in which people live yet which might not be readily convertible into existing quantitative data base or modelling.

Instrumental rational (and quantitative modelling) analysis based planning methodology and policy options are, in most cases, unacceptable as (nor comprehended by the general public) having a legitimate position in socio-political reality (Parkin, 1993). Hence, certain ethical questions pertaining to territorial planning (for whom?) should be addressed in most and all people, citizen and community participatory exercises. The fundamental principle for community participation in territorial policy is to transforming rhetoric (or the ideological appeal) of community participation into reality via meaningful communication building between policy makers and the general public. For instance, regional and territorial development strategy, for communication purpose, should be translated in terms of meaningful daily living behavioural repertoire (White, Nair and Ascroft, 1994), say, in terms of certain basic territorial rights for people – the individual's rights to work, live and maintain his/her social networks in a particular community (spatial locality), or what and how people could be benefited from such planning? Or are their own (rather than controversial concept such as “community”, “public” or “Hong Kong as a whole”) quality of living improved by this planning?

For the involvement of people and their communities in planning process, a pro-active policy for societal-governmental governance via more provisions, in terms of manpower, financial and spatial resources, for Non-Governmental Organisations (NGOs) should be adopted. For instance, consultation on territorial development options and policy initiatives should be fully financed by the governmental fund yet is to be carried out by NGOs and community groups, with necessary *planning aid*. Furthermore, some important planning decision can be made via the so-called *Ballot Box Planning* approach – the individual community or district to choose the most appropriate planning options to fit their particular needs (cf. Caves, 1992). Perhaps, these are some means through which a better community participatory planning for Hong Kong can be done in justice and equity terms, and the basic *problematique* of (any) planning should be reminded here and for the future: *Planning for Whom?*

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Population Projections

John BACON-SHONE

THE BENEFIT OF HINDSIGHT

It is by now well known that the Hong Kong Government population projections have turned out to be wrong by a substantial margin. The projection for mid-1994 (excluding Vietnamese and soldiers) published in the 1992-2011 projections was 5,816,300. The estimated actual on the same basis is 6,028,800, a difference of 212,500 or 3.7%. This seems a large error given a projection period of three years since the 1991 census. As I have never been accused of being a government apologist, the elements of the error in the projections will be considered to see what lessons can be learned – and whether the government was incompetent! However, the Census and Statistics Department should be acknowledged for their official sources and unofficial comments.

COMPONENTS OF POPULATION CHANGE

The components of population change are essentially only natural growth (births – deaths) and migration (immigrants – emigrants). As far as natural growth is concerned, we need to look at the age structure and the births and deaths given the age structure.

Clearly, the birth rate relates to the number of fertile women and also the sort of decisions they make about marriage and hence about children. We often refer to the fertility rate rather than the birth rate where the fertility rate is measured per thousand females aged 15-49. In Hong Kong, as in most if not all developed countries, as Hong Kong has now become, women are marrying later and having less children. As a result, the fertility rate dropped very fast in the 70s and 80s, despite the lack of constraints as used by the Singapore government. In the last few years, however, the fertility rate has stabilised as the late marriers rush to beat the ticking of their biological clocks.

Figure 24.1 Population in 1967-1993

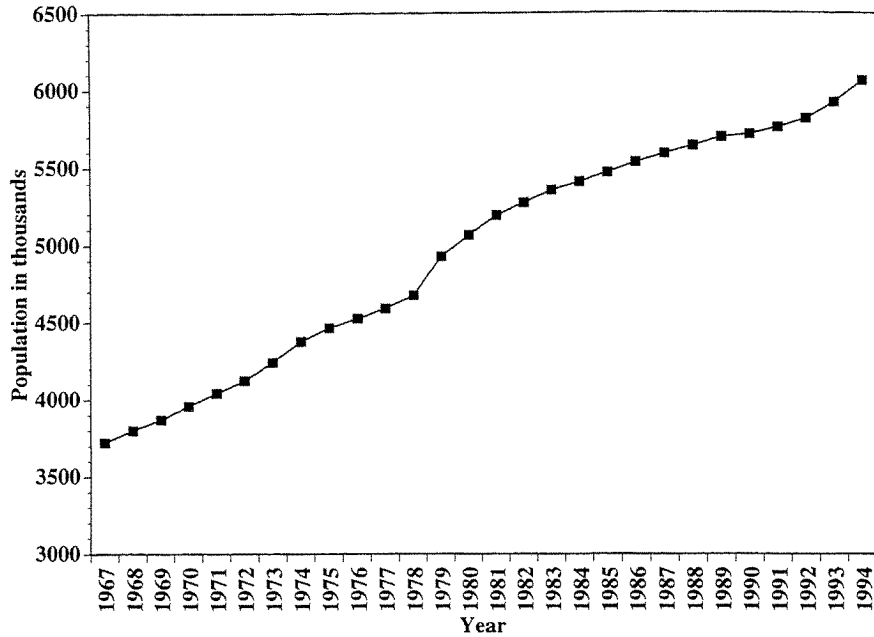


Figure 24.2 Population Growth Rates, 1967-1993

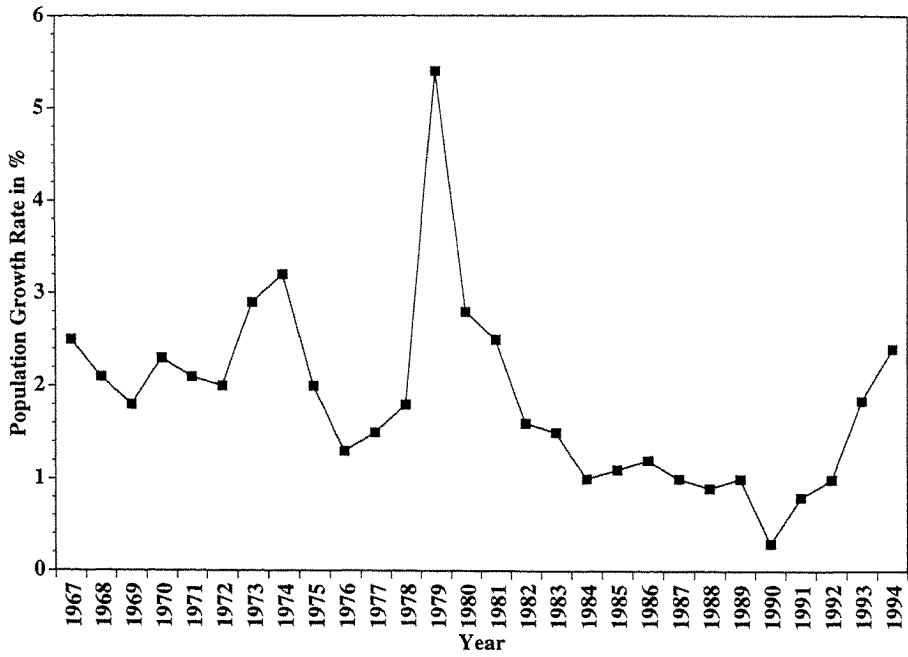


Figure 24.3 Fertility Rates, 1967-1991

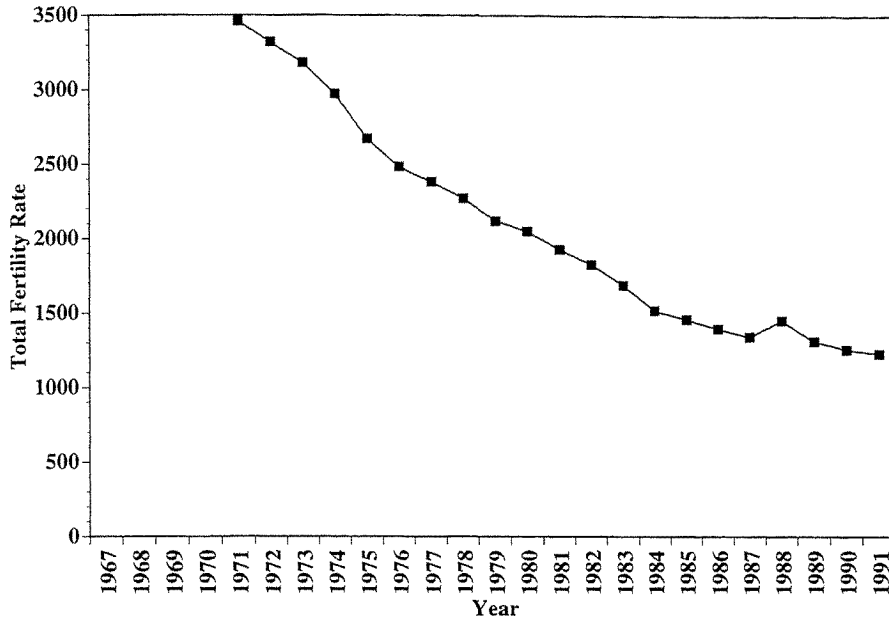


Figure 24.4 Birth, Fertility and Death Rates for Hong Kong, 1967-1993

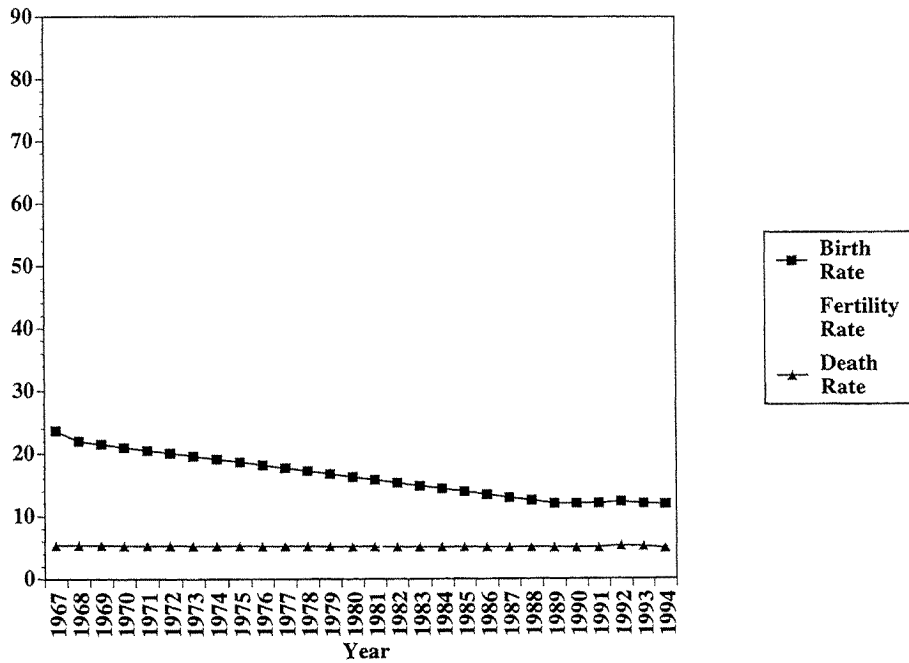
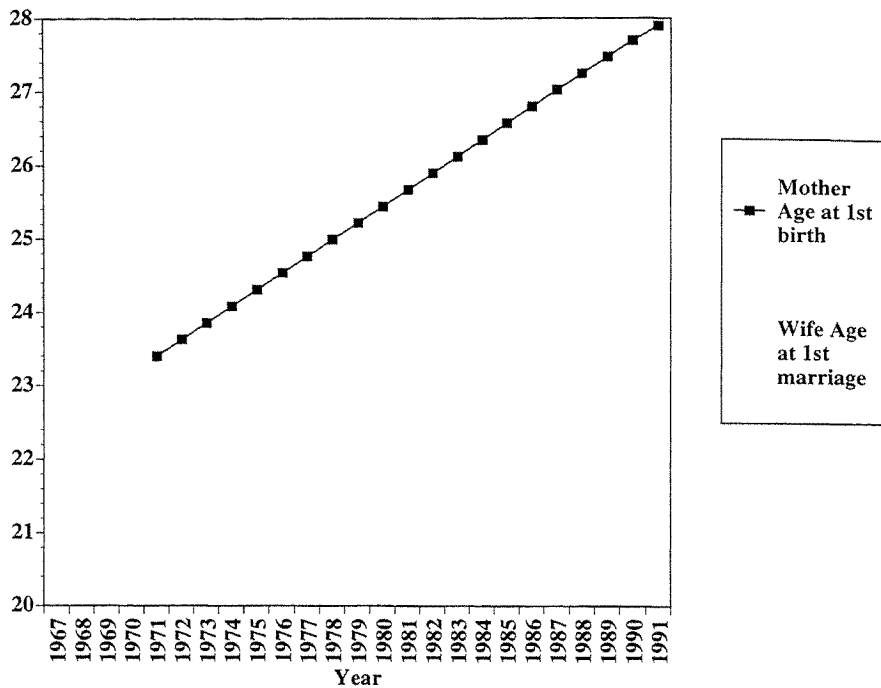


Figure 24.5 The Age of Females at Marriage and First Birth for Hong Kong, 1967-1991



The age-specific death rate is arguable the most predictable component in that it has continued to reduce with improved health care, while the overall death rate reduces very slowly due to the ageing population. The rate of improvement has however slowed down, arguably because of the increase in deaths previously related to “Western” diet and life-styles, such as coronary heart disease and cancer.

