TECHNICAL PAPER NO. 1:

TYPOLOGY FOR EMPLOYMENT RELATED LAND USES

GHK(Hong Kong) Ltd.

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This report is prepared by GHK(HK) Ltd. for information and discussion purposes. The findings and recommendations do not necessarily represent the views of the HKSARG.

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1. **INTRODUCTION**

1.1 **Background**

1.1.1 This draft working paper has been prepared as part of the reporting on the economic planning services component of the current Territorial Development Strategy (TDS) Review - Hong Kong 2030: Planning Vision and Strategy (HK2030 Study). It is the first of four working papers covering each of the four stages of work as set out below:

**Stage 1 - Land Use Typology**

1.1.2 Stage 1 comprised three main tasks as detailed below:

- Task 1.1 - future economic structure and key economic activities;
- Task 1.2 - property and land requirements for future economic activities;
- Task 1.3 - review of existing land use typology.

1.1.3 The objective of this assessment is to recommend a land use typology which reflects the changing importance of individual sectors but gives scope for a simplified land use categorisation to meet the requirements of modern business activity. This Working Paper 1 covers this Stage.

**Stage 2 - Model Establishment**

1.1.4 Stage 2 will comprise three main tasks as detailed below:

- Task 2.1 - review of existing forecasting models;
- Task 2.2 - preparation of a short / medium term forecasting model;
- Task 2.3 - preparation of a long term forecasting model.

**Stage 3 - Floorspace Demand and Land Requirements for Reference Scenario**

1.1.5 Stage 3 will comprise three main tasks as detailed below:

- Task 3.1 - development of a reference scenario;
- Task 3.2 - estimate of floorspace demand for reference scenario using the forecasting models developed in Stage 2;
- Task 3.3 - projection of land requirements for reference scenario.

**Stage 4 - Floorspace Demand and Land Requirements for Alternative Scenarios**

1.1.6 Stage 4 will comprise three main tasks as detailed below:
• Task 4.1 - development of alternative development scenarios and options;
• Task 4.2 - estimate of floorspace demand for alternative scenarios;
• Task 4.3 - estimate of land requirements for alternative scenarios.

1.2 Approach to Land Use Typology Study

1.2.1 Three main task areas were identified for the Stage 1 work covered by this working paper. The approach adopted is as detailed below.

Task 1.1 - Future Economic Structure and Key Economic Activities

1.2.2 The task here was to identify the factors which will determine the economic structure of Hong Kong to year 2030. Firstly, this was based on an analysis of recent past economic trends in the overall Hong Kong economy since 1990 considering in particular the cross boundary and other international factors that have affected economic performance.

1.2.3 In order to consider the long term future the study focused on the sectors, and structural and other factors affecting those sectors, which are expected to figure most significantly in the changing economy of the SAR. This analysis drew in particular on the work of the Commission on Strategic Development's "Hong Kong Long-Term Development Needs and Goals" which set out the following pillars of the Hong Kong economy for the next 30 years:

- financial and business services;
- regional headquarters of multinational corporations;
- information services and telecommunications;
- innovation and technology;
- trade, transportation and logistics;
- creative and cultural activities;
- tourism.

1.2.4 Their potential contributions to Hong Kong's output, employment and demand for property were assessed to determine the relative importance of these economic activities in the Hong Kong economy. However detailed reviews of each of these sectors also allowed the identification of some of the key factors affecting economic and land use change many of which are common to all or many of the sectors. Issues identified included inter alia:

- the implications of continuing industrial restructuring;
- significant changes in employment and floorspace productivity;
- implications of China's prospective WTO entry for Hong Kong;
changes in cross boundary institutional arrangements - 24hr crossings, passports, work and residency permits, quotas etc;

implications of technology changes for working practices (e.g. home working, hot-desking);

supply chain management and the reduction in holding of stocks;

impact of globalisation and competition in the region; and so on. Trends in these areas were also compared with international experience.

1.2.5 Carried out in this way, the task will also input to the development of reference and alternative scenarios in Stages 3 and 4 of the study.

Task 1.2 - Property and Land Requirements for Future Economic Activities

1.2.6 This section summarised the main implications for property, land use, location and infrastructure and examines international experience in these trends. Comparisons with Hong Kong conditions are made. The review of Hong Kong experience examines the implications of the findings of recent relevant studies and surveys including:

- Study on the Restructuring of Obsolete Industrial Areas (ROBINA) (1993);
- Reduction of Surplus Industrial Land in the Metro Area (1996);
- Case Studies Arising from the Study on the Restructuring of Obsolete Industrial Areas (ROBINA Case Studies) (1997);
- Study on the Provision of Industrial Premises and the Development of Planning Guidelines and Design Parameters for New Industrial Areas and Business Parks (PIPNIB) (1997);
- Territorial Development Strategy Review (TDSR) (1998);
- Pak Shek Kok Science Park Study (1998);
- Study on the Propensity for Office Decentralisation and the Formulation of an Office Land Development Strategy (OLDS) (1999);
- Hong Kong Business Park Study (1999);
- Cultural Facilities: A Study on Their Requirements and the Formulation of New Planning Standards and Guidelines (1999);
- Study on the Review of the Framework for Industrial Land Provision and Reservation Strategy (2000);
- Consultancy Study to Review the Role and Operation of the Industrial Estates (2000);
- Urban Renewal Study (2000);
Task 1.3 - Review of Existing Land Use Typology

1.2.7 This task reviewed the adequacy of existing land use typology for employment related activities and recommended a new approach to land use typology with a view to meeting the changing property and land requirements of economic activities in the future. It specifically examines the typology for employment land uses used in the existing TDSR, including the use of classifications such as Business Park and I/O, and the emergence of new property products such as Science Park, Cyberport and Business Buildings. This analysis also draws on international experience.

1.2.8 Based on this assessment a land use typology is recommended which reflects the changing importance of individual sectors but gives scope for a simplified land use typology which meets the requirements of modern business activity.

1.3 Scope and Coverage of Land Use Typology

1.3.1 It is important to note firstly, the scope of the land uses being covered by the typology which is examined in the work of the economic planning services to the Hong Kong 2030 Study and, secondly, the coverage and purpose of the typology which is to be recommended. With regard to the scope of land uses a simple two-step process has been used to identify the land uses to be addressed - see Figure 1.1

Figure 1.1 Scope of Land Use Typology for Economic Planning
1.3.2 Land use reservations for Hong Kong 2030 Study will cover all sectors of land use activity. However the focus of the economic planning studies firstly excludes all non "economic" (i.e. employing) activities. Thus the land use typology developed here will exclude residential, open space, green belt, country park, marine or similar uses.

1.3.3 Of the remaining economic or employing uses, the focus is on the main activities in the industrial and service sectors. However there are a number of specific exclusions for which land use reservations are made directly or have been covered in other studies being undertaken for Hong Kong 2030 Study. These exclusions include:

- public sector uses such as government offices (except where Government is a tenant of the private sector), public facilities such as markets, fire stations, hospitals, clinics, community facilities, public recreation facilities, etc.;
- cultural or similar other civic uses except where these are provided as part of private commercial development;
- airport, port and related uses which are the subject of separate studies;
- hotels and other specialist tourist facilities which are the subject of separate sector or individual studies;
- retail, retail services and related entertainment facilities which are the subject of individual reservation studies (see HKPSG Chapter 6), except where they form part of integrated commercial developments;
- agriculture, fisheries and related uses;
- mineral working areas;
- specialised facilities for utility users including powers stations, sewage treatment facilities, etc.;
- passenger transportation and related uses.

1.3.4 Secondly, this study refers throughout to a "land use typology" which will be used in the Hong Kong 2030 Strategy for land use forecasting and reservation purposes only. It should be clearly noted that it is not the purpose of this typology to provide a categorisation of uses for land use zoning as provided in Outline Zoning Plans or for development control purposes. This much more detailed typology is not required for strategic planning and land reservation purposes and it is expected that detailed land use zoning could be carried out on the existing (or a future revised) basis within the broader typology which will be set by the present studies.

1.4 Structure of WP1

1.4.1 This first Working Paper is set out in five further chapters following this introduction. The coverage and purpose of each chapter is set out below.

1.4.2 Chapter 2 on "Economic Structure and Change" summarises trends in major economic variables - output, employment and floorspace - in the Hong Kong economy from 1990 to 2000. It identifies key structural changes since 1990 by reference to the key sectors
for the future of the economy identified in the Commission on Strategic Development's "Hong Kong Long Term Development Needs and Goals". It then goes on to identify key issues for economic and land use change.

1.4.3 Chapter 3 on "Changing Property and Land Requirements" highlights the implications of Chapter 2 for property and land requirements and examines these against international experience and the findings of recent relevant studies in Hong Kong.

1.4.4 Chapter 4 on "Existing Land Use Typology and Requirements of Future Economic Activities" examines the existing HK typology used for land use forecasting and reservation and evaluates its suitability to meet the changing needs identified in previous chapters, emphasising the implications for land administration and building control as well as planning. The chapter also sets out the case for a new, broader based, more flexible land use typology and the principles for redesigning the existing land use typology to meet the changing needs.

1.4.5 Chapter 5 on "Recommendations and Next Step" makes recommendations on a new land use typology and outlines the next stage of economic planning work.
2. ECONOMIC STRUCTURE AND CHANGE

2.1 Existing Economic Structure and Trends

Regional Economy

2.1.1 This chapter commences with an overview of the development and structure of the existing Hong Kong economy as a whole.

2.1.2 The pace of growth in many Asian economies had been impressively fast before the financial crisis in late 1997. In the period from 1993 to 1997, the gross domestic product (GDP) of the newly industrialised Asian economies (comprising Hong Kong, Singapore, Taiwan and South Korea) had been growing at an average annual rate of 6.8% in real terms (see Table 2.1). This growth rate was almost twice as high as for the world economy. The average real GDP growth in the Mainland of China was 11% in this period of time.

2.1.3 As a result of the 1997 regional financial turmoil, many economies in Asia went into severe recession in 1998. Real GDP in many Asian countries/regions, including Hong Kong, experienced negative growth, reversing a robust growth trend. The real GDP growth of the newly industrialised Asian economies was -2.4% in 1998, down from 5.7% the previous year. The Asian economic outlook at that time was generally pessimistic. The Mainland of China, in contrast, did not fall into recession. Despite the financial crisis, the Chinese economy posted growth of 7.8% in 1998.

2.1.4 The financial crisis was quickly reversed in 1999 and the recovery was also much stronger than expected. A sharp rebound in economic growth was recorded in many crisis affected countries. The real GDP growth of the newly industrialised Asian economies was 7.9% in 1999 and 8.2% in 2000 - a level twice as high as for the world economy. The growth in Korea was particularly strong.

2.1.5 The prospects for growth in Asia have however weakened since late 2000, attributed to a marked slowdown in the United States economy, although the robust recovery in 1999 and 2000 was projected to slow down in 2001. The real GDP growth of newly industrialised Asian economies was forecast to be 3.8% in 2001 and 5.5% in 2002 by the International Monetary Fund.

Hong Kong Economy

2.1.6 GDP in Hong Kong has grown steadily since the 1960s (Figure 2.1). In the period from 1991 to 1997, the average GDP growth in Hong Kong was 5% per annum in real terms. In 1998, Hong Kong experienced a deep recession as a result of the Asian financial turmoil - the economy contracted by 5%. However, the economy of Hong Kong adjusted promptly to provide a solid base for continued recovery. In 1999 and 2000 Hong Kong enjoyed a robust recovery, the economy growing at 3% and 10.5% respectively in real terms.

2.1.7 In 2000, Hong Kong's share of aggregate world GDP was 0.4%. The United States, the Mainland of China and Japan were the largest contributors to aggregate GDP, their shares being 22%, 11.6% and 7.3% respectively (see Table 2.2).

2.1.8 Hong Kong's per capita GDP reached US$23,633 in 2000. This was among the highest in the world, higher than many developed countries such as Germany (US$22,878), Canada (US$22,712), France (US$21,996) and Australia (US$19,783). Within Asia, Hong Kong's GDP per capita was the third-highest, next to Japan and
Singapore (see Table 2.2).