As far as migration is concerned, there are several components to consider. First is the rate of immigration from China. While this was quite stable in the past because of the quota of 75 people per day, the quota is now 105 per day, and there is pressure to increase this further, given the potentially large (but arguably unknown) number of children born to Hong Kong fathers who be entitled to enter Hong Kong in 1997. These children are important not only because of their direct effect on the population, but they change conclusions about the future birth rate if Hong Kong men are able to bring China born children to Hong Kong easily in future. Any debate about multiple wives and concubines is beyond the scope of this paper!

Secondly, is the rate of arrival of expatriates coming to Hong Kong to work. This is hard to predict given its dependence on economic conditions not only in Hong Kong or China, but other parts of the world. The relative economic boom in Southern China has made Hong Kong very attractive despite the high cost of living. In addition, the labour importation scheme has led to a substantial inflow of lower qualified workers, too.

Thirdly, one of the largest nationality groups in Hong Kong is now Filipinos, who dominate the ranks of foreign domestic helpers, although an increasing number now come from other countries such as Thailand. The increasing affluence and large work force participation rates of married women have led to an increasing number of helpers.

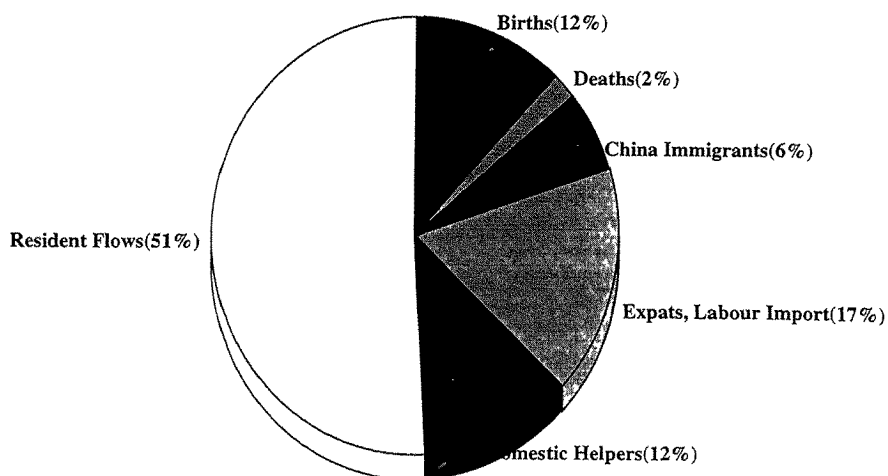
The above three sources of migration are at least reasonably easy to document month by month given the requirements for visas. The last category has the difficulty that it is not only very hard to predict, but that the underlying causes are hard to measure. This is of course the in and out flows of Hong Kong residents, some of whom go overseas to migrate permanently, to study, to obtain a passport or to work. Both the Hong Kong government and academics (such as Ron Skeldon) have done large-scale studies trying to understand and predict these population flows. The most obvious sources of information regarding underlying trends of permanent migration come from applications for certificate of no conviction and from immigration and student visa applications to consulates. However, even acceptance of an immigrant visa application is not always an accurate predictor as people may wait several years, to the last possible minute, before deciding whether or not to migrate. In addition, many people change their minds after spending several years in another country, some deciding it is better than they thought while others have been unable to find suitable employment and have little choice but to return. For those going overseas to study, there is also the question of whether they will return on completion of studies.

SOURCES OF ERROR

One key issue is the extent to which the different components were responsible for the error in the 1994 projection. The breakdown is as follows:

- a) Births: 12% of the error was due to the failure of the birth rate to continue falling.
- b) Deaths: 2% of the error was due to a slightly smaller death rate than projected.
- c) Immigrants from China: 6% of the error was due to the increased quota.

Figure 24.6 Error Components

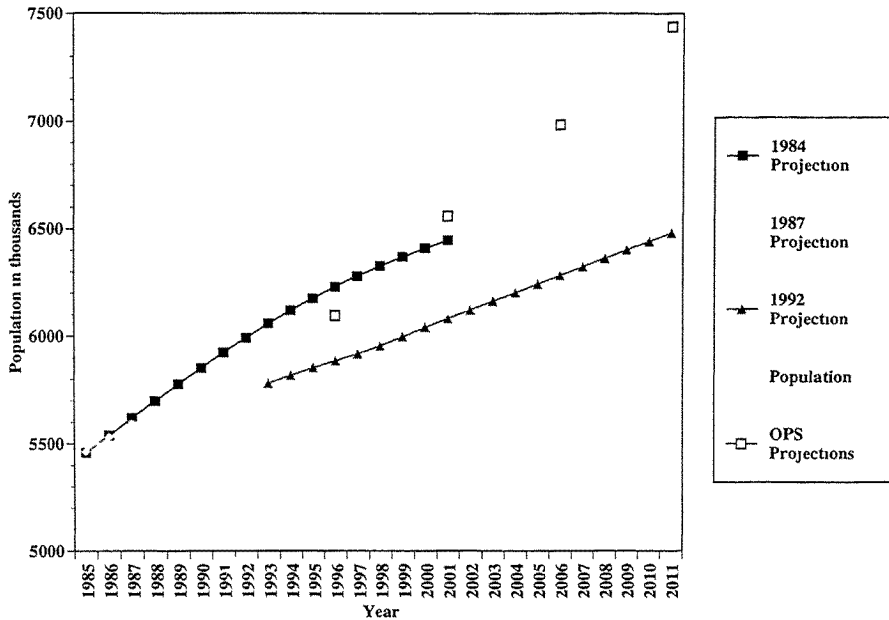


- d) Expatriates and other imported workers and visitors: 17% of the error was due to a larger than expected increase.
- e) Foreign domestic helpers: 12% of the error was due to a larger than expected increase.
- f) Resident flows: 51% of the error was due to a reduction in the net outflow due to many more returnees than expected.

In summary, every component was in error in the same direction, but more than half of the difference was due to the least predictable area, namely resident flows. Arguably, the most important lesson is to recognise the potential volatility in Hong Kong population in years to come. In fact, looking back at the last 60 years of Hong Kong history makes it clear that the population size has often been volatile!

UPDATED PROJECTIONS

While the government has not yet officially revised the population projections, the debate on the Old-age Pension Scheme (OPS) has meant that they have released revised overall projections, although without the detail normally provided. I am here ignoring the (relatively minor) issue of whether the population calculations are strictly comparable.

Figure 24.7 Population Projections and OPS Projections

As you might expect, there have been changes in the underlying assumptions. I believe that the assumed fertility rate is now assumed to increase by about 40% from 1993 to 2011, the increase in China permits has been accounted for and more optimistic assumptions for resident migration made. While the fertility rate assumptions might seem optimistic at first glance, including the current China born children suggests that the fertility rate after the arrival of these young people might be much higher.

The differences between the old and new projections are quite large, but I hope that this detailed breakdown has persuaded you that the underlying volatility is quite large and these projections may need another major update quite soon!

OTHER ISSUES

I have not even mentioned the issue of spatial population projections, as I believe these are currently based on the planners proposals rather than the statisticians projections. I would be very interested to hear the comments of planners here on whether they think this is a sensible strategy for the future.

CONCLUSIONS

It is clear that Hong Kong needs to plan on the basis of about one million more people in 2011 than previously projected less than four years ago, but that it may be necessary to amend those plans rapidly if the population grows faster or slower than projected because of changes in migration patterns.

My own suggestion is that planners should ask that the government regularly updates their population projections in public and either provide a range of estimates or, even better, an idea of the likely range of accuracy of their estimates.

Direction of Development – Metro or New Territories

Winston Ka Sun CHU

INTRODUCTION

The present Territorial Development Strategy concentrates Hong Kong's future growth in the Metro areas rather than in the New Territories. The proposal is to implement the Metroplan and to carry out extensive reclamation of Victoria Harbour to provide land for development rather than to develop the vast areas of land in the New Territories.

Following this strategy, the West Kowloon Reclamation has been completed and the Central and Wanchai Reclamations are progressing. The adverse impact of these reclamations are causing public concern. In response to this, the Town Planning Board last year requested and was provided with a plan showing the full extent of the proposed reclamations and which is now annexed to this paper (Figure 25.1).

EXTENT OF RECLAMATION

From this plan it will be noted that 661 hectares of reclamation have been completed, are being carried out or committed. A further 636 hectares of reclamation are being proposed. The northern shore line of Hong Kong Island will be pushed well into the Harbour all the way from Sheung Wan to Causeway Bay. The whole of Kowloon Bay will be reclaimed to provide 300 hectares for a new town which will accommodate 285,000 people.

The proposed reclamation at Kowloon Point will have the greatest adverse impact on the Harbour. It will become the narrowest point reducing the present width of 1500 metres to just over 800 metres. It will include the whole of the Ocean Terminal so that tourists and visitors to Hong Kong will have to disembark elsewhere, perhaps at new piers provided at Green Island or Kwun Tong. It will also be the most visually obtrusive.

Figure 25.1 Reclamation in the Victoria Harbour

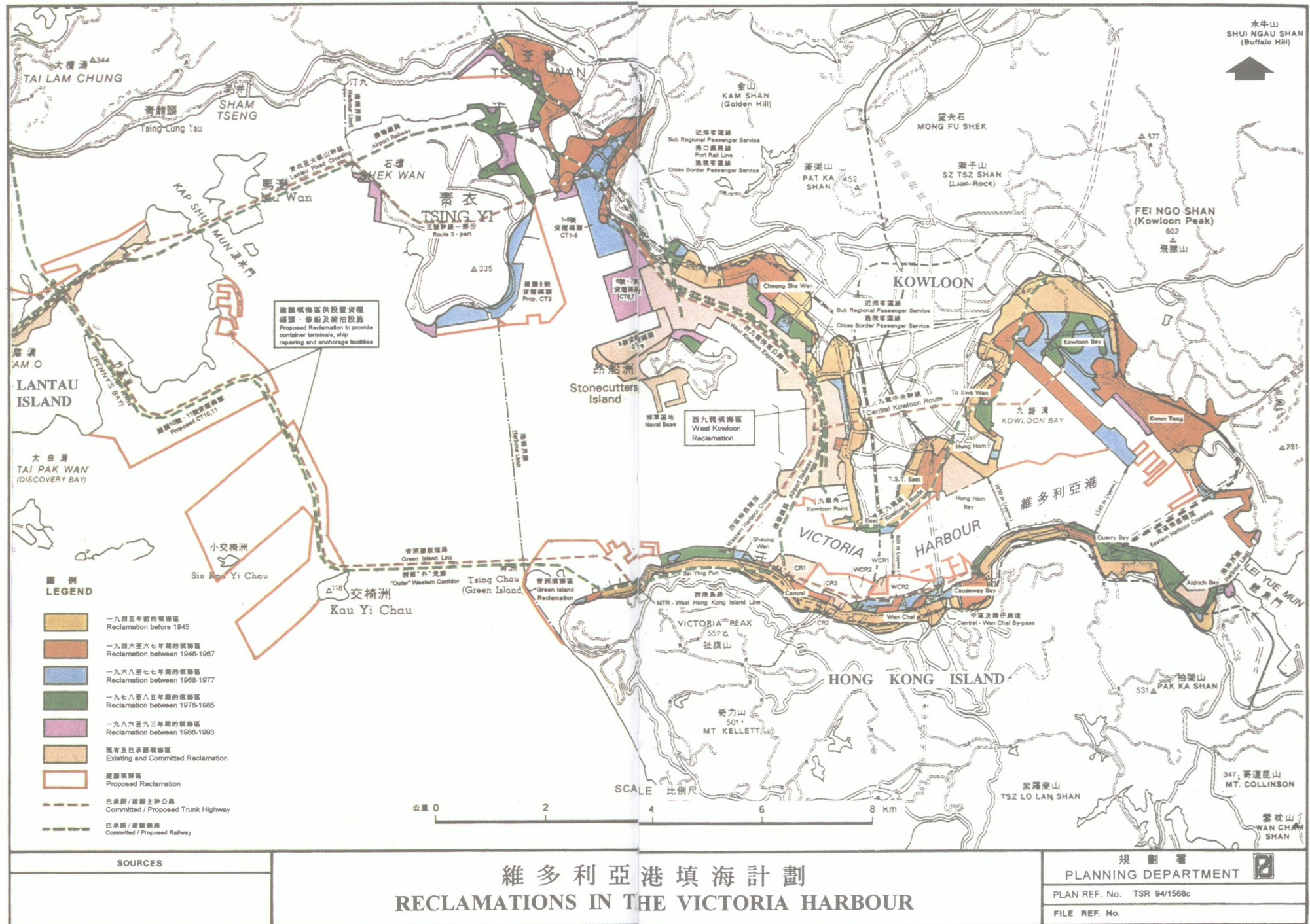
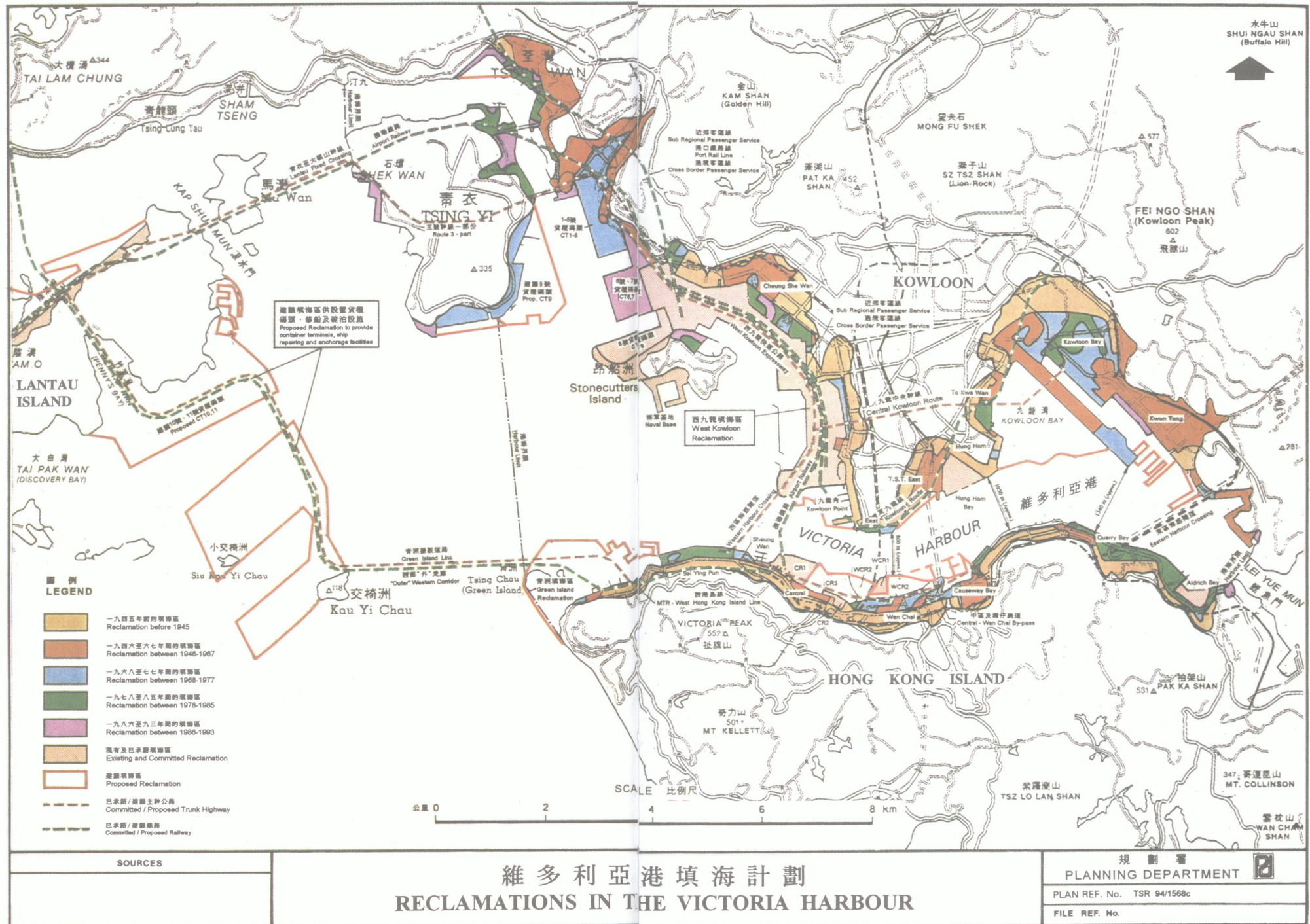


Figure 25.1 Reclamation in the Victoria Harbour



Yet the heavy price that Hong Kong has to pay for this will result in the production of only 40 hectares. To view the matter in perspective, land a thousand times the size of this is available in the New Territories.

The full list of reclamations appears as follows:-

EXISTING AND COMMITTED RECLAMATION AREAS

1) West Kowloon Reclamation	340 hectares
2) Hung Hom Bay Reclamation	35 hectares
3) Central Reclamation Phase 1	20 hectares
4) Wanchai Reclamation Phase 1	6 hectares
5) Aldrich Bay Reclamation	28 hectares
6) Container Terminal No.8	97 hectares
7) Central Reclamation Phases 2 and 3	45 hectares
8) Container Terminal No.9	90 hectares

PROPOSED RECLAMATION AREAS

9) Green Island	190 hectares
10) Central Reclamation Phase 4	18 hectares
11) Wanchai Reclamation Phase 2	52 hectares
12) South East Kowloon	300 hectares
13) Kowloon Point	40 hectares
14) Tsim Sha Tsui East	6 hectares
15) Tsuen Wan Bay	30 hectares

Total : 1297 hectares

Therefore, Hong Kong is facing a total reclamation of nearly 1300 hectares of Victoria Harbour, most of which is yet to come.

As the result of these reclamations, Victoria Harbour will be reduced to about one-half of its present width and will become a river all the way from the new West Kowloon Reclamation to the Lei Yue Mun Pass with the narrowest section between the Central Reclamation and Kowloon Point of just over 800 metres.

IMPACT OF RECLAMATIONS

The scale and intensity of such reclamation is unrivalled anywhere else in the world and no other city has ever proposed such a drastic change to its environment. The adverse impact of these alarming proposals are many.

First, Hong Kong people will lose their natural heritage for all times. The damage can never be undone. No one in the future will be able to demolish the new buildings and dig up and restore the Harbour. This cannot be justified when one of the Principal Aims of Metroplan is *“To conserve and enhance major landscape attributes and important heritage features”*. What can be a more important heritage feature than the Harbour for which Hong Kong is world famous?

Second, the tourist industry is the second most important source of revenue for Hong Kong. Without its unique harbour, Hong Kong will become a city of a different character. Another of the Principal Aims of the Metroplan is *“To enhance Hong Kong’s role as an international business, finance and tourist centre”*. Therefore one of Hong Kong’s most important tourist attractions should not be destroyed.

Third, Victoria Harbour acts as a vital city lung for the four million people who live around its shores. It provides “people space” and helps to reduce air pollution. It provides a cure for urban claustrophobia and an escape from the concrete jungle that Hong Kong is becoming.

Fourth, the Harbour is vital for Hong Kong’s role as the entrepot for Southern China. The narrowing of the Harbour will have an adverse impact on shipping. Due to the funnel effect, the tidal currents will become stronger and the water more choppy. Seven new ferry piers will be constructed on the new Central Reclamation at the narrowest section of the Harbour. This will attract marine traffic and increase the danger of collisions.

It is of course possible to reduce this danger by adopting various measures, for example, by curtailing shipping from using the Lei Yue Mun Pass. But the question must surely be, is it sensible and desirable?

JUSTIFICATIONS FOR RECLAMATION

It is therefore necessary to examine the basic justifications given by the Government for the proposed reclamations before it is too late and also to seriously consider the alternative of developing the New Territories.

One of the main justifications for reclaiming the Harbour is to provide land for community facilities including much needed open space in the Metro areas. This sounds great on paper but in fact represents a grave danger. In the future with the tremendous demand for development sites inside the Metro areas and the high value of land, it is inevitable that Government will succumb to the pressure of development. The open space on the newly reclaimed land will be rezoned for development and the laudable reasons now given for reclamation will be defeated.

A good example is Chater Garden. The Government supported the proposal by the Legislative Council to develop Chater Garden by erecting thereon an annex. Therefore, if the only open space in Central Hong Kong which serves as a vital city lung could be developed, the temptation of developing the open space on the new reclamations or selling them for development and receiving billions of dollars will be too much to resist. In the future, there will be no way for the public to hold the Government to such promises.

Besides, what can be more open than the Harbour?

The second justification for reclamation is to thin out the Metro areas and to provide housing for the people. This is not a convincing reason because only limited housing can be provided and housing on such valuable land will be too expensive for the general public. The only long-term solution is to provide housing in the New Territories so that the plentiful supply of such housing will ensure affordable prices.

A third justification is to provide land for improving the road network. Yet the proposed commercial and residential developments on the new reclamations will attract additional traffic to the Metro areas and will instead aggravate traffic congestion.

A fourth justification is to provide land for commercial office development. Again there is a better alternative. Already the present trend is for Wan Chai, Sheung Wan and Causeway Bay areas to be converted to office use. If these areas are rezoned commercial office use, there will be an ample supply of commercial office sites on Hong Kong Island.

In Kowloon, the whole of Tsim Sha Tsui and the Nathan Road corridor have been rezoned for commercial use. These will provide ample first class commercial office sites for future development.

REZONING OF URBAN INDUSTRIAL POCKETS

As regards secondary office sites, there are pockets of industrial zoning in Hung Hom, Cheung Sha Wan, Ma Tau Kok and Tai Kok Tsui. Rezoning these sites to commercial office use will provide a sufficient supply of land for the development of secondary offices. Rezoning industrial areas in San Po Kong, Kwun Tong and Kai Tak will provide development sites for tertiary offices.

Such rezoning will also solve the present problem of incompatibility of use, traffic problems generated by lorries and container vehicles going into predominantly residential areas and will have the advantage of reducing urban pollution.

What is needed in Hong Kong are industrial space to provide supporting facilities for factories in China. Such industrial activities are best located away from Metro areas closer to the border with Shenzhen. Therefore it is proposed that all industrial pockets in urban areas be relocated to the New Territories.

This will provide employment opportunities and will alleviate the problem of traffic congestion in Metro areas because less people will need to travel to urban areas for work. It will also encourage people moving to the New Territories as less travelling expenses and commuting time will be required and housing will be cheaper.

DEVELOPMENT OF THE NEW TERRITORIES

If Hong Kong were like Macau which has no hinterland similar to Hong Kong's New Territories, there may be greater justification for producing land for development by reclamation as Macau is now doing. But Hong Kong has in the New Territories a hinterland over 10 times the size of the urban areas.

Recent events have removed many of the obstacles for a more intensive development of the New Territories and have provided stronger reasons for such an approach.

First, the signing of the Joint Declaration in 1984 has removed the political and legal uncertainties of the New Territories. Politically, the New Territories will continue to be administered by the future Hong Kong Government despite expiry of its lease in 1997. The legal problem of land title which was due to expire in 1997 has been resolved and land title has been extended to 2047.

Second, the Town Planning Amendment Ordinance of 1991 has extended the Ordinance to the whole of the New Territories and brought it under town planning control.