### Table 2.1 Real GDP Growth in Selected Countries / Regions (%)

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<td>3.5</td>
<td>4.8</td>
<td>3.2</td>
<td>3.9</td>
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<td><strong>2.4</strong></td>
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<td>2.3</td>
<td>-0.4</td>
<td>2.8</td>
<td>2.4</td>
<td>1.6</td>
<td>2.6</td>
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<td>3.4</td>
<td>2.4</td>
<td>2.8</td>
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<td>1.2</td>
<td>0.5</td>
<td>1.0</td>
<td>1.6</td>
<td>3.3</td>
<td>1.9</td>
<td>-1.1</td>
<td>0.8</td>
<td>1.7</td>
<td>0.6</td>
<td>1.5</td>
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<td><strong>5.6</strong></td>
<td><strong>6.4</strong></td>
<td><strong>7.9</strong></td>
<td><strong>7.5</strong></td>
<td><strong>6.3</strong></td>
<td><strong>5.7</strong></td>
<td><strong>-2.4</strong></td>
<td><strong>7.9</strong></td>
<td><strong>8.2</strong></td>
<td><strong>3.8</strong></td>
<td><strong>5.5</strong></td>
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<td>6.1</td>
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<td>10.5</td>
<td>3.5</td>
<td>4.8</td>
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<td>5.5</td>
<td>8.3</td>
<td>8.9</td>
<td>6.8</td>
<td>5.0</td>
<td>-6.7</td>
<td>10.9</td>
<td>8.8</td>
<td>3.5</td>
<td>5.5</td>
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<td>Taiwan</td>
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<td>7.6</td>
<td>6.4</td>
<td>6.1</td>
<td>6.7</td>
<td>4.6</td>
<td>5.4</td>
<td>6.0</td>
<td>4.1</td>
<td>5.6</td>
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<td>12.7</td>
<td>11.4</td>
<td>8.0</td>
<td>7.5</td>
<td>8.4</td>
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<td>5.9</td>
<td>9.9</td>
<td>5.0</td>
<td>5.8</td>
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<td><strong>6.3</strong></td>
<td><strong>6.7</strong></td>
<td><strong>6.1</strong></td>
<td><strong>6.5</strong></td>
<td><strong>5.8</strong></td>
<td><strong>3.5</strong></td>
<td><strong>3.8</strong></td>
<td><strong>5.8</strong></td>
<td><strong>5.0</strong></td>
<td><strong>5.6</strong></td>
</tr>
<tr>
<td>Mainland China</td>
<td>10.2</td>
<td>9.2</td>
<td>13.5</td>
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<td>7.8</td>
<td>7.1</td>
<td>8.0</td>
<td>7.0</td>
<td>7.1</td>
</tr>
</tbody>
</table>

# comprising HKSAR, Singapore, Taiwan and South Korea
* forecast

Data source: International Monetary Fund World Economic Outlook May 2001

### Table 2.2 Share in World Aggregate GDP and Per Capita GDP in Selected Asian Countries/Regions

#### Share in Aggregate GDP (%)

<table>
<thead>
<tr>
<th>Country</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>7.8</td>
<td>7.6</td>
<td>7.3</td>
</tr>
<tr>
<td>Singapore</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Hong Kong SAR</td>
<td>0.4</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>Taiwan</td>
<td>1.0</td>
<td>1.0</td>
<td>1.1</td>
</tr>
<tr>
<td>South Korea</td>
<td>1.5</td>
<td>1.6</td>
<td>1.7</td>
</tr>
<tr>
<td>Mainland China</td>
<td>10.8</td>
<td>11.2</td>
<td>11.6</td>
</tr>
</tbody>
</table>
### Per Capita GDP (US$ at current prices)

<table>
<thead>
<tr>
<th>Country</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>31,255</td>
<td>35,672</td>
<td>37,625</td>
</tr>
<tr>
<td>Singapore</td>
<td>24,496</td>
<td>24,686</td>
<td>26,824</td>
</tr>
<tr>
<td>Hong Kong SAR</td>
<td>24,513</td>
<td>23,406</td>
<td>23,633</td>
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<td>Taiwan</td>
<td>12,153</td>
<td>12,952</td>
<td>13,805</td>
</tr>
<tr>
<td>South Korea</td>
<td>6,901</td>
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<td>9,706</td>
</tr>
<tr>
<td>Mainland China</td>
<td>762</td>
<td>790</td>
<td>855</td>
</tr>
</tbody>
</table>

Source: International Monetary Fund World Economic Outlook May 2001

### Structure and Development of the Hong Kong Economy

2.1.9 The economic structure of Hong Kong since the Second World War can be conveniently analysed in three distinct phases. They are:

- export-led industrialisation from early 1950s through the 1960s;
- broad based development in the 1970s;
- Hong Kong-China economic integration from 1980s onwards.

2.1.10 From the early 1950s, Hong Kong embarked on its export-led industrialisation relying on imported raw materials which were processed by a cheap but productive local labour force. The expansion of manufacturing was the driving force of the economy in these early years. The main manufacturing industries during this early period were textiles, clothing, plastics and toys.

2.1.11 After 1973, the Oil Crisis triggered a period of recession and protectionism in the developed countries. In addition, competition from other newly industrializing countries in Asia such as Korea, Taiwan and Singapore intensified. The base of manufacturing industry was diversified in the 1970s to keep Hong Kong abreast of the growing competition and challenges from around the world. The relative importance of textiles fell, while that of electronics, clocks and watches rose. There was a shift from labour intensive and simple products to more technology-oriented and sophisticated products. However, the contribution of manufacturing industry to gross domestic product (GDP) still declined from 31% in 1970 to 24% in 1980.

2.1.12 The other important trend in the 1970s was the phenomenal growth of the finance and business services sector. The finance and business sector increased its contribution to GDP from 15% to 23% between 1970 and 1980. The expansion was a spin off from the worldwide development of the financing industry (which ushered in the globalisation of capital markets) and innovative changes in financial services, made possible by new electronic and telecommunication technology.

2.1.13 From the early 1980s the economy received further stimulation from economic reforms in China. Four Special Economic Zones (SEZs), namely Shenzhen, Zhuhai, Shantou and Xiamen were established in 1980. Hainan Island later joined the ranks of SEZs in 1988. In April 1984, another fourteen coastal cities were declared "open" to foreign investments. These areas were used by the Chinese Government as testing grounds.
of new policies and reforms in order to lure foreign technology, know-how and capital to modernise productive capacity in China. Numerous incentives e.g. tax breaks were offered to foreign enterprises.

2.1.14 These initiatives in China stimulated a new era of economic growth and structural change in Hong Kong for the following reasons:

- Hong Kong manufacturers started to relocate labour-intensive and low value-added production processes to Mainland China allowing them to concentrate more fully on product research and development, marketing, finance, design, packaging and quality control functions in Hong Kong. As the manufacturing base in South China improves, many of these activities are now carried out in the Mainland;

- with extensive trading linkages and good transportation and communication infrastructure, Hong Kong has become a transhipment centre through which Chinese goods could be channelled to other countries and vice versa;

- as China actively searches for markets and technologies for their products, Hong Kong became the main supplier of machinery, manufacturing and marketing expertise and entrepreneurial management skills essential to China's modernisation programme;

- Hong Kong acts as the gateway through which the world's investment can travel to China and vice versa.

2.1.15 Apart from the China factor, Hong Kong also benefits from the rapid economic development of the Asia Pacific region. Thus, for example, the central location and excellent communication links have enabled Hong Kong to become a major centre for Asia Pacific regional headquarters of multi-national corporations.

2.1.16 By 1999, structural change in Hong Kong had reached the point where over 85% of GDP and 80% of employment comes from the service sector (Figure 2.2 and Table 2.3). The largest contribution comes from three primary sectors: Wholesale, Retail, Import/Export Trades, Restaurants and Hotels; Finance, Insurance, Real Estate and Business Services; and Community, Social and Personal Services. All indicators of the future trend point towards a continued dominance of the service sector.

### Table 2.3 Contribution to GDP (1999) and Employment (2000) of Selected Sectors

<table>
<thead>
<tr>
<th>Economic Sector</th>
<th>GDP</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>5.7%</td>
<td>7%</td>
</tr>
<tr>
<td>Wholesale, Retail and Import/Export Trades, Restaurants and Hotels</td>
<td>25.2%</td>
<td>32.1%</td>
</tr>
<tr>
<td>Transport, Storage and Communications</td>
<td>9.6%</td>
<td>11.5%</td>
</tr>
<tr>
<td>Financing, Insurance, Real Estate and Business Services</td>
<td>23.2%</td>
<td>14.5%</td>
</tr>
<tr>
<td>Community, Social and Personal Services</td>
<td>21.5%</td>
<td>24.3%</td>
</tr>
</tbody>
</table>

Data source: C&SD
2.1.17 In summary, the territory’s economy has undergone fundamental structural change. Initially based on light manufacturing, Hong Kong's economy is now service oriented. The principal hub functions that Hong Kong now engages in include a financial and business centre, a trading centre, a transport and communication centre, a centre for professional and technical expertise and a base for industrial services and high tech industry. With the increasing contribution of the service sector to the Hong Kong economy, the manufacturing sector is moving towards high value added and high technology development with the relocation of production processes to Mainland China and other Asian countries.

**Figure 2.1 GDP in HKSAR (1962 to 2000)**

![GDP in HKSAR (1962 to 2000)](image)

*Data source: C&SD*

**Figure 2.2 Contribution to ADP in HKSAR (1980 to 1999)**

![Contribution to ADP in HKSAR (1980 to 1999)](image)

*Data source: C&SD*
**Implication for Property**

2.1.18 The broad implications of economic restructuring since the 1980's are twofold, the demand for office accommodation and storage has increased steadily over the years whilst the demand for flatted factories has ceased to grow since the early 1990's (Figure 2.3).

2.1.19 At the end of 2000, there were 9.1 million sq. m IFA of private offices and 21.5 million sq. m IFA of General Industrial Uses - which comprises private flatted factories, private industrial/offices and private storage – in Hong Kong. These traditional office and industrial property products are reasonably well utilised by a wide range of conventional economic activities in the service and manufacturing sectors. The vacancy rates of these premises maintained at a low level of about 10% at the end of 2000 (Figure 2.4). It should however be noted that a significant share of industrial floorspace is no longer used for industrial activities. The inflexibility of the current planning policies and buildings and lands restrictions has discouraged the use of industrial premises for other uses.

**Figure 2.3 Demand for Selected Property Products (1976 to 2000)**

![Figure 2.3 Demand for Selected Property Products (1976 to 2000)](image)

Data Source: R&VD
2.2 Commission on Strategic Development: Key Sectors

2.2.1 In 2000 the Commission on Strategic Development published "ringing the Vision to Life - Hong Kong's Long Term Development Needs and Goals". The report focussed its vision around sectors and areas of the SAR's economy identified as key to Hong Kong's future long-term development and to maintaining a strong regional and international competitive advantage. It is these sectors that are driving the changes in the economy and which are expected to lead Hong Kong into the next phase of its development. It should also be noted that it is these sectors which are going to drive the long term demand for "economic" land and property and where the most radical changes are taking place in the use of labour and property.

2.2.2 The following sectors and areas of the economy were identified:

- **financial and business services** - with the continuous opening of the Mainland, Hong Kong has the opportunity to further develop its own resource base. It was recognised that developments in technology, combined with the global consolidation of the sector will see rapid changes in the nature and role of the world's financial services and that these changes are likely to accelerate over the medium to long term. If it is to capitalise on these changes, the SAR must continue to be innovative and efficient in providing the services the market demands;

- **regional headquarters of multinational corporations** - the report recognises Hong Kong as the "location of choice" for many of the world's leading multinational corporations (MNCs) many of which are still expanding their activities in the region. There are new challenges for the medium to long term however in strong competition from other regional cities and technological changes which may reduce the need for a traditional regional headquarter structure;

- **information services and telecommunications** - here the report identified four long term challenges. First there is the need to upgrade labour skills by
attracting Mainland and international professionals where they are not available locally. Second improvements are needed in hard and soft infrastructure and third there will be intense international competition in this sector. Lastly there is a need to maintain and improve the telecoms infrastructure;

- **innovation and technology** - the challenge here recognises the lack of a tradition in science and technology research. It will be necessary to provide not only the necessary infrastructure but to foster an innovation culture. The approach recognises that the Mainland has focussed development in this area and that Hong Kong should develop in collaboration and integration across the boundary;

- **trade, transportation and logistics** - Hong Kong is now one of the world's leading global trading centres driven in part by the packager/integrator role that the SAR has with the Mainland. E-commerce will affect these trading practices and Hong Kong companies must continue to innovate and add value to services. In the physical movement of goods Hong Kong must derive greater value from the investment in infrastructure of the 1990's to meet the challenge of lower cost centres in the Mainland and other regional centres;

- **creative and cultural activities** - the report identifies the importance of world class cultural and creative facilities to a city's residents and visitors and the strong creative and cultural foundations on which to build. The significant economic growth and development opportunity for the future however is the rapidly increasing demand for the media and creative infrastructure and support services which will grow with the globalisation of this sector;

- **tourism** - this is another sector in which Hong Kong has a traditionally strong position in world terms and in which current major investment will see significant further growth and change. Significant changes in the sourcing of visitors, particularly from the Mainland, and the growth of high value business tourism are seen as the greatest challenges and opportunities.

2.2.3 This study will focus its work on long term future developments in these "sectors" by analysing the factors which have driven their growth and, more importantly, will shape further change. It is these factors which in turn will inform the debate about the need for a modern land use typology.

2.3 **Key Sector Developments : A Summary of Key Issues**

*Financial and Business Services*

2.3.1 Output and employment of the financial and business services sector increased steadily in the years leading up to the Asian financial crisis in late 1997. The average growth of the sector's contribution to GDP was as high as 8% per annum in real terms from 1980 to 1997. This robust growth was reversed in late 1990's, although the sector showed signs of recovery in 2000.

2.3.2 The Asian financial turmoil of late 1997, the continued impact of information technology and China's prospective entry into the World Trade Organisation (WTO) has fostered consolidation and merger activities in the financial and business services sector. Many large banking, insurance and financial institutions, and business services companies have consolidated and expanded their business capacities through mergers and acquisitions. Smaller institutions are anticipated to follow suit in the near future in order
to maintain their competitive advantages.

2.3.3 Advances in Internet and telecommunication technologies have enabled companies to relocate some of their back office operations, such as data processing and customer services centres, to lower cost areas outside Hong Kong. The relocation of back office functions outside Hong Kong will inevitably reduce the demand for labour and floorspace in Hong Kong. In addition, advances in technologies have allowed customers to access banking and other financial services through the Internet. The demand for branch offices and customer services centres, and therefore the demand for labour and floorspace, are anticipated to decrease in the future. Moreover, sub-sectors such as financial markets and fund management services, and insurance services showed a significant increase in floorspace productivity in recent years. This may be driven by better use of IT - allowing, amongst other benefits, reduced storage space and relocation of some activities, and new working practices, such as hot desking and home working (although this has not been especially widespread).

2.3.4 Hong Kong's continued success in a knowledge based global economy, depends on its ability to develop high value added activities. A key requirement for this is a supply of highly educated professionals. Given concerns about the depth of quality in Hong Kong and the time it takes to develop this high-order professional skills, the Government has recently implemented the Admission of Mainland Professionals Scheme on a sector specific basis, initially targeting the financial services and the information technology sector.