Third, the tremendous economic growth in the Pearl River Delta Region over the past ten years necessitates faster development of the New Territories. As Hong Kong and Shenzhen become inseparable, the pressure for more intensive development is increasing.

Fourth, the Territorial Development Strategy had assumed a population of 6.47 million by the year 2011. This figure has now been revised to 7.5 million and possibly 8 million on a high growth scenario. By the middle of the 21st Century, Hong Kong's population may reach ten million. Developing the New Territories is the only solution as reclamation of the Harbour cannot accommodate such population growth.

Fifth, the Government has recently awarded the franchise to build Route 3 (Country Park Section) which will have six traffic lanes with a capacity of 150,000 vehicles per day and will reduce travelling time from Yuen Long to Kowloon to 20 minutes. When completed in 1998, this toll road will open up Yuen Long Valley and Kam Tin Valley for development and will provide the opportunity for a new town. This new town can cater for population decantation of the dense urban areas in Kowloon as advocated by the Kowloon Density Study and render the reclamation of Kowloon Bay unnecessary.

INFRASTRUCTURE OF THE NEW TERRITORIES

Government has been resisting more intensive development of the New Territories on the basis of a lack of infrastructure. Of course, if Government does not provide the infrastructure, there will obviously be no infrastructure. The money that is being spent on reclaiming the Harbour and providing the infrastructure there should instead be spent on providing the infrastructure in the New Territories.

Most of the infrastructure are already there. There is no problem with water supply as the water comes down from China and is supplied to the Metro areas through the New Territories. It has most of the electric power stations and is already covered by excellent telephone and telecommunications services. The Hong Kong Gas Company has plans to bring gas supply to 75% of the New Territories.

The main problems are sewerage and transportation. The Government should take responsibility to provide both of these without delay. The New Territories should be covered by a network of affordable public transportation, and the Kowloon Canton Railway system as well as the Mass Transit Railway system should be extended throughout the New Territories.

Such public transport should be provided on a non-profit and non-subsidy basis and should pay their own way. This will remove the main reason preventing the majority of the people from moving into the New Territories, that is, the lack of an affordable and efficient system of public transportation.

Government may immediately raise the question:- "Can Hong Kong afford to implement all these?" But facing the projected population growth, the question must surely be:- "Can Hong Kong afford not to implement all these?"

AGRICULTURAL AND RECREATIONAL ZONING

At present, while the Metro areas are over-developed with too high a population density, the New Territories is under-developed. Two-thirds of the population is crowded into only ten per cent of Hong Kong's 404 sq. miles.

One-third of the available land in the New Territories has been zoned Country Park. Of the remainder, about 65% is being zoned for Agriculture and Recreation. Only a small percentage of the remaining 35% is being zoned for housing development and most of the residential zoning is for low density housing.

It is difficult to defend the vast areas of agricultural and recreational zoning. Due to the high labour costs, agriculture is a dying occupation. No rice has been grown in the New Territories for more than 10 years. Only small-scale dairy farming manages to survive. In the face of urbanisation and resulting pollution, such dairy farming is not expected to survive for long.

Water essential for agriculture is becoming a rare commodity as Government has taken up most of the catchment areas up-stream for Hong Kong's reservoirs. The water available down-stream is becoming heavily polluted. Furthermore, the stringent regulations being imposed by the Environmental Protection Department are making dairy farming activities less economical.

Already most of the farm land are lying fallow or being used for open storage. Therefore, the present agricultural and recreational zoning can best be regarded only as holding measures and these vast areas should be treated as a land bank for future urban development.

IMPLEMENTATION OF DEVELOPMENT POLICY

The strategy to develop the New Territories can be implemented by the following ways:-

- 1) Government can encourage private developments by rezoning and up-zoning in accordance with a long-term strategic plan so that land owners will either undertake the development themselves or sell the land to developers;
- 2) Land for transportation, utilities and Government Institution and Community use can be acquired by resumption under the Crown Lands Resumption Ordinance;
- 3) Government should implement a new system of "Letters C Exchange" on

the basis of a five-to-one land exchange pursuant to which Government will acquire 5 sq. metres of agricultural land and will grant in exchange 1 sq. metre of building land. A further cash compensation can be given wherever necessary.

The previous "Letters B Exchange" system did not work well because the ratio of five to two was too high. This new system of "Letters C Exchange" will provide more flexibility in achieving the objective of a faster and more intensive development of the New Territories.

It may be easier for Government simply to overcome engineering problems and reclaim the Harbour rather than attend to the arduous task of dealing with villagers and acquiring land in private ownership. But surely the latter is the proper approach to town planning. Reclamation of the Harbour is no doubt a short cut to produce land and also more lucrative, but it is not in the interest of Hong Kong.

VISION OF THE FUTURE

Ultimately to accommodate the future increase in population, the whole of the New Territories may have to be urbanised so that Hong Kong will become a megalopolis spreading all the way from the Central District to Shenzhen. Such urbanisation of Hong Kong may not be what Hong Kong people want, but the point is that it may happen anyway.

In order to ensure that Hong Kong will still be a reasonably good place to live in, sensible plans should now be put in place to ensure that such growth will happen in a well-regulated manner and that there will be a sensitive balance between development and conservation. Certainly, the answer for this does not lie in filling in Victoria Harbour.

In the future, Victoria Harbour should continue to serve as a vital city lung for the Metro areas of Hong Kong while the Country Parks should serve as a green lung for the urban areas of the New Territories.

The southern part of Sai Kung Peninsular and the southern part of Lantau Island with their unique scenic features should be retained as the recreational areas of the future Hong Kong.

To the north-west, Mai Po should be protected as a nature reserve and conservation area so that at least some of the natural heritage of Hong Kong will be left to future generations.

CONCLUSION

The Territorial Development Strategy should look beyond the present target design year of 2011 and should examine the long-term future needs of Hong Kong. By adopting this approach, it becomes clear that in order to meet the challenges of the 21st Century, the direction of Hong Kong's future growth does not lie in the Metro areas but in the New Territories.

Planning of Hong Kong's Border Area

Anthony Gar-On YEH

INTRODUCTION

The designation of Hong Kong as a Special Administrative Region (SAR) by China in the signing of the Sino-British Joint Declaration in December 1984 that guarantees "one country, two systems" for 50 years after July 1997 is the recognition of the importance to maintain prosperity and stability of Hong Kong. The Basic Law of the Hong Kong Special Administrative Region prepared and enacted by the National People's Congress (NPC) in April 1990 was to protect the autonomy in domestic affairs of Hong Kong after it becomes a SAR in July 1997. Hong Kong SAR will be governed by an authority mainly consisted of local inhabitants. It will possess its own executive, legislative and independent judicial power, including its own court of appeal. China will assume responsibility for Hong Kong's defence and foreign affairs, while the local government will be in charge of public order. Hong Kong will continue to decide its own economic and trade policies and maintain its existing capitalistic system. The maintenance of local autonomy undoubtedly is very important for the prosperity and stability of Hong Kong. But prosperity and stability cannot be achieved if the border of Hong Kong cannot be maintained. There are 1.2 billion of people across the border of Hong Kong. Because of the big difference in income and living standards, there is a strong desire of people across the border to come to Hong Kong. The influx of a small percentage of the 1.2 billion of people to Hong Kong will cause great problems to the housing, education, welfare, employment, and transport system in Hong Kong, overturning its prosperity and stability.

The border of Hong Kong is covered under Article 116 which specifies that Hong Kong SAR shall be a separate custom territory. It is also covered under Article 22 which specifies that departments of the Central People's Government as well as provinces, autonomous regions and municipalities directly under the Central Government shall not interfere with the affairs of

the Hong Kong SAR. People from other parts of China must apply for approval for entry into the Hong Kong SAR. But is this adequate to maintain the border of Hong Kong? It may be the central government's desire to protect the border of Hong Kong as reflected in the Basic Law, but it relies on good management, tight control of the border, and co-operation of the neighbouring provinces in order to achieve this. The possibility of large influx of people from China is not without grounds. Casual discussions with people in China, particularly the younger generation in the Pearl River Delta region, will testify this. They all indicate that they will march to Hong Kong to have a taste of prosperity after Britain returns Hong Kong to China in 1997. This paper attempts to discuss the importance of the border in maintaining the prosperity and stability of Hong Kong after it becomes a SAR. It will also explore some of the planning and management issues of the border area.

IMPORTANCE OF HONG KONG'S BORDER

Broadly speaking, the border of Hong Kong covers the air, land, and sea. The flow of goods and people to Hong Kong by air is more easily controlled than by land and sea because of the need of expensive air carriers to enter Hong Kong. The entry of goods and people to Hong Kong by sea and land is very difficult to control.

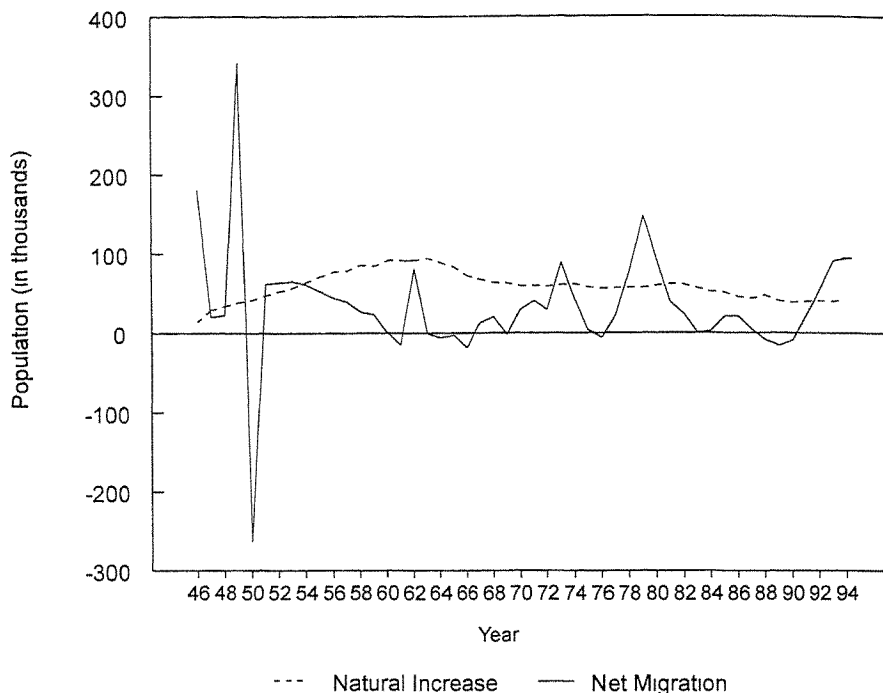
Border relationship between Hong Kong and China has changed a lot in the post-Mao period which emphasises economic development by the adoption of economic reform and open door policy in 1978. Prior 1978, particularly during the Cultural Revolution in 1966-1976, the border relationship is very tensed. The flow of goods and people was tightly controlled, especially by China. However, since 1978, the border relationship has changed from confrontation to co-operation. There is increasing flow of goods, capitals, and people from both sides. The flow of capital from Hong Kong to China has contributed greatly to the recent rapid economic development of China, especially the nearby Pearl River Delta area. Hong Kong ranks first in the source of foreign direct investment to China. Over 60% of the foreign direct investment in China came from Hong Kong (Yeh and Xu, forthcoming; Phillips and Yeh, 1990). The proportion is higher in the Guangdong province. Over 87% of the direct foreign investment was from Hong Kong. To facilitate people from Hong Kong to go to China to travel and invest, a special Home Visit Permit (*huixiang zheng*) is issued to Hong Kong residents with Chinese origin. This allows them to go to China as many times as they want without the need to apply for a visa. As a result,

the number of people going from Hong Kong to China has grown tremendously since 1978.

The control of people coming to Hong Kong has always been tight. The occasional relaxation of the border control has caused much disruption to Hong Kong's development. The present high living standard in Hong Kong has been achieved through spectacular economic development on the one hand and low population growth rate on the other. Any sudden major increase in immigration will lower its living standards.

Natural increase in Hong Kong is under controlled with a falling birth rate and a stable death rate. The major component of its population growth is from immigration. Hong Kong's population growth is often inflated by sudden influxes of migrants from China (Figure 26.1). China has been a predominant source of legal and illegal immigrants of Hong Kong (Skeldon, 1986). Although immigration from China has been generally under control since the establishment of the People's Republic of China in 1949, there have been occasional tides of migrants from China as a result of its changing political climate. The population has increased sharply from 0.6 million in 1945 to 2 million in 1951, an increase of 40% per annum. It was estimated that over one million people migrated to Hong Kong from China between 1949 and 1950 because of the change of regime. This led to the widespread of squatters and poor housing conditions in the Hong Kong. Relaxation of the border control by the Chinese Government and the failure of the Great Leap Forward in China resulted in over 70,000 people crossing the border to Hong Kong. The recent tide of immigration occurred after the downfall of the "Gang of Four" in 1976, which led to much freer population movement in and out of China. Pressure of immigration was further exacerbated by Hong Kong's philanthropic "touch base" policy which allowed illegal immigrants from China to stay in Hong Kong if they were able to reach the urban areas (Lui, 1983). The number of captured illegal immigrants increased sharply from 1,800 in 1977 to 82,000 in 1978 and a record high of 89,000 in 1979. Although the "touch base" policy was abandoned in October 1980 and a policy of immediate repatriation of illegal Chinese immigrants was adopted to discourage further illegal immigrants from China, Hong Kong experienced a sudden sharp increase in population in the 1980s due to this tide of illegal immigration. In 1979 alone, there were 170,000 legal and illegal immigrants from China, who caused a 3.5 per cent increase in population, a growth rate that is much higher than the average annual growth rate of 1.6 per cent. The sudden increase in population although has increased the supply of skilled and semi-skilled labour, it upset the plans for the provision of social facilities, especially public housing.

Figure 26.1 Natural Increase and Net Migration, 1946-1994



Source: Census and Statistics Department

This can be reflected, to some extent, by the increase of squatter population from 300,000 in 1978 to 750,000 in 1980 (Hong Kong Housing Authority, 1981). Such an unpredicted wave of immigration was given by the governor in 1981 as one of the reasons for not achieving the objective of improving the housing conditions in Hong Kong (Fong and Yeh, 1987). Fortunately, the influx of illegal immigrants from China is now largely under control with the co-operation of China. After 1997, the number of legal migrants that can be allowed to enter Hong Kong can be carried out through the granting of entry visa that can be discussed between the SAR government and the central government. But the illegal immigration is very difficult to control without the co-operation of the central government and nearby provinces. To maintain its prosperity and stability, it is important for Hong Kong to able to maintain its border and control the number of immigrants, both legal and illegal, into Hong Kong.

BORDER SCENARIOS

The designation of Hong Kong as a SAR for 50 years is a temporary measure to deal with the great discrepancy in the economic and political systems, income, and living standards between Hong Kong and China. In the long run, Hong Kong has to become part of China. At that time, the border of Hong Kong will become a city boundary, like other city boundaries which do not have any borders. Until this happens, the border of Hong Kong has still to be kept otherwise the whole purpose of designating Hong Kong as a SAR will be defeated.

Although the control of people from China entering Hong Kong is protected by the Basic Law, it does not say how permeable is the border. A number of border scenarios have been discussed in Shenzhen, the Special Economic Zone abutting the border of Hong Kong. The Special Economic Zone (SEZ) of Shenzhen was designated in 1979, soon after the adoption of economic reform and open door policy in 1978 (Wong and Chu, 1985; Yao and Leung, 1986). It is the fastest growing SEZ and city in China because of its locational advantage of being right next door of Hong Kong, the largest source of foreign investment to China. It has developed from a small border town of less than 70,000 people in 1978 to a large city of over 1.5 million in 1994. Apart from the border between Hong Kong and Shenzhen, a second border has been established at the northern part of the Shenzhen SEZ to control the flow of people from entering into the SEZ. People from other parts of China has to obtain a border pass before they can enter Shenzhen. Shenzhen sees the advantage of being more integrated with Hong Kong. A number of border scenarios have been discussed and they can be grouped into three main ones - status quo, increasingly permeable border between Hong Kong and Shenzhen, and abolishment of the border between Hong Kong and Shenzhen.

Status Quo – The border between Shenzhen and Hong Kong remains at it is with little changes.

Increasingly Permeable Border Between Hong Kong and Shenzhen – The border between Hong Kong and Shenzhen still exist but it will be more relaxed than present. People from Hong Kong will be allowed to go to Shenzhen freely without the need of going through the immigration and custom counters. They only need to use their Home Visit Permits when they go outside Shenzhen to other parts of China. Flow of people from Shenzhen is still controlled and they need to obtain a pass to come to Hong Kong but

this pass will be more easily obtained than present. Similar to people, goods crossing the border will be monitored but not checked. However, they have to go through custom if they go outside Shenzhen to other parts of China.

Abolishment of the Border Between Hong Kong and Shenzhen – this scenario is more drastic than the first two. Shenzhen SEZ will be merged with Hong Kong to form one large SAR. Although it is understood that the boundary of Hong Kong is the existing border, that is south of the Shenzhen River, comprising land that were ceded and leased to Britain in the 19th century, it is not explicitly stated in the Basic Law. Under this scenario, the territory of Hong Kong will be expanded and merged with the Shenzhen SEZ to form a large SAR, pushing its border from the Shenzhen River north to the northern second border of Shenzhen SEZ. People of Hong Kong and Shenzhen will become citizens of the same SAR and can move and live freely from one place to another. This scenario is the most unlikely scenario in the immediate future because of the great discrepancy in life style and public services and facilities between the two cities. If this happens, the public services and facilities of Hong Kong which are planned mainly to cater for the needs of the people in Hong Kong will not be able to cope with the sudden addition of 1.5 million or more population from Shenzhen. Although there is a border at the northern part of Shenzhen, the 85 km. border is very long and difficult to keep. With the great discrepancy in living standards and income between Hong Kong and the rest of China, it is not difficult to envisage what will happen if Hong Kong integrates with Shenzhen and uses the northern second border of Shenzhen as its border. Millions of people from other parts of China will flood through this long border to Hong Kong. Many large cities in China are having difficulties in controlling the influx of floating population¹. Shenzhen already is having difficulty in controlling the influx of floating population. It is estimated that the floating population is of similar size than its permanent and temporary population. However, apart from the possibility of abolishing the SAR in total, this may be one of the possible scenarios when the SAR status of Hong Kong is subject to review at the time when the 50 years status quo period after 1997 is about to expire.

The status quo, an increasingly permeable border between Hong Kong and Shenzhen, or something in-between is the most likely scenario of the border of Hong Kong when it becomes a SAR in 1997. In fact, a more permeable border between Hong Kong and China is expected even without Hong Kong becoming a SAR in 1997 because of the increasing economic interactions

between Hong Kong and China. As experienced in North America and Europe, the relaxation of the border control and "vanishing border" is the outcome of economic rather than political needs (Hansen, 1983). The borders between Canada and U.S.A., U.S.A. and Mexico, and many countries in Europe are very relaxed, allowing relatively free flow of goods and people. The main concern is the stopping of criminals and smuggling. The most extreme form is the Schengen Agreement in Europe which threw open the internal borders of Belgium, France, Germany, Luxembourg, the Netherlands, Portugal, and Spain in March 1995. The vanishing border is a worldwide phenomenon in the era of transnational capitalism, international division of labour, and development of global cities. Hong Kong and China is affected and benefited from these pattern of economic development. Many Hong Kong industries are benefiting from the cheap labour and land in the Pearl River Delta and the Pearl River Delta is benefiting from the capital, technology, management skills, and entrepreneurship of Hong Kong. Many people in Hong Kong are also buying houses and property in the Pearl River Delta. The border of Hong Kong may not be as extreme as the Schengen Agreement in Europe which abolish the internal borders altogether, it will be more permeable than before because of the needs of the people and the economy for more cross border traffic of people and goods. The increase in cross border traffic will inevitably affect the transport and land use planing system in Hong Kong.

CROSS BORDER TRAFFIC

Even without 1997, Hong Kong's tie with China is expected to increase if the open door policy of China continues. The economic relationship between Hong Kong and China has increased tremendously since the signing of the Joint Declaration in 1984. China's adoption of an open door economic policy since 1978 has led to rapid increase in economic links between Hong Kong and China. Since 1985, China has become Hong Kong's largest trading partner. Merchandise trade between Hong Kong and China has grown by 39% per annum in 1978 and 1988 (Hong Kong Government, 1990). China is now the large market for Hong Kong's re-exports, and second largest market for Hong Kong's domestic exports. China is also the largest supplier of goods to Hong Kong. Hong Kong also overtook Japan in 1987 to become China's largest trading partner and accounted for 27% of China's overall external trade. China has, since 1979, been Hong Kong's largest re-export market as well as the largest source of goods re-exported through Hong Kong. In 1988, nearly 80% of Hong Kong's re-exports were related to

Table 26.1 Outward Processing of Hong Kong in China

Year	Domestic Export Trade (Outward Processing to China) (HK\$ million)	Re-export Trade (Outward Processing to China) (HK\$ million)
1988	7,921	10,725
1989	31,962	44,906
1990	36,418	55,496
1991	40,369	73,562
1992	44,271	97,368
1993	45,141	115,037

Source: Hong Kong Census and Statistics Department (1994)

China, either as a market or as a source of supply. Besides merchandise trade, various forms of invisible trade between Hong Kong and China also increased. These included tourism and travel services, transport services, financial services, and professional and other business services (Lau, 1986).

Hong Kong is the most important source of foreign investment in China. Many Hong Kong manufacturers have established compensation trade and outward processing arrangements with Chinese enterprises, especially those in the Pearl River Delta region and the Shenzhen SEZ. The growing economic relations between Hong Kong and China have added a new dimension to Hong Kong's economic growth.

The major form of foreign participation and investment in manufacturing in China is in the form of outward processing which take advantage of the cheap labour of China. Chinese partners provide the plant, labour, water, electricity and other basic facilities, whereas the foreign investor supplies the machinery, materials, product design, and is responsible for marketing. Pearl River Delta has significantly changed Hong Kong's traditional sub-contracting relationship between small, medium and large factories. There is a new spatial division of labour between Hong Kong and the Delta (Sit, 1989). The sub-contracting and outward processing to China is increasing sharply. Table 26.1 shows the sharp increase in outward-processing to China between 1988 to 1993 in terms of both domestic exports and re-exports. The nearby areas of Hong Kong in the Pearl River Delta has urbanised very rapidly as a result of foreign investment and outward processing of Hong Kong. A large megalopolis is emerging in the Pearl River Delta. What is happening in the Pearl River Delta is similar to the experience in other

border areas, such as the United States – Mexico border (Hansen, 1983, Herzog, 1991) and the Growth Triangle of Johor-Singapore-Riau (Lee, 1991). Such development of transnational urbanised areas along national borders is the outcome of the era of global cities where there is a frequent movement of population, industry, and capital to international boundary regions (Herzog, 1991). Urbanisation over the border is an extension of the functional role of the urban system where the investment originates (Suarez-Villa, 1985).