2.3.5 China's prospective entry into the WTO has brought about both opportunities and threats for Hong Kong's financial and business services sector. Many global players use Hong Kong as their springboard for the China market. At the same time many Chinese enterprises set up new operations in Hong Kong aiming to get into the global market. Many of these companies rely on Hong Kong's financial institutions for funding. To enter the China market, many professionals in Hong Kong's business services sector need to travel regularly across the boundary - a sizeable proportion of them have to relocate to the Mainland. In the short term, the WTO effect is anticipated to stimulate the growth of employment in Hong Kong's financial and business services sector and the demand for floorspace as the volume of business through Hong Kong increases. The growth however may level off as China's business environment and infrastructure improve. It should also be noted that the WTO effect will undeniably intensify the competition between Hong Kong and other Chinese cities, notably Shanghai. The competition will heat up when Chinese cities further deregulate their economy and after the RMB becomes freely convertible.

2.3.6 Hong Kong is also facing strong competition from other financial and business centres in the region. In particular, Hong Kong's competitive edge as the freest economy in Asia will be eroded if Singapore further deregulates its financial system.

2.3.7 The domestic market is anticipated to expand steadily with the future growth of population and GDP. The introduction of the Mandatory Provident Funds scheme has begun to inject significant amounts of investment into the local financial market. Moreover, the health care reform currently being considered by the Government may increase the injection of funds further.

2.3.8 In terms of demand for high quality offices at central locations, this is likely to increase with the anticipated growth of the financial and business service sector. Supporting business services are likely to remain at modest to high quality office accommodation at the periphery of the Central Business District. The demand for office accommodation at less accessible locations is however likely to drop as a result of the continuous relocation of back office functions outside Hong Kong.
Regional Headquarters of Multinational Corporations

2.3.9 Hong Kong is the preferred location for MNCs to establish their regional headquarters for the Asia Pacific Region. Prior to the Asian financial crisis in late 1997, the number of regional headquarters in Hong Kong had shown strong growth. However, the financial crisis has resulted in a significant decline in the number of regional headquarters in Hong Kong, from the peak level of about 900 in 1997 back to the 1996 level of about 800 by 1998. The growth has now resumed, although at a much lower rate than before.

2.3.10 In 2000, 855 MNCs had their regional headquarters in Hong Kong, employing over 73,000 persons. 25% of the MNCs were US enterprises, whilst 15% were Japanese enterprises.

2.3.11 The majority of MNCs' regional headquarters in Hong Kong are responsible for China and South East Asia business operations, although the proportion responsible for the East Asia and Asia Pacific region has declined over the years. However, as the China economy continues to expand and liberalise, bolstered by China's entry into the WTO, more MNCs are likely to establish regional headquarters in Hong Kong and utilise the SAR as a springboard for the China market.

2.3.12 The number of MNCs engaged in the manufacturing sector has declined over time. In 2000, almost half of the MNCs with regional headquarters in Hong Kong were engaged in the Wholesale, Retail and Import/Export Trade sector, whilst 30% were in the financial and business services sector. Only 9% were manufacturing enterprises.

2.3.13 Hong Kong's sophisticated professional services sector has been and will remain a positive factor in attracting medium and smaller MNCs. This group of companies tends to rely more on external services than traditional MNCs.

2.3.14 Recent studies have shown that a wide range of factors have determined the location of MNCs, of which the availability of property is only of secondary importance. In 2000, after world-class banking and financial facilities as the most important factor, accessibility of information was considered as the second most important factor in the selection of regional headquarters location by MNCs in Hong Kong. It is anticipated that advancement in information technology (for example, further rollout of broadband services, the development of 3rd Generation Mobile Services, etc.) will strengthen Hong Kong's position, against most other cities, as the preferred regional headquarters location in Asia.

2.3.15 Singapore is Hong Kong's main competitor for MNC headquarters location. In 2000, 35% of the MNCs surveyed had established their regional headquarters in Hong Kong, followed by Singapore (30%), Tokyo (9%), Sydney (5%), Shanghai (3%), Beijing (2%) and Taipei (1%). As noted earlier, Singapore has started to deregulate its financial system and compared with Hong Kong, the city-state has a stronger technological capability and its workforce generally possess better language skills, which are also significant factors in location of MNCs. However, the development of Singapore has been hampered by recent political and economic crises in ASEAN countries, and weakening markets for its high-tech exports.

2.3.16 Potential strong competition from Chinese cities, notably Shanghai, should also be noted. Shanghai's infrastructure, both hardware and software, has improved enormously in recent years, strengthening its role as the financial and business centre in China. A recent survey conducted by Hong Kong and Shanghai research institutions revealed that the gap between Hong Kong and Shanghai has narrowed substantially over recent years. With WTO accession, China will be obliged to improve its financial infrastructure, information transparency, rule of law and public sector
services, all of which are also important criteria when MNCs are selecting locations for their regional headquarters. However, these developments will take time and it is expected that Shanghai (and other major Mainland cities) will challenge Hong Kong’s status as the prime location for regional headquarters in Asia in the medium to long term.

2.3.17 Thus, the demand for high quality office accommodation will increase with the anticipated growth of the number of MNC regional headquarters in Hong Kong. The major business functions will be service oriented, focusing on trading and distribution, financial and business services. The most important property related factor, will be Hong Kong's ability to keep the cost of office accommodation at a reasonable level to maintain its attractiveness to MNCs.

Information Services and Telecommunications

2.3.18 Hong Kong's spending on information technology (IT) exceeded HK$20 billion in 2000. On a per capita basis, this level was among the highest in Asia. Despite the collapse of the 'dot-coms', the IT industry is expected to enjoy continued growth in the short term. A 2001 report by International Data Corp. forecast that Hong Kong's IT market will grow at 9.8% per annum in the next four years and will be worth $4.9 billion by 2005. Forrester Research expects Hong Kong's e-commerce market to grow from US$2 billion in 2000 to US$70 billion in 2004.

2.3.19 The vast majority of software and information services provided by Hong Kong is for local consumption. In 1997, only 18% was exported, according to a Hong Kong Productivity Council survey. Mainland China is the main importer of Hong Kong's IT products and services, consuming 10% of the sector's total output in 1997.

2.3.20 The demand for IT products and services, particularly application software, has grown dramatically since the Asian financial crisis which stimulated the restructuring and transformation of various economic sectors. However, in global terms, this sector has seen its fortunes change dramatically. The 'dot-com bubble' has burst, while many of the major telecoms MNCs are burdened with debt following the competitive bidding for 'Third Generation' (3G) licences. Market sentiment has moved dramatically against the sector and several major players have seen their share prices plummet. Allied to this has been a considerable degree of labour shedding and reductions in investment. Nevertheless, although demand from the developed countries, notably the US and Europe has slowed, the Mainland China market is expected to continue its strong expansion. China's Minister of Information Technology and Industry recently forecast that the Mainland's IT sector would enjoy average annual growth of 20% over the next five years.

2.3.21 The majority of local software developers in Hong Kong are small firms with less than 20 employees. Many undertake software development for companies in Mainland China and Southeast Asia. It is also now common for Hong Kong companies to set up subsidiaries in China and elsewhere to cut down operation costs. The best of Hong Kong's software developers are highly flexible and responsive to customer needs and have developed a strong track record in producing customised software, particularly for the financial sector. Examples include brokerage and commercial banking packages of international standard. However, many companies in Hong Kong are still at an early stage of development, demanding re-engineering in business processes and significant improvements in productivity.

2.3.22 As with many other developed economies, Hong Kong is facing an IT skills shortage. The demand for all levels of IT skills continues to grow. A recent report by the Government's IT Manpower Task Force forecasts that the requirement for IT
personnel in Hong Kong will increase to 98,000 in 2005 (from 50,000 in 1999) at an annual growth rate of 11.8%. In terms of the additional demand, the report estimates that 55% of the IT professionals should be at degree level, and the remainder at diploma or certificate level. As in the US, UK and Germany, Hong Kong is seeking to address this problem, at least in the short-term, through the importation of overseas skills: notably through the Government's Admission of Mainland Professionals Scheme (as mentioned earlier). However, a longer-term strategy is also being developed to improve the IT training infrastructure and to increase the supply of locally produced IT professionals.

2.3.23 The telecommunications industry in Hong Kong has undergone rapid changes over the past decade and has grown significantly in terms of employment, although more recently there has been little expansion in headcount. In the mid 1990's paging services were quickly replaced by mobile phone services and the subscription of mobile phone services in Hong Kong has now reached the highest level in Asia. Some 78% of inhabitants in Hong Kong are subscribers of mobile phone services. Hong Kong has also opened its mobile phone services market to international companies and is well placed to be at the leading edge in the provision of new products and services, especially in terms of mobile communication and computing devices.

2.3.24 Like other service industries in Hong Kong, the labour/space-intensive and low skilled operations of the telecommunications industry are leaving Hong Kong. Large companies such as PCCW have started to relocate part of their back office functions to cities like Guangzhou. The trend is expected to continue and is likely to bring about significant employment productivity changes as activities are replaced by others with a higher value added content.

2.3.25 Hong Kong is also a leading Internet hub in the region. The number of Internet users reached 2.7 million in December 2000, representing a penetration rate of 40%. There were 229 Internet Service Providers (ISP) in Hong Kong at the end of November 2000. The bandwidth for external connections is anticipated to increase 10 times when new licences are issued to the operators of cable-based external fixed telecommunications network services (EFTNS).

2.3.26 China's future integration with the global economy is expected to benefit Hong Kong's information services and telecommunications industry through increasing the demand for Hong Kong's high value added services such as ICPs, consulting services, niche product development, supporting engineering and telecom financing. As highlighted earlier, the continued growth of the Mainland China market will be in contrast to the performance of some of the more established markets.

2.3.27 In many other major cities, smaller IT companies, especially 'dot-coms' have sought to takeover older industrial buildings, often in formerly run down areas, for example in parts of San Francisco and London. In Hong Kong this has been less prevalent, not least because of the regulatory environment. However, in July 2001, the Town Planning Board announced the amendment of User Schedules for industrial zones, expanding the scope of uses permitted in the 'Industrial' ('I') zone to include IT and telecommunications industries. It is hoped that this will ease one possible barrier to the development of the sector, although to take advantage, companies will still have to pay a waiver fee.

2.3.28 Another important development was the announcement of the Cyberport in March 1999, the objective being 'to keep Hong Kong ahead in the IT race' through the provision of a high quality working and living environment supported by state-of-the-art IT infrastructure and links with universities and high tech centres. The development should be completed in three phases: early 2002, end 2002 and end 2003. Located at Telegraph Bay, Cyberport aims to attract anchor tenants, namely major MNCs in telecommunications and information services, mixed with smaller local companies to
form an ‘economic cluster’.

**Innovation and Technology**

2.3.29 Over the past 20 years, most manufacturers in Hong Kong have relocated their production functions across the boundary. They are engaged mainly in OEM manufacturing (original equipment manufacturing), taking orders from overseas customers. Their plants in South China are responsible for product assembly, while their operations in Hong Kong are responsible for order taking, finance, marketing, procurement, logistics support, and some specialist manufacturing activities such as product development and quality control. As the industrial base in South China becomes more mature, some lower value-added non-assembly activities such as quality control and data processing have also been relocated across the boundary.

2.3.30 Several companies have transformed from OEM manufacturing to ODM manufacturing (original design manufacturing). These companies carry out product design based on their overseas customers’ product concept. To advance from ODM manufacturing to producing one’s own brand of products, however, is rare among Hong Kong companies. Most Hong Kong manufacturers do not have the financial and marketing capabilities to compete in the international market. There are only a few successful cases in Southeast Asia, primarily garment manufacturers.

2.3.31 The relocation of Hong Kong’s manufacturing activities to the Mainland has started to slow down in recent years. Those who choose to stay in Hong Kong compete in the niche areas. Among them are small manufacturers, who respond quickly to customer requirements and demonstrate high flexibility. The high tech industries, which employ advanced machinery in production, find Hong Kong workers better skilled and more quality conscious. The higher cost of production can be offset by the higher product value.

2.3.32 In the Mainland plants of the Hong Kong companies, Hong Kong workers are being replaced by cheaper Mainland labour, even at the supervisory and management levels. Moreover, Mainland engineers and technicians are employed for simple product development and engineering design works. Hong Kong workers, nevertheless, still have the advantage of wider exposure and can travel freely to overseas markets.

2.3.33 The performance of Hong Kong’s innovation and technology sector is increasingly dependent on other economies in the world. Many components of technology products are now sourced from different parts of the world. The downturn of importing countries could slow down the economy of exporting countries and vice versa.

2.3.34 Changing consumer behaviour has impacted on the sector by shortening product life cycles significantly. Manufacturers need to review product features and cosmetic design regularly in order to lure consumers. They must also be able to respond quickly to the changes in market demand. Hong Kong firms are generally flexible and efficient enough to meet the needs of their customers. Products can be manufactured and rapidly delivered to customers. Many companies in Hong Kong re-engineer their procurement and production management systems in order to shorten production and delivery lead times.

2.3.35 China’s access into the WTO will lead to a removal of tariffs on technology products such as computers, semi-conductors and Internet related products by 2005. The price of technology products in China will reduce significantly, thereby increasing the demand for such products. The expansion of the China market will offer Hong Kong an opportunity to boost sales of technology products to China. However, potential
strong competition from foreign players in the China market should also be noted.

2.3.36 A number of cities are competing for the position of leading innovation and technology hub in Asia. At present Singapore is leading. Shanghai is also targeted to become one of the most competitive high tech production bases in Asia. Hong Kong's traditional business practice of focussing on short-term investment has limited the level of investment in research and development, thereby hindering Hong Kong's evolution as a high tech production base.

2.3.37 Hong Kong's innovation and technology sector has shown significant increase in labour productivity and floorspace productivity over the years, as low value added activities have been moved to South China.