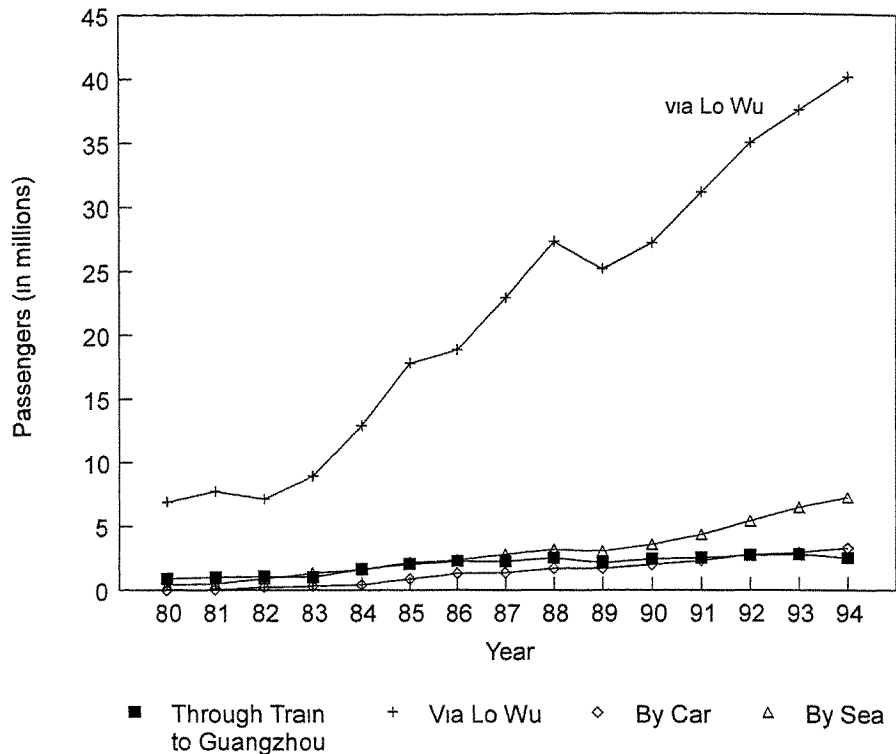
Hong Kong is providing a hub function to China. Apart from providing transshipment services by the world's second largest and highly efficient container port in Kwai Chung, Hong Kong also has an efficient banking system to handle letters of credit for China. Such economic ties with China has increasing impact on urban development in Hong Kong, which is evident in the recent construction of the new China Ferry Terminal and headquarters of the Bank of China, and the expansion of the Kwai Chung container port. Chinese capital is playing an increasingly important part in property and infrastructure development in Hong Kong.

Communication technology is often regarded as space-extending and allow individual and firms to function within a geographically larger set of boundaries (Brotchie, 1984; Kellerman, 1984). Communication technology has helped to decentralise economic activities and population away from the city centre of the western cities. The improvement in telecommunication in the Pearl River Delta, the increase in economic ties between Hong Kong and the Pearl River delta, and the big difference in house price have made many Hong Kong people to buy houses in the Pearl River Delta. Some even live in Shenzhen and commute to work in Hong Kong. In 1992, 69,561 housing units were being marketed in Hong Kong and about 30,000 housing units were sold in Hong Kong (Ming Pao, 4 January 1993). This is a huge amount compared to the 26,222 domestic units completed in Hong Kong in the same year (Rating and Valuation Department, 1992).

The amount of travellers has increased tremendously since 1983 when the investment from Hong Kong to the Pearl River Delta begin to take off. Travellers across Lo Wu border has increased from less than 10 million to 35 million in 1992 (Figure 26.2). Vehicles crossing the border also increased from 1 million in 1983 to 6.5 million in 1992 (Figure 26.3).

To prevent illegal immigration, a long fence has been constructed along the border. The border used to be patrolled by the army but border patrol has been shifted to the police in three phases from 1990 to 1992. There are at present four border check points - Sha Tau Kok, Man Kam To, Lo Wu, and Lok Ma Chau (Huanggang). Lo Wu is the largest check point. It is for train

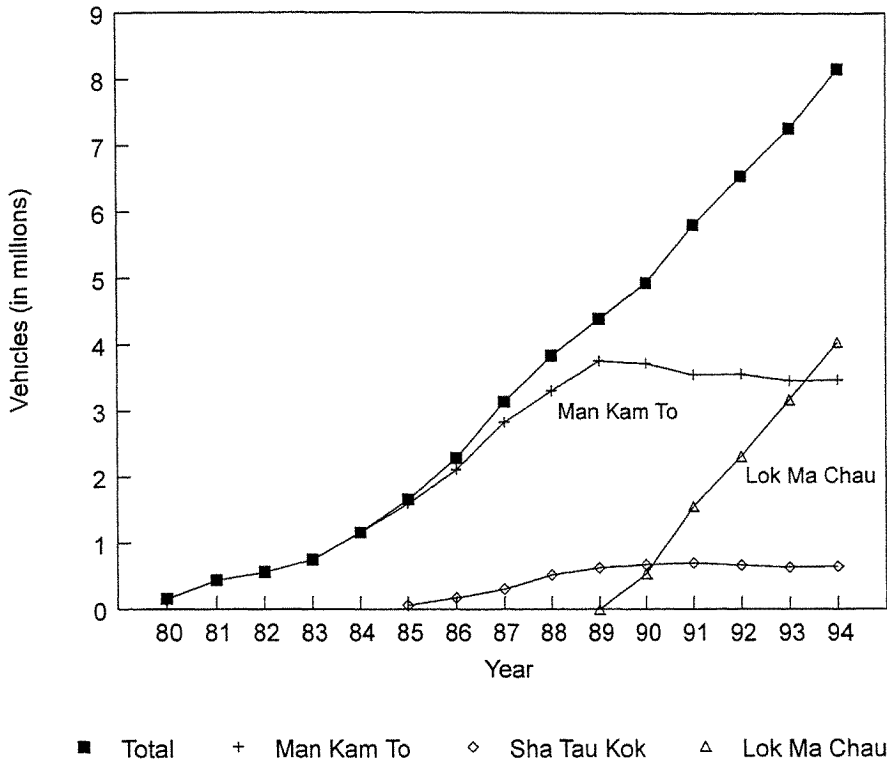
Figure 26.2 Cross Border Passengers



passengers and goods. The check points at Sha Tau Kok, Man Kam To, and Lok Ma Chau (Huanggang) are vehicle check points. The Lok Ma Chau (Huanggang) is a relatively new check point that opened in 1989. Border licences are given to vehicles using the check points and vehicle can only use the designated check point on the licence. Some vehicles using Man Kam To were diverted to Lok Ma Chau (Huanggang) after it was opened. The Lok Ma Chau is the largest vehicle check point and it is opened for 24 hrs. operation since November 1994. As this check point is close to the new city centre of Futian, to minimise noise pollution, only vehicles which origin from or go to areas outside Shenzhen, such as Guangzhou and Dongguan, are allowed to use the check point after mid-night.

As Shenzhen is a border town, much of the traffic going through the border and the city is external traffic. It is estimated that over 55% of the

Figure 26.3 Cross Border Vehicles



cross border passenger trips are passing through Shenzhen SEZ to other places in the Pearl River Delta (Wong, forthcoming) (Table 26.2). The increasing entrepot role of Hong Kong has led to a major increase in cross border freight traffic. There is not enough bypasses to divert traffic that needs to go to places outside the SEZ from the border away from the city centre, causing traffic congestion in the city.

Most of the cross border trip is related to business. 60% of the passenger trips from Hong Kong are business trips (Wong, forthcoming). Because of the control of Hong Kong, Cross border traffic is mainly by people and vehicles from Hong Kong. Only around 6% of the cross border passengers are from China, the rest are from Hong Kong (Wong, forthcoming). Passengers have little choice on the use of transport modes to the border crossings. Train is the only transport mode from Hong Kong to

Table 26.2 Distribution of Cross Border Passenger Trips

Year	Shenzhen SEZ	Other Areas of Shenzhen	Pearl River Delta	Other Areas of Guangdong and China	TOTAL
from Hong Kong to	54.67%	14.98%	27.82%	2.53%	100.00%
to Hong Kong from	53.30%	16.91%	27.19%	2.60%	100.00%

Source: extracted from Wong (forthcoming)

Lo Wu. However, they can have a choice of trains, buses, cars, minibuses, and taxis after they cross the border to Shenzhen. Vehicles are the only mode of transport for the Sha Tau Kok, Man Kam To, and Lok Ma Chau (Huanggang) check points.

PLANNING OF BORDER AREA

The need for a more permeable border between Hong Kong and Shenzhen and Guangdong was considered an important factor for Hong Kong to be economically successful in the future (Business and Professional Federation of Hong Kong, 1993). A thorough review of policies and practices related to border traffic should be carried out with input from Hong Kong businesses and institutions and the creation of a separate unit responsible for cross-border affairs was considered necessary to create a commercially unobstructed border for maintaining high economic growth in Hong Kong.

The increase in trade and cross border traffic was beginning to emerge at the time of the preparation of the Territorial Development Strategy (TDS) which started in 1980 and finished in 1984 (Hong Kong Government, 1985). In view of the shortcomings of piecemeal planning and development, the Land Development Policy Committee in 1980 considered it necessary to formulate a comprehensive long-term development strategy for Hong Kong in the 1990s and up to 2001. The Territorial Development Strategy (TDS) is not only concerned with meeting the population requirements for land, services and facilities but also pays regards to sustaining the growth of key economic activities in Hong Kong (Hong Kong Government, 1985). The decision to formulate the Territorial Development Strategy is in part attributable to the recognition of the lack of co-ordination between urban

development and transport provision, especially in the case of new towns where transport is still inadequately provided. The TDS took four years to prepare and was completed in 1984. The objective is to determine the long-term development potential of the five subregions in Hong Kong and consequently recommend a preferred development strategy on subregional basis.

In the TDS study, the future location of the international airport was recognised as a significant factor affecting the future development pattern of Hong Kong. While a number of development options concerning future airport location were considered, doubts were cast over the possible relocation of the existing airport in view of the uncertain political future of Hong Kong in 1984, a time when Britain was negotiating with China on the future of Hong Kong which led to the signing of the Joint Declaration. As a result, two alternative long-term growth patterns based on the existing airport location at Kai Tak were produced. Both options saw a need for major improvements and extensions of the existing planned highways and rail systems. Each represented an end-state plan for the year 2001 and beyond then fundamental changes in basic assumptions might be necessary. In view of the uncertainty of Hong Kong's political and economic future, a common-component approach was used to identify in the two options common projects where detailed planning and associated works could be started soon in order to sustain the momentum of urban development. This led to the preparation of the Metroplan² after the decision to relocate the airport to Chek Lap Kok in 1989.

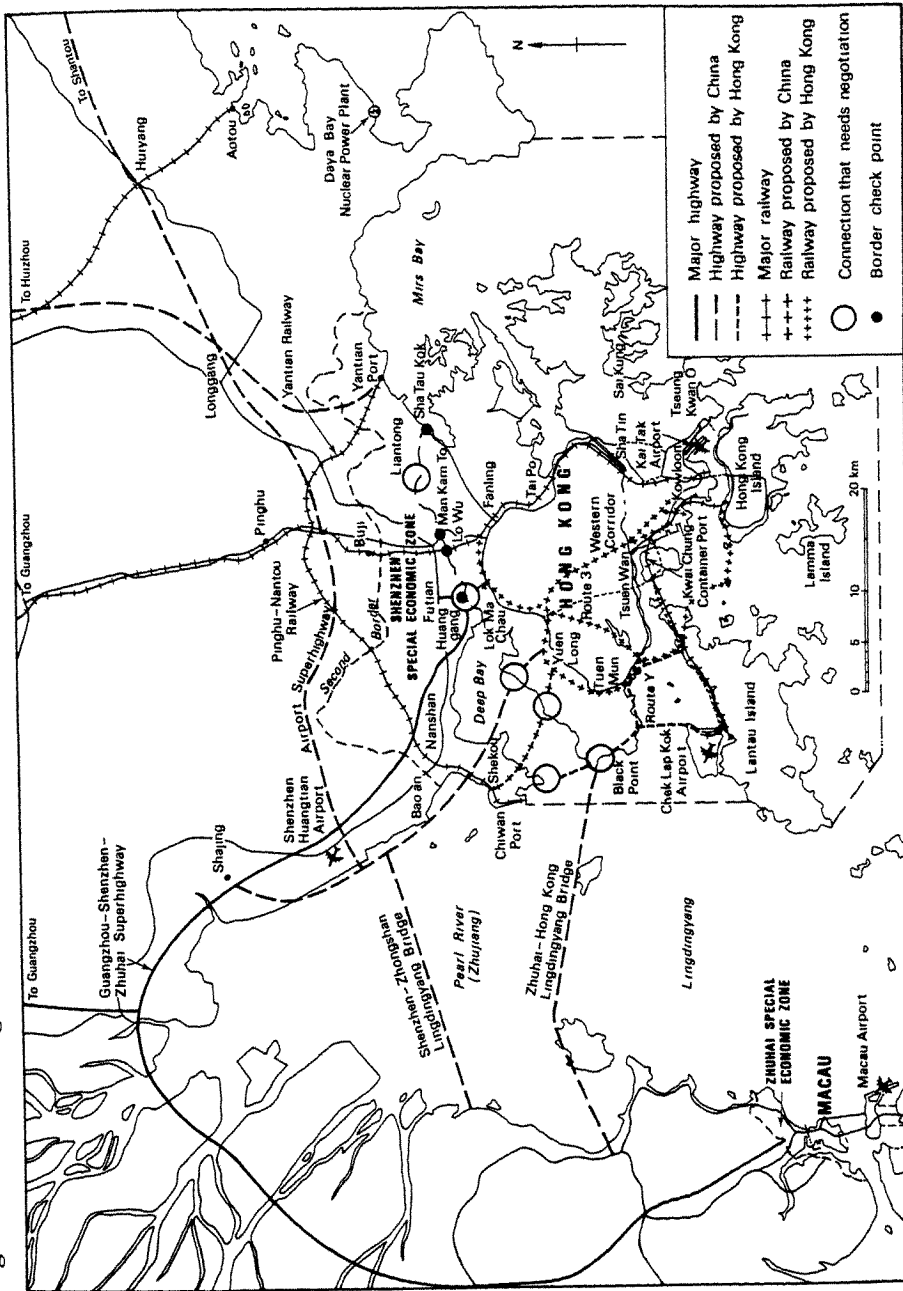
Since the adoption of the Territorial Development Strategy in 1984, there has been a major increase in cross border traffic. The government decides to have a major review of the strategy in 1990. A consultation paper, *Territorial Development Strategy Review – Development Options* was published in 1993 for public consultation (Planning Department, 1993a and 1993b). The review was needed because the location of the key infrastructure of the airport and port which was not determined in the TDS of 1984 has been determined. In 1989, the Port and Airport Development Strategy (PADS) decided to relocate the airport from Kai Tak to Chek Lap Kok and to expand the port facilities on North Lantau and in the Western Harbour Area. The review was needed also because of the major increase in economic interactions and cross border traffic between Hong Kong and the Pearl River Delta. There has been a sharp increase in truck traffic between Hong Kong and Shenzhen. A long-term planning framework for the provision of land and infrastructure that take into considerations the increase in cross border traffic is needed (Planning Department, 1993a).