2.3.38 The Hong Kong Government has sought to promote the development of the innovation and technology sector. A Science Park is being built to support technology-based companies and activities. An Applied Science and Technology Research Institute (ASTRI) has been formed to provide a midstream research capability to research and develop pre-competitive products and processes to help increase the added value and productivity of Hong Kong's industry. A Hong Kong Jockey Club Institute of Chinese Medicine Limited (HKJCICM) aims to be a visible focal point for action and co-ordination, and the world centre for the development of health food and pharmaceuticals based on Chinese medicine.

Trade, Transportation and Logistics

2.3.39 Like most economic sectors in Hong Kong, growth was rapid before the 1997 financial crisis. Subsequently, there was a decline in trade value and trade volume back to the 1995/1996 level, before the sector rebounded in 1999 and 2000. Domestic exports have declined slowly over the years due to the relocation of production functions outside Hong Kong. In 2000, domestic exports contributed only 12% of total exports. At present the largest commodity group in Hong Kong's domestic exports is the 'articles of apparel and clothing accessories' commodity group.

2.3.40 Mainland China is the principal trading partner of Hong Kong. In 2000, 43% of Hong Kong's imports, 30% of domestic exports and 35% of re-exports originated from or were destined for Mainland China.

2.3.41 The growth of Hong Kong's transportation and logistics sector is closely linked with the performance of the trading sector, although not all goods sourced by Hong Kong traders are shipped via Hong Kong. The volume of freight movement increased rapidly before 1997, its growth paused in 1998/1999, and resumed in 1999. Water borne transportation is the principal mode for the movement of goods. In recent years, advances in technology, new management practices and the broadening of service offers have improved the efficiency of the transportation and logistics sector and reduced the demand for warehouses and labour.

2.3.42 China's integration with the global economy and cross boundary issues are key for the trade, transport and logistics sector in Hong Kong. At present foreign traders are not operating with high efficiency in China. After entering the WTO, China will gradually liberalise the trading of commodities and Hong Kong traders will be able to operate fully in the Mainland. It is anticipated that WTO accession will bring Hong Kong traders more business opportunities. However, there will also potentially be strong competition from other foreign companies as the China market opens.

2.3.43 The removal of the quota system in the garment and clothing industries by 2005 might
2.3.44 Competition from neighbouring Chinese cities is also a key issue for the transportation and logistics sector. Significant investment is being injected to improve China's infrastructure, i.e. roads, railways, ports and airports. Yantian port in particular has grown rapidly and now poses a strong threat to Hong Kong port. The pattern of cargo movement in the region will undeniably change and might impact negatively on Hong Kong's transportation and logistics sector. For instance, direct links between Taiwan and China might be established, thereby reducing the volume of this cargo travelling via Hong Kong. However, in general terms, these changes and the increased competition are taking place in the context of a rapidly expanding pool of cargo (driven by Guangdong) and hence total cargo volumes shipped through Hong Kong are unlikely to decline in the medium term.

2.3.45 The sectors of trading, transportation and logistics are performing strongly (in terms of productivity) in Hong Kong relative to other economies in the region, although the logistics sector is still at an early stage of development compared with those in the western world. However, the limited capacity of cross boundary facilities / strategic links and the lack of coordination among companies in the cross boundary freight transport industry are also key issues for Hong Kong.

2.3.46 Hong Kong is also currently lacking managerial and operational skills in modern logistics. To develop Hong Kong as a logistics centre in Asia, investment in training, education and technology development is essential. In addition, strengthening the coordination between Hong Kong and Guangdong Government is vital to Hong Kong's future development in the trading, transportation and logistics sectors.

2.3.47 Finally high operation costs in Hong Kong are a concern. The lower cost of land and labour in Hong Kong's neighbouring areas such as Shenzhen has started to drive some business away from Hong Kong. Furthermore, concerns have been raised about the ability to develop suitable sites for logistics centres. Hong Kong has the unique advantage of having a major international airport and seaport in close proximity, linked by a major highway. This presents ideal opportunities for the development of logistics sites, however there are considerable planning issues to be resolved.

Creative and Media Activities

2.3.48 Hong Kong is one of the world's largest film producing and distribution centres. In 2000, a total of 150 local films were produced and local productions generated total business receipts of US$49 million from the Hong Kong market. The majority of a film's income is generated from foreign sales and Asia now accounts for 70% of the foreign sales income. Mainland China has been the second largest market for local films since 1998.

2.3.49 Films produced in Hong Kong are gaining international recognition. To compete internationally, the local film industry now focuses more on quality of production over quantity.

2.3.50 The Hong Kong Government has actively promoted the industry and assisted local and overseas filmmakers in recent years. To nurture the industry's long-term development, two sites of 44,400 sq. m in total at Tseung Kwan O were recently granted for pre-production, shooting and post-production of films for theatrical release.

2.3.51 At present the Chinese film market is restricted. When Mainland China joins the WTO,
the number of foreign films allowed to be screened will rise and foreign investors will be allowed to invest in film production and distribution in the country. This will offer Hong Kong’s film industry a significant opportunity to expand its horizons.

2.3.52 Hong Kong’s television programme industry has been growing steadily over the years, stimulated by the issuing of new television programme service licences. Four new domestic pay television programme service licences have recently been granted by the Government, generating over 100 additional pay TV channels. Hong Kong’s television broadcasters also sell their products to overseas markets through video, licensing of programmes to foreign broadcasters and satellite distribution of programming.

2.3.53 Hong Kong is also a publishing centre and a major news hub in the region. Most international publishers set up subsidiaries in Hong Kong to manage the production, marketing and distribution of books for the regional market and also for export back to their domestic market. The United States is currently Hong Kong’s largest export market, contributing to over 40% of exports of printed books, newspaper, pictures and other printed products. The Mainland China market is currently restricted but the market has huge potential to expand with the literacy of the population. Hong Kong publishers also have the potential to market translated Chinese literature to the world.

2.3.54 Advancement in technology in recent years has allowed the publishing industry to expand quickly through providing multi-media products and on-line publishing services. Web publishing businesses are expected to grow rapidly, attributed to the high level of computer and Internet skills of Hong Kong’s population.

Tourism

2.3.55 Tourism is a key economic sector in Hong Kong. The industry generated $61 billion of revenue in 2000, accounting for about 4% of Hong Kong’s GDP. About 10% of Hong Kong’s employment is directly or indirectly related to the tourism industry.

2.3.56 Visitor arrivals increased steadily from 7 million in 1991 to 13 million in 1996. Average annual growth in the period from 1991 to 1996 was as high as 13%. In late 1997, the trend reversed temporarily, with visitor arrivals falling to 10 million in 1998. Visitor arrivals however returned quickly to the peak level of 13 million in 2000.

2.3.57 Over this time period Mainland China visitors have become the largest source market. Mainland visitors accounted for 29% of visitor arrivals in 2000.

2.3.58 The majority of visitors to Hong Kong (particularly North Asia and Mainland visitors) are vacation visitors. In 2000, 55% of visitors came to Hong Kong for vacation purposes. Business visitors accounted for about 30% of visitor arrivals in 2000.

2.3.59 Three key factors will significantly influence the performance of the tourism industry in Hong Kong in the 21st century:

- the development of Hong Kong Disneyland for operation by 2005 – agreement with Disney was reached in late 1999;
- Mainland China’s prospective entry into the WTO; and
- the hosting of 2008 Olympic Games in Beijing

2.3.60 All factors will have a positive impact on the tourism industry of Hong Kong. Most
important, these factors will change the nature and type of demand for tourism products in Hong Kong.

2.3.61 It is widely accepted that the development of Hong Kong Disneyland will increase Hong Kong's attractiveness as a tourist destination. Disneyland will provide Hong Kong with a positive image and international profile and will attract more family groups to visit Hong Kong. The American brand English speaking Disneyland in Hong Kong will be positioned to attract visitors from countries and world regions not having a Disney theme park. The major source market outside Hong Kong will be Mainland China. Visitors from Taiwan and countries in South Asia, South East Asia, the Oceania and the Middle East will also be attracted by the western culture of the theme park.

2.3.62 It is anticipated that Disneyland will act as an "anchor" tourist attraction in Hong Kong - other new attractions and tourism products will follow to capitalise on the huge tourism potential of Disneyland.

2.3.63 The number of business visitors to Hong Kong is closely linked to its economic performance. As highlighted earlier, China’s accession to the WTO will present both opportunities and threats - the balance as yet is uncertain, however, most commentators, including the Government and the Trade Development Council, are optimistic. Many anticipate that Hong Kong will maintain its role as the Gateway to China and foreign investment will be attracted as a result of China's entry into the WTO. To meet this growth, Hong Kong will need more tourism products and hotel accommodation to cope with the potential increase in business visitors, from both Mainland China and overseas.

2.3.64 The hosting of Olympic Games in Beijing will undeniably attract a large number of visitors to Asia. Some of them may visit Hong Kong as part of their trip to Asia.

2.3.65 The Hong Kong Tourism Board anticipated that visitor arrivals will increase steadily to 19.4 million by 2006 and 24.9 million by 2011. The World Tourism Organisation estimated that visitor arrivals to Hong Kong will reach almost 20 million by 2006 and 28 million by 2011.

2.3.66 Outbound tourism has also been growing rapidly over the past decade, as reflected by the increase in Hong Kong resident departures. Travelling across the boundary for recreation / leisure purposes is an important recent trend to note. In 2000, 50 million Hong Kong resident departures were for the Mainland (85% of Hong Kong resident departures). According to the 2000 Cross Boundary Travel Survey, 45% of Hong Kong residents who departed for the Mainland made regular visits (i.e. at least once a month). It was estimated that 17% of the trips were for shopping / leisure purposes. Shenzhen area was the most popular shopping / leisure area capturing over 90% of the trips. Over 60% of shopping / leisure trip makers made shopping / leisure trips to the Mainland at least once every 2 weeks. In addition, many Hong Kong residents went to the Mainland to spend their vacation in their own properties there, primarily in Shenzhen and Dongguan areas. Over 70% of them went at least once in 1 to 2 weeks.

2.3.67 The hotel and retail sector will benefit the most from the anticipated strong growth in Hong Kong's tourism industry. Positive impacts will however be limited for other sectors directly related to tourism. Recent advances in telecommunications have allowed customers to purchase airline tickets on-line from airlines directly, thereby taking away some business from travel agents and airline ticket agents. Moreover, tour operators are pessimistic about their future as they believe that a significant amount of visitors will purchase tickets to Disneyland and other tourist attractions directly from the operators or through other channels, thereby limiting their profit
2.4  Key Issues for Economic and Land Use Change

2.4.1 Abstracts from the above analysis highlight some of the key factors affecting economic and land use change, many of which are common to all or many of the sectors.

Implications of Continued Industrial and Service Sector Restructuring

2.4.2 Restructuring has continued to dominate the industrial and, now in particular, the service sectors in Hong Kong as it has done in most of the major economies and finance centres worldwide. In the industrial sectors, the adoption and spread of new technologies have stimulated the restructuring and transformation of various activities as companies seek to cut down operating costs.

2.4.3 The key feature of Hong Kong’s industrial restructuring over the past 20 years continues to be the relocation of production functions across the boundary. However, whereas in the past these functions were mainly OEM, as the industrial base in South China becomes more mature, some lower value-added non-assembly activities such as quality control and data processing have also been relocated across the boundary. As has happened with globalisation of European and US manufacturing it is likely that the remaining Hong Kong companies will be transformed into ODM operations. We have also seen that the number of MNCs engaged in the manufacturing sector has not only declined over time but, by 2000, almost half of the MNCs with regional headquarters in Hong Kong were now engaged in the distribution or financial and business services sectors. This is the transformation that MNCs have undergone in their home countries and this same restructuring will be a key trend in Hong Kong.

2.4.4 Hong Kong is now following the other major financial centres in restructuring through consolidation, acquisitions and merging activities in the financial and business services sector. This trend mirrors that of financial MNCs in New York and London and, as in these cities, we have noted that small and medium institutions are expected to follow suit. Other global restructuring trends in the service sector are reaching Hong Kong as the labour/space-intensive and low skilled operations, in, for example, the telecommunications industry, are being relocated to cities like Guangzhou. The main impact on Hong Kong will be significant employment productivity changes which can also be expected to affect the demand for service sector floorspace.

Impact of Technological Change on Working Practices

2.4.5 As the economy moves towards the service sector, distribution and the higher value added manufacturing processes, the principal technological change now affecting Hong Kong are the advances in Internet and telecommunication technologies. These have enabled companies to relocate some of their back office operations, such as data processing and customer services centres, to lower cost areas outside the CBD and to the PRD. In other countries such as the UK and USA this trend has resulted in the creation of specialised “all centres” - dedicated businesses and associated floorspace. Initially these have been in regions outside of higher cost city centre locations, however the trend has now widened to include the development of “call centres” located in different countries, with lower costs but also with adequate international communications infrastructure and a suitable pool of English language skills: India being a prime example. In Hong Kong it is still more the case of relocation of back office functions outside the CBD but the trend here is also likely to see increasing
movement to the PRD where language skills are similar. Advancement in technologies has also allowed customers to access banking and other financial services through the Internet. In tourism, recent advances in telecommunications have allowed customers to purchase airline tickets on-line from airlines directly, reducing property demand from travel agents and airline ticket agents.

2.4.6 However, some of these technology drivers have worked in the opposite direction, for example, allowing the publishing industry to expand quickly through providing multimedia products and on-line publishing services which are expected to grow rapidly attributing to the high level of computer and Internet skills of Hong Kong's population. Similarly Hong Kong's competitiveness in the international economy has been enhanced by developments in IT and communications - accessibility of information was considered as the second most important factor in the selection of regional headquarters location by MNCs to Hong Kong. It is likely that future advances in IT will strengthen Hong Kong's position as the preferred regional headquarters location in Asia for this growing cadre of international companies.

2.4.7 These technology trends will inevitably reduce the demand for labour and floorspace in the CBD of Hong Kong as the demand for branch offices and customer services centres falls. However, they may herald an increase in the demand for non-CBD "business" space - though the PRD can be seen as strong competition for this demand. The move to "homeworking" as has occurred in the West Coast of the USA or to "combined living and workspace" - as has occurred in a fringe around Central London does not seem to have been borne out by the culture and environment of Hong Kong. Singapore has however recently introduced its "Technopreneur Home Office Scheme" which allows technology-based, knowledge intensive activities, which do not affect the character, ambience and environment of a residential area to register with the Government to carry on business from home. The business and social trend is now however moving away from teleworking internationally where it is seen to isolate workers, bring extra responsibilities for time management and, in some cases, increase unemployment. The main beneficiaries have been those living in remote areas of countries - a relatively unimportant issue in Hong Kong.

Changes in Productivity of Employment and Floorspace

2.4.8 These restructuring and technological change trends have had a significant impact on the productivity of employment and floorspace with sub-sectors such as financial markets and fund management services and insurance services showing a significant increase in floorspace productivity in the recent years. However, many companies in Hong Kong are still at an early stage of business process re-engineering and related improvements in productivity which means that an increasing rate of change can be expected in the medium to long term.

2.4.9 The increase in productivity is a result of two distinct factors. Firstly, Hong Kong's industrial sectors have shown significant increases in labour productivity and floorspace productivity over the years, primarily because low value added activities have been moved to South China. Similarly, the advancement in technology, new management practices and the broadening of service offers have improved the efficiency of the transportation and logistics sector and reduced the demand for warehouses. It is primarily in the technology, media and other service sectors that productivity changes have occurred in situ and it is here that high productivity space developments in Hong Kong such as the Science Park have been formed to help increase the added value and productivity of Hong Kong's industry. Similarly the Applied Science and Technology Research Institute (ASTRI) is also geared to improving the performance of these high value-added sectors.
Impact on Human Resources

2.4.10 As Hong Kong evolves towards a knowledge based economy focusing on high value added activities and thereby demanding highly educated professionals, so there will also be constraints on economic development and the demand for land, property and human resources. For example, Hong Kong is facing an IT skills shortage as the demand for all levels of IT skills continues to grow. In the short-term, Hong Kong is seeking to address this problem in part, through the importation of overseas skills: notably through the Government’s Admission of Mainland Professionals Scheme. This is a similar strategy to that used by the US, UK and Germany. However, Hong Kong is also developing a longer-term strategy to improve the IT training infrastructure and to increase the supply of locally produced IT professionals.

2.4.11 Other key skill shortages include managerial and operational skills in modern logistics and investment in training, education and technology development is essential. There is also in this and other sectors, an important relationship between the labour markets of Hong Kong and the rest of the PRD. In the Mainland plants of the Hong Kong companies, Hong Kong workers are being replaced by the cheaper Mainland labour, even at the supervisory and management levels. Moreover, Mainland engineers and technicians are now also employed for simple product development and engineering design works. Thus the co-ordination between Hong Kong and Guangdong Government in the development of human resources is vital to Hong Kong’s future development.

Changing Cross Boundary Cargo and Passenger Logistics

2.4.12 The physical effect of cross boundary links is perhaps not as significant as might be expected. The main issue has been the limited capacity of cross boundary facilities / strategic links and the lack of co-ordination among companies in the cross boundary freight transport industry. There is however broad consensus that these constraints will be addressed.

2.4.13 In the passenger sector, the 2000 Cross Boundary Travel Survey shows that Hong Kong residents who departed for the Mainland are increasingly making regular visits and that trips were mostly for shopping / leisure purposes and that many Hong Kong residents went to the Mainland to spend their vacation in their own properties there, primarily in the Shenzhen and Dongguan areas.

2.4.14 Experience here is similar to the experience of the Eastern European countries in the movement of goods and people into the EU countries following the liberalisation of their economies in the early 1990s. Apparent physical capacity constraints were quickly overcome through strategic investments by national governments, development agencies and the private sector. The greater constraints were regulatory and institutional - likewise for Hong Kong.

Institutional and Regulatory Change

2.4.15 As all developed economies have found, one of the most significant factors for economic change have been regulatory changes in the country concerned, in competing countries and, in particular, in world trading regulations. These changes can impact slowly but significantly over time such as the imposition of European Union trading regulations or suddenly such as the changes in monetary systems (for example, the introduction of the Euro) or telecommunications regulatory systems.
2.4.16 There are many such regulatory changes which are and will continue to affect Hong Kong. As outlined in the previous sections these include:

- the freely convertible RMB in the Mainland;
- the introduction of the Mandatory Provident Funds scheme and the health care reform currently being considered by the Government which has begun to inject significant amounts of investment into the local financial market;
- deregulation of Singapore's financial system, presenting new competitive challenges for Hong Kong;
- the debt burden of major telecoms MNCs following the competitive bidding for 'Third Generation' (3G) licences;
- the opening of Hong Kong's mobile phone services market to international companies;
- the issuing of new licences to the operators of cable-based external fixed telecommunications network services (EFTNS), which is expected to increase the bandwidth for external connections 10 times;
- the Government's "Admission of Mainland Professionals Scheme";
- the removal of the quota system in the garment and clothing industries by 2005 which might reduce Hong Kong's trade volume; and
- the issuing of new television programme service licenses - four new domestic pay television programme service licences have recently been granted by the Government, generating over 100 additional pay TV channels.

2.4.17 Although difficult to predict, most of these changes will have a significant impact on the development of the Hong Kong economy and ultimately on the demand for property and land. Indeed some changes in planning and property regulations can be expected to have a direct effect. As mentioned earlier, in July 2001, the Town Planning Board announced the amendment of User Schedules for industrial zones, expanding the scope of uses permitted in the 'Industrial' ("I") zone to include IT and telecommunications industries.

**Implications of China's Entry to the WTO**

2.4.18 Clearly the most significant external regulatory change, and the one that will most affect cross boundary economic activity in nearly all sectors is China's prospective entry into the WTO - Mainland China being the principal trading partner of Hong Kong. Increasingly, global players use Hong Kong as their springboard for the China market and, at the same time, many Chinese enterprises set up new operations in Hong Kong aiming to get into the global market. We have seen that many of these companies rely on Hong Kong's financial institutions for funding and many professionals in Hong Kong's business services sector need to travel regularly across the boundary and an increasing proportion of them will have to relocate to the Mainland. This will increase significantly with accession to the WTO.

2.4.19 China's accession will lead to a removal of tariffs on technology products such as computers, semi-conductors and Internet related products by 2005, reducing prices significantly and thereby increasing the demand for such products. The expansion of China's market will offer Hong Kong an opportunity to boost sales of technology
products to China. Moreover, when Mainland China joins the WTO, the number of foreign films allowed to be screened will rise and foreign investors will be allowed to invest in film production and distribution in the country. This will offer Hong Kong's film industry a significant opportunity.

2.4.20 At present foreign traders are not operating very efficiently in China. After entering the WTO, China will gradually liberalise the trading of commodities. Whilst Hong Kong traders will be able to operate fully in the Mainland, potentially strong competition will come from other foreign companies.

2.4.21 In world tourism and business travel terms, many anticipate that Hong Kong will maintain its role as the Gateway to China and foreign investment will be attracted as a result of China's entry into the WTO. To meet this growth, Hong Kong will need more tourism products and hotel accommodation to cope with the potential increase in business visitors, from both Mainland China and overseas.

2.4.22 However, WTO entry will also create new competitive pressures. Significant investment will be injected to improve China's infrastructure, i.e. roads, railways, ports and airports, with China's WTO accession. The pattern of cargo movement in the region will undeniably change and might impact negatively on Hong Kong's transportation and logistics sector. For instance, direct links between Taiwan and China might be established, thereby reducing the volume of cargo travelling via Hong Kong.

2.4.23 Overall it is clear that the WTO effect will stimulate the growth of employment in Hong Kong's technology, trading, distribution, financial, business and tourism services sector and therefore the demand for floorspace will grow as the volume of business through Hong Kong increases. International experience shows that there is likely to be a short-term impact but then a general levelling off of growth as China's business environment and infrastructure improve. The analysis has also noted that the WTO effect will undeniably intensify the competition between Hong Kong and other Chinese cities in the longer term.

Globalisation and Competition

2.4.24 All of the above issues and trends, and in particular the entry of China into the WTO can be seen as the increasing globalisation of Hong Kong's economy, not least as China’s economy globalises. This is the most significant underlying factor in the future of the SAR's economy. More global players use Hong Kong as base for the China market but the effect is not limited to the relationship with China alone. The performance of Hong Kong's innovation and technology sector is increasingly dependent on other economies in the world. Many components of technology products are now sourced from different parts of the world. We have noted that the current downturn of importing countries in the technology sectors could slow down the economy of exporting countries and vice versa.

2.4.25 There is also a significant competitive effect in globalisation. For example, Singapore is Hong Kong's main competitor for MNC headquarters location. Since the Asian financial crisis, Singapore has started to deregulate its financial system to stimulate foreign direct investment. Compared with Hong Kong, Singapore has stronger technological capability and its workforce generally possesses better language skills. However, it has been undermined by recent political and economic crises in ASEAN countries, and weakening markets for its high-tech exports. Nevertheless, the competitive "threat" remains.

2.4.26 Potential strong competition from globalising Chinese cities such as Shanghai has
also been noted. Shanghai's infrastructure, both hardware and software, has improved
enormously in the recent years, strengthening its role as the financial and business
centre in China. Shanghai is also targeted to become one of the most competitive high
tech production bases in Asia. With WTO accession, China will also be obliged to
improve its financial infrastructure, information transparency, rule of law and public
sector services, and it is expected that Chinese cities such as Shanghai will challenge
Hong Kong's status. This can be expected only in the medium to long term, however,
since it will take some time for Chinese cities to fully integrate with the global
economy.

2.5 Conclusions

2.5.1 The opening section of this chapter identified three phases of the development of the
Hong Kong economy since the Second World War culminating in the period of Hong
Kong-China economic integration from the early 1980's onwards. The changes
between each phase have been marked by a significant structural shift in each case.
Within each phase there have been cyclical trends in output, employment, investment
and the use of land but the underlying trends have been of steady predictable growth.
Forecasting within these periods has been reasonably straightforward and reliable.
Identifying when the structural shifts between phases happen has been more difficult
although it has been possible to identify a structural change that has taken place in
retrospect and the factors that have determined it.

2.5.2 The remainder of this chapter has then tried to identify the sectors and economic
factors that are likely to affect the future of Hong Kong's economy in the medium to
long term - focusing on the sectors which the Government believes are likely to drive
the economy in this period. Perhaps the most important conclusion from this analysis
is that Hong Kong's economy is now undergoing another long term structural shift in its
role, associated with the globalisation of the world economy and, in particular, the
globalisation of the economy of China leading up to, and subsequently implementing,
membership of the WTO. In retrospect it is likely that the turn of the millennium will
have proved to be the critical period of adjustment of the Hong Kong economy to its
global economic role for China as a whole.

2.5.3 In practice this makes the present point in time a difficult period to use as a basis for
forecasting. More specifically, as the analysis has shown, there is always significant
uncertainty in floorspace demand as a result of these structural changes in the past
and this can be expected to be the same at the present time.

2.5.4 Nevertheless floorspace forecasting methods can be set now which recognise these
changes and are flexible enough to accommodate change as it occurs. Similarly the
land use typology - for which we are forecasting - must be flexible enough to
accommodate these structural changes. The first important factor to recognise is that
the most important structural change drivers are not occurring at the sectoral level.
These are not changes that primarily affect manufacturing, or are leading a shift to the
service sector as have occurred in the past. It is therefore less useful to adopt land use
typologies or forecasting methods that are mainly sectorally based.

2.5.5 Secondly, it is therefore important to identify the cross sectoral factors which are likely
to drive these structural changes. Section 2.4 has identified some of the most
important of these and the consultants have particularly highlighted the following
factors from the analysis:

- the continuing process of structural change which will itself make the demand
  for floorspace more difficult to predict;
- technology and other changes leading to changes in productivity of floorspace
and employment;

- technological change leading to changes in the level and type of demand;

- China's entry to the WTO which will be the single most important factor in Hong Kong's global economic role;

- Hong Kong's competitive position and the important role of property and land availability, quality and price in attracting investment - particularly in various new or special forms of economic uses for which site requirements have not been identified in the existing typology;

- changes in institutional and regulatory regimes, including cross boundary changes; and

- human resources constraints which may restrict demand and will lead to floorspace being used in different ways.

2.5.6 For the purposes of the HK2030 strategy, it is therefore most important to adopt land use typology and forecasting techniques which are:

- flexible;

- cut across land use and economic sectors; and

- sensitive to structural change factors such as those above.
3. CHANGING PROPERTY AND LAND REQUIREMENTS

3.1 Changing Property and Land Use: Hong Kong Experience

Economic Restructuring

3.1.1 The restructuring of the Hong Kong economy during the last decade has been the most critical factor affecting the property requirements of economic activities in the SAR. The process has taken place at a pace faster than what was previously anticipated. The rapid decline of the manufacturing sector, the strong growth of the service sector and the resultant changes in property requirements, which have been analysed in Chapter 2 above, have been well reported in a number of completed planning and sector studies. The main findings of these studies are discussed below.

3.1.2 All economic indicators pointed towards a continued dominance of the service sector. This important economic trend has led to a surge in the demand for office accommodation, a decline in the demand for conventional industrial premises and the emergence of a number of new property products for both conventional and new economic activities. Key property development trends and development policies formulated in response to the changing property requirements will be discussed under the topics of:

- office decentralisation;
- new typology for industrial uses;
- upgrading and restructuring of obsolete industrial areas (OIAs);
- reduction of surplus of industrial land;
- creation of a land bank for economic uses.