The recognition of the importance in the linkage with the Pearl River Delta has been fully acknowledged in the review of the TDS. It is one of the two major principles in the formulation of the TDS. The other one is the direction of growth within the Territory which is also affected by the linkage with the Pearl River Delta. The development scenarios are also closely related to the interactions and development of the Pearl River Delta. Scenario A assumes the PRD region as Hong Kong's primary economic hinterland while Scenario B includes both the PRD and the inner provinces of China as the economic hinterland. Under scenario A, two further sub-scenarios were developed - steady growth (AI) and high growth (AII). Both sub-scenarios assume growth in Hong Kong and the Pearl River Delta. The difference is degree of reliance of the Pearl River Delta on Hong Kong. The steady growth scenario (AI) assumes that there would be considerable growth in the Pearl River Delta but the relationship between Hong Kong and the Pearl River Delta would be more as equal partners. The high growth scenario (AII) assumes that Hong Kong will be a primary centre of development in the Pearl River Delta. It will be the key trading outlet, entrepot and financial centre of the region. Scenario B assumes that Hong Kong's economic ties will go beyond the Pearl River Delta and reaches the inner provinces of China, providing entrepot services, and acting as a major trading outlet and source of foreign investment. This scenario is considered as the extra high growth scenario by adding 20% allowance over the high land use and transport demand in Scenario AII (high growth). From these scenarios, a range of land use and infrastructure requirements will be established. Cross border transport demands range from relatively low in the Steady Growth Scenario (AI) to extra high in the Extra High Growth Scenario (B). The increase in cross border traffic will not only affect the border but also the internal traffic as well. New internal transport networks and cross-border linkages are proposed on the basis of the updated findings of transport studies, such as the Railway Development Study. Route Y which would link the proposed Lantau port facilities via Tuen Mun Road southern bypass, Tuen Mun West to Ma Wan area in Shenzhen is considered under the High Growth and Extra High Growth Scenarios. The Route Y was first recommended under the Updating of the Second Comprehensive Transport Study (CTS-2).

Cross Border Proposals

To anticipate future increase in cross border traffic, each side along the border is proposing new transport linkages (Figure 26.4).

Figure 26.4 Existing and Proposed Cross-Border Transport Links



a) Proposals from Hong Kong

The Route Y was proposed to link the proposed Lantau port facilities via Tuen Mun Road southern bypass, Tuen Mun West to Ma Wan area in Shenzhen is considered under the High Growth and Extra High Growth Scenarios of the Territorial Development Strategy (TDS). Under the Railway Development Strategy (Transport Branch, 1993 and 1994), the Western Railway Corridor would provide a new arterial link to the border. It will provide a port rail line to the container port at Kwai Chung, a long distance passenger service to China, and a sub-regional passenger rail link between the North West New Territories and the urban area. The new railway is considered important for the future development of the container port of Hong Kong which would carry standard containers directly to the container port of Hong Kong without intermediate handling. This can help to reduce pressure on the road system caused by freight traffic. It can also divert some of the passengers using the congested check point at Lo Wu, which is reaching its capacity, to the proposed border crossing at Lok Ma Chau. This will relieve the existing congested Lo Wu terminal and provide easier access to Huanggang and the Futian new city centre. The Western Corridor is one of the priority area of the Railway Development Strategy and it is hoped to be completed in 2001.

b) Proposals from Shenzhen

To meet future traffic demand, Shenzhen is at the same time preparing their own transport plan which consider what is advantageous to Shenzhen. A Shenzhen-Hong Kong Western Corridor Project was proposed. The project consisted of two parts – the Shenzhen-Hong Kong Highway and the Shenzhen-Hong Kong Railway. The Shenzhen-Hong Kong Highway requires the construction of the Deep (Shenzhen) Bay Bridge, connecting Yuen Long with Dongjiao and then linking to the proposed Airport Superhighway, the Shenzhen Airport, and the Guangzhou-Shenzhen-Zhuhai Superhighway. The second project is the Shenzhen-Hong Kong Railway which requires the construction of the Deep (Shenzhen) Bay Railway Bridge connecting Tuen Mun with Shekou, and linking with the Pinghu-Nantou Railway which links up with the Guangzhou-Shenzhen Railway. The connection points of the road and railway bridges are very different from what the Hong Kong side has envisaged. The need of the Shenzhen-Hong Kong Western Corridor Project is understandable because Shenzhen would like to divert traffic away from Lok Ma Chau which is right in front of the new city centre at Futian. They hope to have a city centre which is less congested than Lo Wu which is

the major transport hub. They strongly oppose the proposal of the Hong Kong Government of using Lok Ma Chau as the second railway connection point for freight transport.

There is also a plan to relieve the congestion of the road check point in Man Kam To by opening up a new road check point at Liantong.

c) Proposal from Zhuhai

To cut short the distance by road between Zhuhai and Hong Kong and Shenzhen, the Lingdingyang Bridge has been proposed by the Zhuhai Government for a long time since the early 1990s. It is a long bridge that will connect Jinding Town in Zhuhai, Qi'ao Island, Inner Lingding Island, and Black Point near Tuen Mun in Hong Kong. The total length of the six-traffic-lane bridge is 40 km. It will cut short the need to go round the Humen Bridge connecting the Guangzhou-Shenzhen-Zhuhai Superhighway with the Eastern Guangzhou-Zhuhai Highway. This bridge will help the development of Zhuhai, especially the Zhuhai Airport and Gaolan Port. However, the proposal may cause severe traffic congestion at the Hong Kong side by traffic passing through Hong Kong to Shenzhen.

There are many disagreements with the proposals by the three sides. The disagreements are mainly on 1) whether there is a need for the connection; 2) whether the other side can absorb the traffic created by the new crossing; 3) timing of the completion date of the new crossing; and 4) nature of the crossing, whether it should be road or rail.

A border liaison channel at an operational level for government departments in border matters, such as the immigration, custom, and police departments, has been established since the early 1980s. Such channel only deals with day to day operation of the border, such as the border opening hours, number of counters to be added during peak period in Christmas, Chinese New Year, and Easter holidays. It cannot deal with the very complicated and political issues of new cross border crossings and infrastructure. A Sino-British Infrastructure Co-ordination Committee proposed by China was set up in December 1994. It will identify and set priority of discussion on issues concerning the development of air, sea, and land facilities straddling the border. Some of the immediate issues are the plan by Zhuhai authorities to build a bridge linking it with Tuen Mun; plan by Shenzhen to build two bridges across the Deep Bay; co-ordinating the use of air space by the new airports in Shenzhen, Hong Kong, Macau, and Zhuhai; and solving problems of proposed new cross-border rail links. The Committee is not a decision making committee but a formal channel for

exchange of views and information and for seeking common view on the co-ordination of cross border infrastructure to and from Hong Kong. Membership of the British side includes the Secretary for Planning, Environment and Lands, Secretary for Transport, Secretary for Economic Services, Director of Planning, Director of Highways, Deputy Secretary for Constitutional Affairs, and Assistant Political Adviser. China members include Head of the Economic Department of the Hong Kong and Macau Affairs Office, Deputy Head of the Economic Affairs Department of the Xinhua (New China) News Agency, and officials in charge of state planning, aviation, energy resources, railway, and transport co-ordination. The Committee is further divided into four expert panels that deal with railway, roads and bridges, air traffic control, and marine channels. The setting up of this Committee is a major breakthrough in the planning of border area between Hong Kong, Shenzhen, and Zhuhai.

CONCLUSION

The border of Hong Kong is important to its prosperity and stability before and after 1997. The operation of “one country, two systems” will be de facto broken down if Hong Kong cannot keep its border and maintain a stable population. Any sudden rise in population, especially large influx of immigrants will upset all the land use and transport planning and public facilities provision in Hong Kong. The concern of larger than expected growth is not without grounds. The working population of the original consultation document of the TDS is 6.5 million in 2011 under steady growth and 6.9 under extra high growth scenarios based on the population projection of the Census and Statistics Department (Planning Department, 1993b). This population projection has been considered as too low. In 1994, the population has increased to 6.06 million which has surpassed the forecasted population of 5.82 million for the same year. It has even surpassed the 6.04 million population forecasted for the year 2000. Many respondents of the TDS public consultation expressed the concern for the low projected population in preparing the TDS. There will be inadequate land provision to meet to needs of Hong Kong if this low estimation is used. As a result, the target population for 2011 has been increased to 7.5 million (Planning Department, 1994). Immigration from China can be better controlled before 1997, but after 1997, it will be more difficult. There are concerns over the number of legal and illegal immigrants. The number of legal immigrants in theory are relatively easy to control because the Hong Kong SAR can control the number entering Hong Kong each year, although

there may be increasing pressure from the central government to increase the quota from China. Even this, however, may be a problem because of technical difficulties in controlling legal migrants. Article 24 of the Basic Law states that children of permanent residents of Hong Kong born outside Hong Kong can have the right of abode in the Hong Kong SAR. In 1994, 8,000 babies were born from Chinese visitors with two-way exit permit. The increasing marriage of Hong Kong residents in China will also increase this number of babies born outside Hong Kong. The number of legal migrants from these sources will upset Hong Kong's land use, transport, and public facilities planning. Another major concern is the large influx of illegal immigrants going through the border, such as those that have occurred in 1949, 1962, and 1978. The keeping of the border is important to the prosperity and stability of Hong Kong.

In the planning of the border area, there is a need for a wide buffer zone between the border and the built up areas to facilitate border patrol and avoid traffic congestion caused by cross border traffic. Border service areas with hotels, restaurants, car parks, open storage, and gas stations are needed to serve the needs of cross border vehicular traffic. Experience in the Shenzhen SEZ shows the problem of having the built up areas too close to the border. Less than 55% of the cross border traffic that goes through the transport network of Shenzhen SEZ are from or to the SEZ. The transport system has to cater for the needs of the large volume of through traffic, causing traffic congestion to its road networks. This should be avoided in the planning of the border area of Hong Kong.