Office Decentralisation

3.1.3 The development trends and patterns of private and Government offices in the SAR were examined in OLDS (1999). The Study stressed that existing commitments and potential development will lead to significant office decentralisation from the CBD to non-CBD areas within the Metro Area. The CBD will expand gradually but will progressively become a less dominating office location. The non-CBD areas in the Metro Area will gain a progressively higher share as a result of the large supply of offices. The potential for office decentralisation to non-metro areas is however very limited by year 2011.

3.1.4 The office development pattern based on existing commitments and potential supply has promoted the development of new office nodes with a view to providing a wider locational choice for office users. The creation of new office nodes along existing and future rail networks predominantly on the Kowloon side will also help alleviate the pressure on the transport system.

3.1.5 However, OLDS pointed to the need to monitor the provision of offices, particularly in non-CBD areas in the Metro Area, in order to maintain the role and competitiveness of the CBD and to achieve a higher level of decentralisation to non-Metro Area. The Study also emphasised that a clear hierarchy of office nodes should be provided and the requirement of an adequate critical mass of accommodation should be adopted at
An office development strategy was therefore formulated to help review office development proposals under planning and influence the rate of market led redevelopment towards appropriate office locations.

**New Typology for Industrial Uses**

3.1.6 The restructuring of the Hong Kong economy during the last decade has been the most critical factor affecting the property requirements of economic activities in the SAR. The process has taken place at a pace faster than what was previously anticipated. The rapid decline of the manufacturing sector, the strong growth of the service sector and the resultant changes in property requirements, which have been analysed in Chapter 2 above, have been well reported in a number of completed planning and sector studies. The main findings of these studies are discussed below.

3.1.7 All economic indicators pointed towards a continued dominance of the service sector. This important economic trend has led to a surge in the demand for office accommodation, a decline in the demand for conventional industrial premises and the emergence of a number of new property products for both conventional and new economic activities. Key property development trends and development policies formulated in response to the changing property requirements will be discussed under the topics of:

- General Industrial Uses (GIU) - comprise multi-storey factory buildings and Industrial-Office (I/O) buildings to accommodate a range of industrial and industrial-related activities; and

- Special Industrial Uses (SIU) - include Industrial Estates, Science Parks, Business Estates, rural workshops and specialised buildings for special industries.

3.1.8 The new typology for industrial uses has resulted in the development of a new property product - I/O buildings - in Hong Kong. The concept of I/O was in fact introduced in 1988 as a unique attempt to meet the need for mixed production and office space - composite I/O buildings are designed and constructed for both office and industrial uses and will allow greater flexibility to accommodate a suitable integration of activities ranging from manufacturing-related offices to trading firms that require large storage space and have frequent loading/unloading activities. It was confirmed in OLDS that a sizeable proportion of future office demand may be satisfied by I/O developments.

3.1.9 The implementation of the concept has however encountered a number of constraints. Although a large number of planning applications were approved in 1993 and 1994 for this type of property product, a limited number of premises have been developed over the years. In fact new industrial accommodation constructed by developers has now been targeted very much at operations which have a high level of office content and are largely of a similar quality to that of I/O premises.

3.1.10 To meet the changing needs of economic activities, a "business" zone concept has been proposed by the Study on the Review of the Framework for Industrial Land Provision and Reservation Strategy (2000) with a view to maximising the flexibility in building/land usage and property type. The "business" zone will permit clean and less fire hazard-prone industrial activities to be co-located with office and other commercial activities within the same building. It is anticipated that the property market can more readily respond to the changing needs of the industrial/business sectors. The types of buildings and uses will be permitted as of right in the "business" zone will include business buildings, commercial buildings, industrial and I/O buildings accommodating
non-polluting uses. In fact in the early 1990’s the outline implementation strategy of ROBINA had already recommended reviewing the appropriateness of "I" zoning and considered whether or not a more flexible "employment" zone is required.

3.1.11 Apart from introducing new zoning category, existing zoning restrictions are being relaxed to provide property users higher level of flexibility in the use of space. In 2001, the Town Planning Board announced the amendment of User Schedules for industrial zones, expanding the scope of uses permitted in the "Industrial" ("I") zones to include IT and telecommunications industries.

3.1.12 The Survey to Ascertain Parameters for Forecasting Employment Distribution (2001) has confirmed the need for a more flexible land use. It is not uncommon for service industries to be accommodated in industrial buildings: in 2000, 26% of occupied floorspace in flatted factories were used for import/export activities, 4.7% for business services, 2.6% for community, social and personal services and 1.1% for the real estate industry. At the same time, 6.4% of occupied floorspace in office buildings was occupied by manufacturing enterprises.

**Upgrading and Restructuring of Obsolete Industrial Areas**

3.1.13 Industrial obsolescence is also a key area of concern in the planning of Hong Kong’s Metro Area. Industrial obsolescence has caused a waste of land resources since industrial premises/land cannot be used for other purposes under current planning and land policies. The Urban Renewal Study (2000) revealed that at present there are about 1,600 industrial buildings in the Metro Area, three quarters of which will be 20 years old or above by 2007. In addition there are also 14 Housing Authority flatted factory estates in the Metro Area. ROBINA (1993) concluded that if the problem of industrial obsolescence is left unattended, existing problems in obsolete industrial areas (OIAs) such as industrial/residential interface, excessive building densities, traffic congestion and inadequate parking and loading/unloading facilities would continue.

3.1.14 ROBINA Case Studies (1997) demonstrated that there were insurmountable constraints on the private sector implementation of area wide industrial area restructuring. Although the private sector will have a key role to play in rehabilitation and redevelopment of OIAs, it can only do so with the support of an enabling agency armed with a variety of existing, modified existing and possibly new institutional mechanisms. It was suggested that the most appropriate implementation arrangement would be the establishment of a statutory Urban Renewal Authority (URA) which should be charged with specific responsibility for industrial area restructuring in a geographically defined special control area. It would offer support and planning and financial incentives on a selective basis to encourage site assembly and coordinate any necessary relocation of existing occupiers.

3.1.15 The Study stressed that the planning for the restructuring of the OIAs should be undertaken within a broad policy context on urban renewal in Hong Kong and the Government should adopt a pluralistic, area based and incremental approach and initiate the industrial restructuring process by undertaking a demonstration project.

3.1.16 The Study on the Review of the Framework for Industrial Land Provision and Reservation Strategy echoed that the Government should be more proactive by promoting the upgrading of environmental conditions of OIAs and by redefining the roles of existing industrial areas in order to better serve the industrial/business sector. It was envisaged that the proposed "business" zoning would stimulate market led redevelopment and would be conducive to the restructuring of the OIAs. To minimise undue disruption to economic activities and employment, detailed area specific
assessment was completed in 2000 to help prepare site specific rezoning proposals and as an input to an overall industrial land provision and reservation strategy. Some of the industrial land was rezoned in accordance with the recommendations of the area assessment. For the remaining industrial land, detailed rezoning proposals are being prepared by the relevant District Planning Offices.

3.1.17 The Urban Renewal Study also recognised the long term need for a comprehensive approach to industrial area renewal, in particular the OIAs and the old flatted factory estates managed by the Housing Authority. It was accepted that planning tools such as upzoning and the planning application system alone might not be able to bring about changes effectively. However the Study pointed out that the focus of the future URA in its initial years of operation should be on residential redevelopment. In the interim the Study proposed that the URA should adopt the following selective approach in the renewal of industrial sites:

- to facilitate comprehensive redevelopment of some existing old industrial areas which are ripe for redevelopment; and
- to include old industrial buildings adjacent to or inter-mixed with a group of residential buildings for comprehensive redevelopment.

3.1.18 In 2001, the Government formally announced the introduction of a set of guidelines for development within "Other Specified Uses" annotated "Business" ("OU (Business)") zone. A total of 165 ha of land (40% in Kwun Tong/Kowloon Bay, 22% in Kwai Chung and the rest evenly distributed in Hong Kong Island, Kowloon and the New Territories), have been identified as suitable for rezoning into "Business" use. The outline zoning plans for concerned districts have been or are being revised to show the change in zoning. The following are new developments or redevelopment or conversion of the whole buildings permitted as of right in the "OU(Business)" zone:

- business buildings for a mix of non-polluting industrial, office and other commercial uses
- office buildings with or without retail and other commercial uses
- industrial buildings for non-polluting industrial and ancillary office uses
- I/O buildings for non-polluting industrial and offices directly related to industrial uses, with or without commercial uses.

3.1.19 It is anticipated that the rezoning will speed up the redevelopment in traditional industrial districts and increase the supply enormously.

3.1.20 OIAs may be revitalised by introducing new types of uses. For instance, temporary use of industrial buildings for cultural purposes was recommended by Cultural Facilities: A Study on Their Requirements and the Formulation of New Planning Standards and Guidelines (1999).

Reduction of Surplus of Industrial Land

3.1.21 The decline in the demand for industrial premises over the last decade has created a reservoir of un- or under-utilised industrial floorspace and surplus land reservation. The Study on the Reduction of Surplus Industrial Land in the Metro Area (1996) and the Study on the Review of the Framework for Industrial Land Provision and Reservation Strategy recommended considering the use of surplus industrial land for other purposes including office, retail, hotel, residential and open space with a view to
improving the general environment of the area, meeting the present shortage of housing and providing deficit facilities in the area. The Studies stressed that the redevelopment or rehabilitation of the OIAs for alternative uses would require comprehensive analysis of the OIAs within the context of strategic policies and district planning intentions. Factors such as surrounding land uses, environmental and traffic conditions, physical building condition, economic development potential, type of tenure, etc. should be taken into consideration.

3.1.22 In 1997 PIPNIB estimated that there will be a potential surplus of GIU reservation of 115 to 140 net ha of land by 2011 and recommended rezoning some industrial land at suitable locations for other uses. Since July 1997, the Town Planning Board has approved the rezoning of about 86 ha of industrial land initiated by the Planning Department and agreed to change some 20 ha of industrial land for mainly residential and commercial uses. It was estimated in 1999 by the Study on the Review of the Framework for Industrial Land Provision and Reservation Strategy that there would be a potential surplus of 66 ha of industrial land by 2016. The Study recommended adopting a more proactive but cautious approach to free up industrial land for other types of uses needed in the district without leading to unnecessary loss of job opportunities. The White Paper on Long Term Housing Strategy in Hong Kong (1998) also highlighted the need to rezone more industrial land and redevelop suitable under-used flatted factory estates for housing development where infrastructure and environmental conditions permit.

Creation of a Land Bank for Economic Uses

3.1.23 PIPNIB (1997) considered that the reservation of land for SIU should be policy driven. Since 1997, a number of studies have been conducted to examine the demand for and the planning of SIUs - including the Science Park Study (1998), the Business Park Study (1999) and the Consultancy Study for the Hong Kong Industrial Estates Corporation (HKIEC) (2000). Land has been reserved for an extension to the Tseung Kwan O Industrial Estate (20 ha) and the fourth industrial estate at Tseung Kwan O (55 ha), a science park at Pak Shek Kok (26 ha), a business park at the airport island and industrial and potential hazardous uses at Tseung Kwan O.

3.1.24 The Government has also responded positively to a private sector proposal on the creation of a Cyber Port to meet the property demand for high technology production sectors - specifically in telecommunications and information technology. Telegraph Bay has been selected as the location of the Cyber Port and 26 ha of land has been reserved to make room for an integrated R & D and business development, supported by housing, education, leisure, recreation and commercial facilities.

3.1.25 The Study on the Review of the Framework for Industrial Land Provision and Reservation Strategy revealed that the rezoning of over 100 ha of industrial land to other uses in the past two years has virtually exhausted most of the stock of undeveloped industrial land. In the absence of a long term strategy for the reservation of SIU land, the Government can only play a reactive role, in response to a policy initiative or an expressed demand. It was suggested that a land bank for long term industrial/business use should be established in order to better cater for possible future demand for SIU.

3.2 Implications of Economic Change for Property and Land Use: International Experience

Overview
3.2.1 For land reservation purposes, many cities, including Hong Kong, classify employment land conveniently into two broad categories: commercial uses (which include retail, hotel and office uses) and industrial uses. In some cases office uses are separated from other commercial uses. The land needs for special uses such as airports and ports are always considered separately by different approaches.

3.2.2 For forward planning and economic development purposes, there is a general trend for planning/economic development authorities to encourage the mixing of uses (commercial, industrial, residential and community uses) to achieve a number of planning/economic development objectives:

- to promote efficient use of land resources;
- to fully utilise the capacity of infrastructure;
- to enhance the vibrancy of employment areas;
- to promote job balance;
- to minimise the need to commute;
- to facilitate the development of businesses by providing a wide range of economic incentives and assistance.

3.2.3 In many cities, commercial and industrial land demand projection is based on population and employment forecasts. Existing employment densities for different industry sectors, measured in terms of workers per floor area or land area, are analysed and future employment densities assumptions are applied for larger communities which have good data sources. The availability of economic and property data by industry sector is often a determining factor to the demand assessment approach adopted. Various demographic and economic factors are considered by economists when employment forecasts are produced. Projection methods are generally trend based when no good data is available and target based for long term forecasting. An econometric forecasting methodology is sometimes employed as a tool for assessing land demand. In some cases demand forecasts produced are adjusted to take account of factors such as technology change. Demand forecasts are revisited regularly to cope with changes. The typology for forecasting is very much dependent on the characteristics of different economic sectors in the use of property/land, as well as the availability of the required data. In the context of international experience, we believe that Hong Kong has already made the best use of data available to project land needs by analysing the characteristics of different economic sectors.

**Singapore**

3.2.4 Singapore is Hong Kong's major comparator in Asia. According to the newly released Concept Plan 2001 (the long-term plan for Singapore's physical development for the next 40 to 50 years), the vision is for Singapore to be an economically vibrant city-a city driven by cutting-edge technology, high value-added industries and services, a global financial centre with strong infrastructure and a city empowered to compete in the international arena.

3.2.5 Over the years, planning controls for employment related uses in Singapore have been relaxed to offer developers and architects greater design flexibility, with a view to meeting the changing needs of businesses.

3.2.6 The concept of "White" sites was introduced in 1995 by the Urban Redevelopment
Authority (Singapore URA), the urban planning authority, to give developers more flexibility in development options. Developers have the flexibility to decide on the mix of uses and respective quantum of floor space for each use. Successful tenderers of "White" sites may, during the lease period, change the mix of use or quantum of each use as stipulated in the conditions of tender without the need to pay differential premium. This is to allow "white" site developers to respond to changing market conditions without incurring additional land premium.

3.2.7 In 1998, the Singapore URA relaxed two existing controls for industrial and warehouse developments. Ancillary office content within an industrial and warehouse building was lifted from a maximum of 25% of total GFA to a maximum of 40% of total GFA. The new control also allowed ancillary warehouse use to be computed as part of the 60% predominant use quantum.

3.2.8 In 2000, the Singapore URA revised planning guidelines to allow e-businesses to be accommodated in Light Industry, General Industry, Warehouse and Business Park sites. Previously e-businesses were freely allowed in Commercial and Commercial/Residential zones only. E-businesses in Residential zones were required to be registered as a Technopreneur Home Office. In Industry/Warehouse zones, e-businesses were allowed if they were supporting the main use. Under the new guidelines, businesses relating to Info-comm infrastructure and software applications will be allowed as part of the 60% predominant use quantum in Light Industry, General Industry, Warehouse and Business Park zones. Businesses which use software applications to conduct business electronically but do not develop software in-house, largely dot.com offices, will be allowed as part of the remaining 40% quantum of these zones. It was believed that the relaxation would allow start-ups to have a wider choice of locations for their office and they could take up flatted factory or warehouse units at cheaper rates.

3.2.9 Independent commercial uses such as banks, offices, and restaurants were previously not allowed in Business Park zones. In 2000, Business Park guidelines were revised to allow up to 15% of total GFA for "white" uses, i.e. offices, shops, banks, restaurants, showrooms and fitness and recreation centres. A minimum of 85% of total GFA would be retained for Business Park component, comprising the usual 60% for uses such as R&D, software development, etc. and 40% for ancillary uses. It was believed that developers and owners of Business Park sites would have greater flexibility to build facilities which share synergies with Business Park activities on their sites for the convenience of businesses and their workers.

3.2.10 In 2001, the Singapore URA introduced a new "Business Park-White" zone and relaxed development control guidelines for Business Park and Industrial and Warehouse developments. Under the new guidelines, the "white" quantum in the Business Park-White could exceed 15% of total GFA, subject to evaluation on a case-by-case basis. The allowable quantum for "white" uses will depend on factors such as land use compatibility, proximity to MRT stations, road capacity and traffic congestion levels. At the same time, the minimum land area requirement, the minimum provision requirements for public green and private green, floor-to-floor height control were relaxed to allow industrialists and developers to optimise land use and meet the needs of the new businesses. The setback requirement for industrial and warehouse developments was also relaxed to allow larger floor plate and thereby greater efficiency in loading and unloading of goods.

3.2.11 The "Concept Plan 2001" recently released by the Singapore URA contains seven key proposals. One of which is to provide greater flexibility for businesses in Singapore. To realise the concept, a new zoning system will be implemented (Figure 3.1):

- industrial and business activities will be grouped according to their impact on the surrounding environment. New business zones will be introduced, with B1
for non-pollutive uses and B2 for pollutive uses;

- a new "white" zone will be introduced, allowing all uses except pollutive ones.

**Figure 3.1 New Zoning System in Concept Plan 2001, Singapore**

3.2.12 This new 'impact-based' zoning approach will allow businesses to house different uses under one roof and change activities easily without rezoning. This will also create the potential for mixed-use buildings and work-live-learn-play environments.

3.2.13 The proposal of greater flexibility for businesses is supported by the public. A number of respondents consulted during public consultation requested that the proposal of greater flexibility for businesses be implemented as soon as possible, given the present economic slowdown.

3.2.14 To help realise the changes in land use plans, Singapore revised its Differential Premium System in 2000 with a view to encouraging intensification of land use and facilitating urban redevelopment. Landowners holding State titles with restrictive covenants wishing to intensify the use of land or to use the land for different purposes are required to pay a differential premium. The amount of differential premium was previously based on the full difference between the land values based on the proposed and original use/intensity. Under the new Differential Premium System,
differential premium will be computed based on 50% of the difference in land value, a basis similar to the Development Charge System for owners of lands on titles without such covenants. The new Differential Premium System will be based on the published Table of Development Charge Rates to provide greater certainty for developers who will be able to compute the differential premium payable. The table of rates is reviewed regularly to take into account price movement in the property market. The revamp of the Differential Premium System, which will reduce the risk for developers, is welcomed by property experts and developers.

**Tokyo**

3.2.15 "Tokyo Plan 2000" is Tokyo's long term plan for the years from 2001 to 2015. According to the Plan, Tokyo Megalopolis Region is anticipated to grow further as a hub city in Asia and as a city to lead the prosperity of Japan. Tokyo is positioned to be a dynamic and attractive large city that can survive the international competition of the 21st century. Tokyo will be remodelled into a world city and the national capital based on the "Ring Megalopolis Concept" (Figure 3.2). The concept divides Tokyo into five areas:

- Center Core - urban space of high quality with diverse functions (commercial, cultural, residential and business)
- Water and Greenery Ring - comfortable living environment for the population
- Tokyo Bay Waterfront Urban Axis - urban spaces with diverse functions (business, commerce, housing, entertainment and leading edge industries)
- Urban Axis Linking up Core Cities - industrial and high quality residential areas
- Natural Environment - for recreation purposes.

3.2.16 The Center Core area comprises Metropolitan Center, subcenters and new bases. The Metropolitan Centre (Central Ward Area) is Japan's political and economic centre. The continuous conversion to business use over the years had resulted in a drop in resident population and the decline of the community. The excessive concentration of business and commercial facilities in the city centre had brought about serious problems such as wider separation of homes and workplaces and traffic congestion. To solve the problems, the business and commercial master plan formulated in 1994 encouraged the decentralisation of businesses and commercial facilities to subcenters. Subcenters are large-scale bases equipped with business, commercial, cultural, entertainment, residential and other living functions. The "Subcenter Development Plan" set out the vision for the seven subcenters in Tokyo Central Ward Area (Figure 3.3). The business decentralisation policy was however scrapped in late 1990's. Tokyo Plan 2000 encourages the concentration of business functions in the entire Center Core area, with a view to strengthening Tokyo's function as an international business centre.

3.2.17 There are 12 land use zonings and 5 special use zonings in Tokyo's present zoning system. Seven zonings are related to employment uses:

**Land Use Zoning**

- neighbourhood commercial districts;
- commercial districts;
- quasi-industrial districts;
- industrial districts;
- exclusive industrial districts;

**Special Use Zoning**

- special industrial districts;
- special business districts.

*Figure 3.2 Ring Megalopolis Concept, Tokyo Plan 2000*

Source: Bureau of City Planning, Tokyo
3.2.18 The vision for the City of Sydney beyond 2000 is to become a "clever city". The city has positioned itself as a regional centre for commercial activities of all kinds, particularly the high value-added financial services, information technology and telecommunications (IT&T) industries. The city is rich in financial and business capital, is the gateway to Australia and possess an attractive range of options for telephony and data transmission. Sydney sees Hong Kong and Singapore as the major competitors in the region and believes the low tax policy has contributed to the success of these cities. The city feels that the Australian tax system has been the main factor hindering Sydney to leap into the top rank of global cities and is considering to carry out tax reform to promote economic growth.

3.2.19 The City of Sydney has adopted a planning system which offers a high level of flexibility. Central Sydney Planning Controls, comprising Central Sydney Local Environmental Plan, Central Sydney Heritage Local Environmental Plan and Central Sydney Development Control Plan, provide an urban planning framework for the development and conservation of the city. According to Central Sydney Local Environmental Plan (2000), there are five broad types of zoning in Central Sydney - City Centre Zone, City Edge Zone, Residential Zone, Maritime and Transport Zone, Parks and Community Places Zone (Figure 3.4). Objectives are set out for each type of zoning. Development consent is generally required for different types of development activities.

3.2.20 One of the objectives of the City Centre Zone is to encourage Central Sydney's role and growth as one of the Asia-Pacific region's principal centres for finance, commerce,
retailing, tourism, cultural activities, entertainment and government. Within the City Centre zone, development may be carried out, but only with development consent and only in accordance with a development plan. Development plans may be prepared by the owner of the site(s), or a person authorised by the owner, in consultation with the consent authority; or by the consent authority in consultation with the owner of the site(s), or with a person authorised by the owner.

3.2.21 Commercial premises, including offices, may be developed in City Edge zone and certain part of the Maritime and Transport zone, but only with development consent.

Figure 3.4 Zoning Map, Central Sydney Local Environmental Plan

Source: Central Sydney Local Environmental Plan 1996
3.2.22 New York City has positioned itself as the capital of the world. The City is the world's financial capital and is playing a global command post in the business services, fashion, media, culture and technology sectors. The City is also a popular tourist destination. According to the Strategic Policy Statement delivered by the Mayor in 1999, New York City will build on its economic successes in the past and continue to pursue its policies of lowering business taxes, streamlining regulations and improving public services to secure economic growth and opportunity.

3.2.23 New York City employs a zoning system which offers a high level of certainty. The Department of City Planning believes that it is very important to give communities, developers and regulators a clear sense of what is and is not allowed in a given district. The City enacted United States' first comprehensive zoning resolution in 1916 and the City continues to be a leader in zoning policy in the States. The 1916 Zoning Resolution separated functionally incompatible uses and established height and setback controls. The ordinance became a model for urban communities throughout the United States.

3.2.24 The Zoning Resolution of New York City is divided into two parts: zoning text and zoning maps. The text establishes zoning districts and sets forth the regulations governing land use and development. There are three basic zoning districts: residential, commercial and manufacturing. Detailed regulations in the zoning text set out the use permitted, building density, parking requirements and other detailed design guidelines. Manufacturing uses and certain intense commercial uses are also subject to performance standards which limit noise, air pollution and other nuisance-creating activity.

3.2.25 Within the broad commercial zoning district category, office buildings are allowed in two out of the eight specific commercial districts: "Restricted Central Commercial Districts, C5" and "General Central Commercial Districts, C6". The remaining six specific commercial districts are for retail, entertainment and recreational uses at different scale and location. The broad manufacturing zoning district can be further divided into three specific manufacturing districts: "Light Manufacturing Districts, M1", "Medium Manufacturing Districts, M2" and "Heavy Manufacturing Districts, M3", based on performance standards.

3.2.26 Flexibility in the zoning system is provided by allowing discretionary actions. Some development may be allowed if Special Permits are secured from the City Planning Commission or the Board of Standards and Appeals.

3.2.27 In response to the changing needs of the changing city, the Zoning Resolution is amended regularly. In 2000, the Department of City Planning presented a zoning proposal to facilitate Long Island City's transformation into a central business district. The proposed zoning changes address critical commercial development needs of the City by allowing large mixed-use buildings to be constructed on sites located one or two subway stops east of Midtown Manhattan. The proposal is anticipated to generate as much as five million square feet of new commercial development.

3.2.28 In addition, a wide range of planning tools (including incentive zoning, contextual zoning, waterfront zoning, mixed use zoning, special districts, air-rights transfer and restrictive covenant techniques) have been used to make zoning more responsive and sensitive to the changing needs of New York City. Examples include the designation of New York Empowerment Zone (Figure 3.5) in 1994 and the Harlem Internet Way 125 Technology District (Figure 3.6).
Figure 3.5 New York Empowerment Zone

Source: NYC Department of City Planning

Figure 3.6 HlWay 125, New York City
3.2.29 The New York Empowerment Zone was created to revitalise Upper Manhattan and South Bronx. The objective is to expand the range and scope of economic activity. Business of all sizes in the Empowerment Zone can benefit from tax benefits and a wide range of services and resources such as business financing, technical advice and property relocation assistance. The economic development objectives of Empowerment Zones are defined clearly. Proposals that can demonstrate the capability of meeting the objectives will have higher priorities in receiving funding or other grants. The Upper Manhattan zone focuses on four high growth industries: Entertainment / Tourism, Retail, Business Services and Health Care; proposals that fall within these industries will have higher priorities in receiving funding.

3.2.30 HIWay 125, the technology district in Upper Manhattan, was created to make the area one of the centers for technological advancement. The corridor is in close proximity to the midtown and downtown business districts and has commercial and industrial buildings with relatively inexpensive space to rent. The area is also immediately adjacent to two academic research institutions. HIWay 125 will incorporate the development of a technology incubator to accommodate early stage technology companies. A wide range of services and assistance will be provided to technology companies relocating or establishing in the District.

London

3.2.31 The newly established Mayor for London and the Greater London Authority (GLA) has taken over responsibility for strategic planning in London from the smaller London Boroughs and the Secretary of State since July 2000 and will produce a "Spatial Development Strategy" (SDS) for the capital. The strategy will be a new form of planning instrument with statutory force within the planning system. The current strategic planning guidance (RPG3) for Greater London, issued by the Secretary of State will be replaced. The London Boroughs' unitary development plans (UDP) will
3.2.32 Economic development and regeneration will be one of the core strategic policy areas for the SDS. The SDS will identify trends in the economic geography of the capital and the wider region and build on the London Development Agency (a newly formed regional development agency) Strategy’s analysis of London's needs. The strategy will address the development needs of business and monitor the availability of employment land and floorspace. The strategy will provide general guidance on locational criteria for new development on strategic site selection so that sufficient sites will be made available to meet business and other needs in appropriate locations.