With increasing economic ties between Hong Kong and the Pearl River Delta, there is a need for more border crossings. The setting up of the Sino-British Infrastructure Co-ordination Committee is a major advancement in such co-ordination work. The co-ordination of city planning in transfrontier metropolises is often a matter of foreign policy (Herzog, 1991). This Committee can function well before 1997 as discussion can be held between China and Britain at the foreign affairs level, similar to the status of the Sino-British Joint Liaison Group which is set up for the implementation of the Joint Declaration and to discuss matters related to the smooth transfer of government in 1997. These groups would cease in July 1997 after Hong Kong becomes the SAR. After 1997, will there be a co-ordinating body which can replace the role and functions of the Sino-British Infrastructure Co-ordination Committee in co-ordinating cross border infrastructure development? Apart from the need to discuss about cross border links, the need of better co-ordination in infrastructure development and environmental management is also evident. There is some redundancy in the development of

new airports in Hong Kong, Shenzhen, Macau, and Zhuhai within a small radius of 25 km. These airports are expensive because they all planned for international flights. Better regionwide co-ordination and planning will help to reduce redundancy.

The attitudes towards the border from the two sides are different. China is such a large country, they can absorb the people and vehicles from Hong Kong going into China. Their concern is more on the smuggling of duty goods and publications that are contradictory to their political ideology into China. On the contrary, Hong Kong is less concern with the smuggling of goods, except for narcotics and weapons, because it is a duty free port. It is more concern with the inflow of people and vehicles from China. Hong Kong is such a small place and China is so large. Just a small fraction of their population and vehicles going into Hong Kong will cause severe problems to its transport, housing, and public facilities. Although at present people and vehicles from Hong Kong are welcome in Shenzhen because they bring investment and business to Shenzhen, there is a limit that Shenzhen can absorb without causing diseconomies. Diseconomies, such as traffic congestion and pollution, are already evident in Shenzhen. Forward planning in Shenzhen to deal with the anticipated cross border traffic between Hong Kong and Shenzhen is needed. In discussing border crossing, Hong Kong should also keep in mind the traffic problems that it has generated for Shenzhen and should try to help the planners in Shenzhen to solve its traffic problems related to cross border traffic and not simply pressing for the need and convenience of Hong Kong.

Based on the principle of co-operation and co-ordination, it seems that the proposed rail link by Shenzhen via the Deep Bay bridge is a better choice because it can help to connect the Shekou and Chiwan ports with the container port in Hong Kong. It can also divert some of the freights from the two Beijing to Hong Kong (Beijing-Guangzhou-Kowloon and Beijing-Jiujiang-Kowloon) railways from the congested Lo Wu crossing via the Pinhu-Nantou Railway. This can avoid having a railway cutting through the new city centre at Futian. The Lok Ma Chau border terminus of Hong Kong's Western Railway Corridor can be used for passengers only where they can cross the border to Futian. This can help to relief the pressure of the existing Lo Wu border. As for the road connection, it seems that the route Y proposed by Hong Kong is a better choice. If the Zhuhai and Shenzhen proposals are both adopted, there will be two border crossings, one connecting to Zhuhai and the other to Shenzhen. The Zhuhai-Hong Kong Lingdingyang Bridge will only be linked to Hong Kong. Vehicles going from Zhuhai to Shenzhen and vice versa will have to pass through Hong

Kong, leading to traffic congestion in Hong Kong. The route Y proposal could avoid this by enabling Zhuhai and Shenzhen to be connected with each other directly using Hong Kong as a bridge. Zhuhai-Shenzhen traffic can therefore bypass Hong Kong. This connection will facilitate the east-west traffic at the southern side of the Pearl River Delta that is much needed with the opening of the Gaolan Port in Zhuhai before 2000. This can also obliterate the need to build another expensive bridge crossing the southern side of the Pearl River Delta via the proposed Shenzhen-Zhongshan Lingdingyang Bridge. This bridge can help to connect the nearby ports and airports together. The construction of these two connection points will help Shenzhen to use them as bypasses for traffic that does not have to go into Shenzhen SEZ. The road networks in Hong Kong, especially those around Yuen Long and Tuen Mun areas which are already very congested, have to be adjusted to accommodate these new border crossings.

With increase economic linkages with China, it is inevitable that there will be more cross border crossings and traffic in North-West New Territories because the Pearl River Delta is at the western side of Hong Kong and the major infrastructure of the new container port and the Chek Lap Kok airport are all located at the western side of Hong Kong. More development, especially office development, is expected to take place in areas around Yuen Long and Tuen Mun which are close to these cross border transport hubs.

Apart from the construction of new land crossings, more ferry crossings should be encouraged to be developed because it can help to alleviate the pressure on the land crossings. Better border management, such as computerisation, use of high tech (such as smart card³), simplification of the immigration and custom procedure can also help to make the crossing of the border to be more convenient and comfortable. An efficient and convenient railway and public transport system that can take people to cross the border is also needed.

In the planning of border areas, it is also necessary to take negative externalities into considerations. The problem of negative externalities is emerging to be a major problem of the Pearl River Delta. Algae and red tides are increasing in the delta because of cross border pollution (Ho, forthcoming). A Strategic Sewage Disposal Scheme (SSDS) has been proposed in Hong Kong to deal with the disposal of its sewage by discharging semi-treated sewage through tunnel sewer to the South China Sea at the south of Lamma Island (Planning, Environment and Lands Branch, 1991 and 1993). This proposal has received very strong objections from China because it is dumping Hong Kong's waste into its water. Environmentalists in Hong Kong are concerned with the blowing of fumes

and pollution by the prevailing winds into Hong Kong from a proposed 2,640 megawatt Eastern Shenzhen coal-fired power plant at the eastern shore of the Mirs Bay directly across Hong Kong. When we are planning for Hong Kong, we should also take our neighbours into consideration. The same should apply for planners across the border. It is through co-operation and understanding that the border can be developed to mutual benefits. An example of such co-operation is the recent joint Shenzhen River Regulation Project to realign, widen, and deepen Shenzhen River which is the border between Hong Kong. The main objective of the project is to protect the bordering areas of the Shenzhen River from flooding.

Hong Kong and Macau will be better integrated into the Pearl River Delta when they become China's Special Administrative Regions at the end of the century. With competition among the cities and counties in the Pearl River Delta, it is anticipated that more cross jurisdiction problems will occur in the future. There is an urgent need to set up an inter-local government body to formulate and implement regionwide policies and plans. Although the Sino-British Infrastructure Co-ordination Committee will be abolished after 1997, it will provide very good experience on how cross border conflicts can be resolved and how cross border co-operation can be achieved in the region. The setting up of inter-local government body such as the Council of Governments (COG) in the United States should be actively pursued to deal with cross jurisdiction infrastructure development and negative externalities and to promote inter-local government co-operation in dealing with these matters. The COG in the United States comprises of representatives from adjoining cities and counties for the formulation of areawide policies and plans (Bollens and Schmandt, 1982). It is an inter-local government organisation that provides an areawide mechanism to study, discuss, and determine the best method to deal with cross jurisdiction problems and other common problems within the boundary of the COG.

The future of the border in Hong Kong very much depends on future economic and political development in Hong Kong and China. Take aside the difference in political ideology, Hong Kong needs a border that can protect her from the large influx of people and vehicles from China otherwise Hong Kong will be very crowded and congested and all our planning and development efforts in the last twenty years will become fruitless.

Notes:

1. The definition of floating population in China is different from transient and temporary population. Floating population are those who enter the city either legally or illegally without permanent or temporary residency in the city.
2. Metroplan is not a strategic plan for the metropolitan area of Hong Kong. The definition of metropolitan area in the TDS is different from the common usage in other parts of the world which is the city and its surrounding commuting areas. It only covers the Hong Kong Island, Kowloon, New Kowloon and Kwai Chung – Tsuen Wan and not the whole territory of Hong Kong which is the more correct definition of metropolitan area. Because of this, although the name “Metroplan” suggests that it is a plan for the metropolitan area of Hong Kong, it is not. The “Metroplan” is only one of the sub-regional plans of the five major sub-regions of the TDS and not for the metropolitan area of Hong Kong.
3. A smart card system has been used in the Singapore-Johore Bahru border to speed up immigration procedures by doing away with the filling of immigration forms and long queues. Instead of going through the immigration very time and getting the passport stamped, the traveller can be issued a smart card that can go through a reader that records arrivals and departures (Lee, 1991). The card is issued on the basis of on a valid multiple-entry business visa and is for non-Malaysian only to facilitate them to work or live across the border.

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Appendix 1

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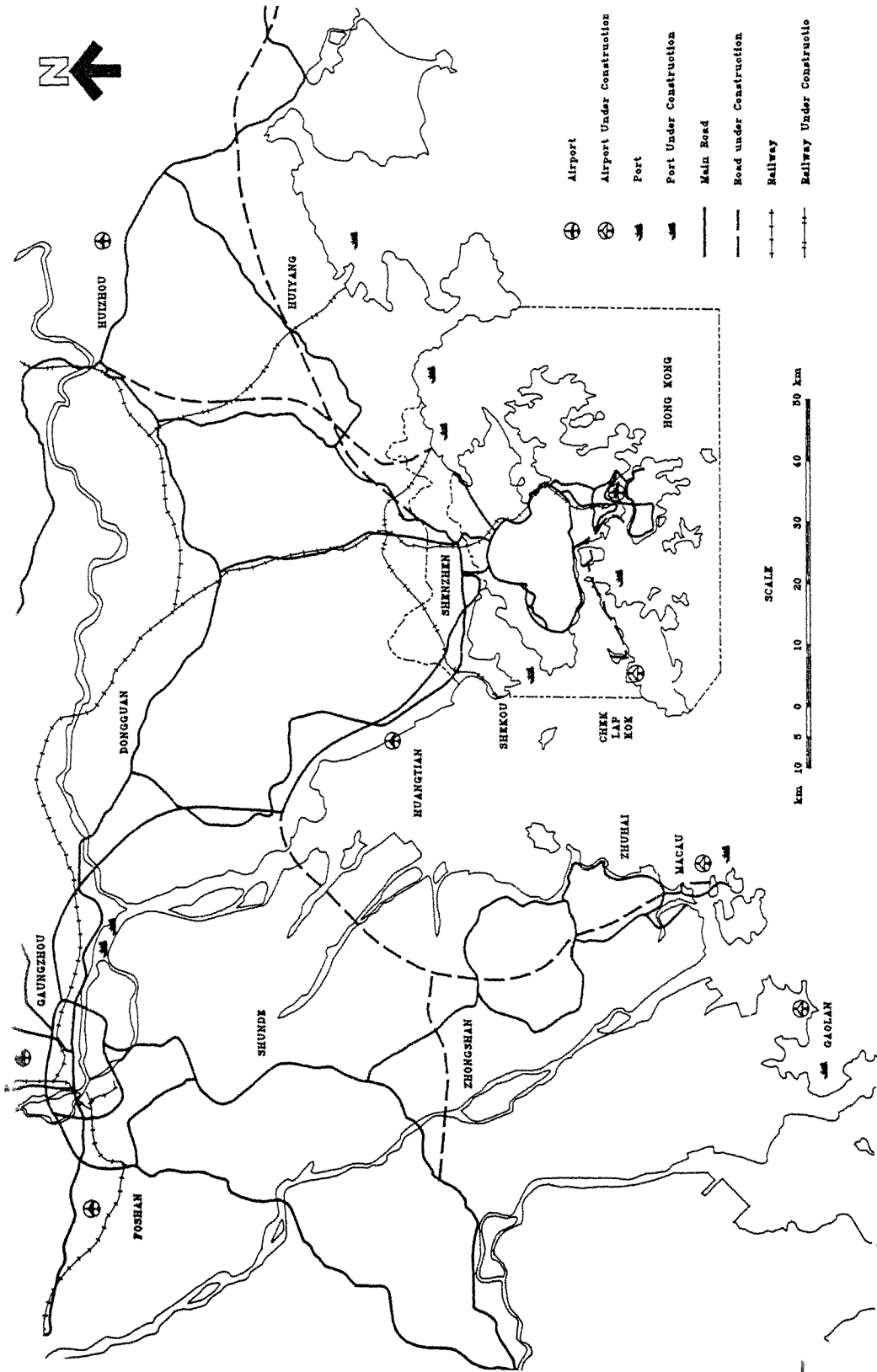
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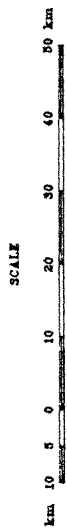
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- Airport
- Airport Under Construction
- Port
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- Road under Construction
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