3.2.33 The new plan will however work within the statutory planning system and specifically the Planning Acts and the Use Classes Order. As early as 1987, a general "business use" class (class B1) was introduced in the Town and Country Planning (Use Classes) Order with a view to allowing greater flexibility to change between light industrial, office and research and development uses. There are also B2 to B8 categories of special industries into which B1 and between which selected B categories can change use as of right. This allows flexibility among many types users to locate where they wish whilst introducing a clear distinction between business uses and general industry, based on environmental factors.

3.2.34 Although the SDS for London is only now in preparation it is likely that the GLA will follow the convention for other "Structure Plans" prepared by the UK's other strategic planning authorities (usually the Counties and City Councils) for land use forecasting and reservation. In these cases nearly all land for economic activities is allocated as "Employment" land irrespective of whether it is to accommodate offices, light industry, warehousing and distribution, business parks or even many forms of retailing. Only land for polluting industry, some utilities and, in particular, "town centre" uses are significant economic activity categories which are usually separately designated.

3.2.35 Finally, since the 1980's, the Government of United Kingdom has designated "Enterprise Zones" such as that in London's Docklands to encourage business development. These are not statutory planning zones but are part of the package of economic development measures available to national government. However in Enterprise Zones, planning restrictions are relaxed and tax and other benefits are offered to businesses within the zones. Current Government policy only supports the creation of new enterprise zones in exceptional circumstances since the policy was found to be unable to achieve its stated goals. However, one of the most effective aspects of the policy was found to be the relaxation of planning and zoning controls which gave businesses far more flexibility in the way they used land and property within very broad, mainly environmental, limits.

3.3 Conclusions

3.3.1 The principal conclusion from the above analysis of changing property and land use demands from economic activities is, as it has been for the last decade, the need for flexibility in use, both at the property and land level, to accommodate change. The changes which demand this flexibility exist at a number of levels in Hong Kong already:

- the need for flexibility in the use of buildings is highlighted in the experience of I/O zoning and development and, in particular, in the flexibility needed to reuse old industrial and other (eg. G/IC) buildings;
- the need for flexibility in the use and reservation of land is highlighted in the
need to reduce and rezone surplus industrial land;

- the need for long term flexibility of reservation of land is highlighted by changing locational trends as activities relocate with the port and airport or across the boundary for example. Decentralisation trends in some sectors also need more flexibility in land use reservations.

3.3.2 Each of these issues can, to some extent, be addressed by a revised approach to the formation of forecasting and reservation typologies. Within the context of this report however, the focus is on strategic forecasting and reservation which reflects the demand for floorspace and land. The recommendations for a revised typology are based on this focus. It should be noted however that the application of a revised forecasting and reservation typology to the Hong Kong 2030 scenarios should also consider:

- Supply side factors included in the above such as landbanking, rezoning and locational factors, and

- The need to consider land use zoning and development control typologies and categories that must meet more detailed and short term development planning criteria.

The implications of these factors will be considered further on the preparation and application of the forecast and reservation typologies in Working Papers 3 and 4.

3.3.3 A few factors militate against flexibility in that some activities have special requirements or constraints in their use of land or property. For example the need for environmental controls on some special activities will always be necessary and some high land value uses, in the CBD for example, may be fixed by reference to their location. Land use reservation in a high density, high land value context such as Hong Kong must be sensitive to these factors but international experience shows that there is now a relatively limited number of activities which must fall into these categories.

3.3.4 The analysis in Chapter 2 however has shown that the changes which are likely to be most important for the future of the Hong Kong economy are not easily predictable, are structural and are not contained in one sector or one land use type. However it is clear that there will continue to be changes which will impact on the use of property and land. In these circumstances, international experience has shown that flexibility is best provided by a high level of integration of the land use typology used for forecasting and for reservation of land. In countries such as the UK where the service sector has become the dominant form of economic activity, broad generic categories such as "Business" or "Employment" use are now mostly widely used rather than trying to predict or define land use types that will be needed in the future - much less the amount of each land use type required. In countries such as Japan and Singapore, where the industrial sector remains strong, a basic division between industrial and commercial land remains.

3.3.5 Hong Kong has already moved significantly in the direction of flexibility by recognising new uses such as Science Parks, the Business Zone and the "I/O" concept. All of these are more flexible in their recognition of new types of building use and the range of types of activity which can go on in these categories. However, Hong Kong's planning system has tended to add these typologies to existing categories rather than to integrate them to achieve more flexibility.

3.3.6 It is also the case that, internationally, planning systems have been more market responsive. Broader, more integrated categories of land use have been introduced to
allow businesses to adopt to changing market conditions without having to reapply for planning consents or other licences or to pay premiums for changing the way in which they use land or buildings. At the same time a greater onus is put on businesses to be willing to locate and develop alongside others which may be carrying on a very different activity, and may change that activity over time. It is not expected that the planning or other regulatory authorities should be expected to control these changes unless there is a significant environmental or other nuisance caused.

3.3.7 Much of this flexibility is achieved through the land use zoning and development control system by adopting a flexible zoning typology, such as the UK "B1" (Business) zone or the New York "Empowerment Zone" concept, but this is only possible if the initial land use reservation typology is as integrated as possible otherwise the zoning typology would become too subdivided.
4. EXISTING LAND USE TYPOLOGY AND REQUIREMENTS OF FUTURE ECONOMIC

4.1 Existing Land Use Typology for Employment Uses

4.1.1 Figure 4.1 illustrates the relationship between existing property products and the land use typology currently being employed for forecasting / reservation. In fact existing forecasting methods have already paved the way for a more simple and flexible land use typology for forecasting and reservation though these changes have had a very limited impact on the flexibility of the total stock of employment property products. The existing methods considered potential changes in economic activities and assumed enterprises will move to suitable premises to meet their needs. For instance, an expanding trading firm may move from an office building to an I/O building for more storage space and lower accommodation cost, whereas a manufacturing firm may move from a flatted factory to an I/O building when its production functions have been relocated to the Mainland.

**Figure 4.1 Existing Land Use Typology for Forecasting**

4.1.1 This typology has been evolved during forecasting studies for OLDS and ILDS and other sector studies. Most of the forecasts were first prepared in the mid 1990’s and updated subsequently in the context of the Territorial Development Strategy Review (TDSR).

4.1.2 As mentioned in Chapter 3 above, the distinction between property products available in the market become blurred over the years. It is not uncommon for office occupiers to move to flatted factories and vice versa. Flatted factories are also commonly used as warehouses. Moreover, it is anticipated that new property products such as business buildings will emerge as a result of the current rezoning of industrial land to
"OU(Business)" use.

4.1.3 The main problems of the present forecasting models for future requirements of office and industrial floor space are therefore that Hong Kong’s property products have become more mixed on the one hand and more specialized on the other. Thus present forecasting methods:

- do not recognise the overlap in important and changing markets, for example between lower grade offices and well-furnished industrial buildings,
- fail to recognise that a significant portion of existing industrial floor space is occupied by non-industrial uses which is taking up much of the new demand, and
- on the other hand there is no specific forecasting method for these emerging special land uses, such as Super Grade A offices, science parks and other special industrial uses.

4.1.4 These problems should be addressed by the new forecasting models as well as the new land use typology which recognizes these changes. Necessary actions could then be taken to rezone, reserve or produce sufficient land to meet the projected future land requirements and to cater for the market demand for a more flexible use of non-domestic floorspace.

4.2 Implications of Changing Property Uses

4.2.1 The analysis has therefore shown that there are clear implications of these changes in property use for the land use typology to be reflected in the principles for:

- long term forecasting for HK2030;
- land reservation for the HK2030 strategy;
- by implication, for land zoning and development control – though these are not the direct concern of this study.

Each of these are summarised below.

4.2.2 The implications for forecasting methodologies appear to be that the robustness of forecasts will be improved if the typology adopted is as broad and integrated at the sector level as possible. The forecasts at least will be improved not by breaking down the typology into individual sectors but by focussing on modelling the effects of structural changes in institutional and regulatory factors or technological changes. The best land use typology for forecasting purposes would be a single "employment use" category to which the forecast is to be applied. The only uses which should be excluded would be those which have sufficient "independent use" characteristics that they would not be included in the broad forecast but would be the subject of "policy driven" independent forecasts or land reservations. These would be limited in their scope and number mostly including uses independently fixed in their scale and location by geographical or resource factors such as ports, airports, mineral workings and most large scale utility service operations. It would also include other public uses such as Government offices. This allows the forecast to focus on all of the remaining economic land uses, the main common distinguishing feature of which is that demand is "market driven"
For land reservation purposes the analysis has shown that there is also a need for greater flexibility of the land use typology and that the sectoral divisions between different land uses are breaking down. Whilst it would be possible to continuously redefine the range of new and existing uses in land reservations, the consultants believe that a rigid sectoral reservation would restrict the market driven flexibility which is important to this process and therefore the widest possible use of some form of integrated "employment use category" for most market driven economic land uses would be the most useful.

However, it is also recognised that there may also be a need to accommodate within the typology some industries which exhibit characteristics that require a separate reservation by virtue of their functional and environmental characteristics including:

- location, which may be fixed with respect to other uses with which they must be co-located or must be reasonably accessible, or uses which may have to be located close to specific infrastructure facilities. Such uses may be defined in terms of their location (e.g. port related uses, CBD uses). In these cases a distinct reservation must be defined within the total of "employment uses";

- environmental characteristics, which mean that they cannot be located close to other activities. Many industries which are polluting fall into this category. Increasingly however, environmental controls over such activities and a reduction in their overall scale may reduce their impact on neighbouring uses and may mean that they can be accommodated in general employment zones. Mitigation measures such as buffering may also reduce the need for separate reservations or zones for such activities;

- distinct marketing characteristics. Some modern uses are now marketed as distinct zones from which other uses are excluded such as science parks, medical parks or the cyberport. Although many of these type of uses are the subject of special policy initiatives, in practice they are limited in scale by definition. Moreover, to a certain degree, they can serve as a substitute to conventional industrial/office developments as some of their potential tenants are currently using these conventional premises. It is thus difficult to separate the long-term demand of these "modern" economic uses which are mostly market driven uses, from other employment uses for reservation purposes ;

- basic employment uses which are independently fixed in their scale and location by geographical or resource factors such as ports, airports, mineral workings and most large scale utility service operations. It has already been noted that forecasts for these uses are usually made independently, or are policy driven, and it would be expected that these uses would be excluded from general economic forecasts and reservations.

However, it should be noted that the range of such activities is limited and becoming fewer with advances in environmental technology and accessibility. For land reservation purposes the analysis suggests that some further subdivisions of an overall "employment land" category will be required, including some for shorter term land banking purposes, but these are relatively few and limited in their scope.

Finally, although zoning and development control issues are outside the scope of a land use typology for HK2030 strategy purposes it should be noted that the integrated, non-sectoral approach advocated for forecasting and most reservation purposes is far removed from the current Column 1 / Column 2 approach to OZP zoning categories and the development control system that allows movement between uses and rezoning. In practice many of the problems of the lack of flexibility in these areas, for example for re-use purposes, will continue to restrict industrial and business change. The use of a broader typology for strategic land use reservation will not however
prevent more detailed zonings being used in OZP's. Similarly the reservation of land in a broad employment category does not constrain the release of land for land administration purposes. Land administration and sales can continue to respond to market needs from within a broad "employment" land bank created under the HK2030 land use typology.

4.3 Principles for an HK2030 Land Use Typology

4.3.1 The following principles are therefore proposed as the basis for formulating a new land use typology to be used in the HK2030 strategy:

- to maximise flexibility in the ability of different sectors to operate within any one category of the typology and of individual businesses to change activity within the category;

- to integrate categories within the typology as far as possible in order to achieve this flexibility. The aim is to establish one broad "employment use" category in the typology to include as wide a range of market driven activities as possible;

- to improve the accuracy of long term forecasting as far as possible by forecasting for a single "employment use" category within the typology and using subsequent disaggregations of that forecast to estimate requirements for other "selected" categories of land use required;

- similarly, to undertake forecasting on a long term basis (say 10 to 20 years) before disaggregating for short term forecasts and using a monitoring system to review the effectiveness of models;

- to identify "Independent" categories of land use in the typology which are not subject to economic based forecasting but will be allocated on a policy driven or other forecasting basis;

- to separate the land use typology used for HK2030 forecasting and land reservation purposes from the land use categories used for zoning and development control purposes. However the broad land use typology for HK2030 should not constrain the categorisation used for planning purposes;

- the typology should only be used for long term reservation purposes and should not constrain land administration and land sales programmes ability to meet changing market needs.

4.3.2 Figure 4.2 sets out how these principles can be applied in diagrammatic form for forecasting and reservation purposes. In this approach all "economic land uses" as defined in Chapter 1 of this report, are identified and so-called "independent" land uses which are allocated on a policy driven or other forecasting basis are separated from these for reservation purposes. The remaining market driven economic land uses are then subject to forecasting and a single forecast for all these uses can be made. However the forecast should also be capable of disaggregation for certain "selected" categories of land use from which separate reservations can be made as required.
Figure 4.2 Principles for a Forecasting and Reservation Typology

![Diagram showing principles for forecasting and reservation typology.]

- Forecasting
  - "Economic" Land Uses (Policy Driven)
  - Forecasting for Remaining "Economic" Land Uses (Market Driven)
    - Forecasting for "General" Land Uses
    - Forecasting for "Selected" Land Uses
  - Remaining "Economic" Land Use Reservations

- Reservation
  - Independent Land Use Reservations (Policy Driven)
5. RECOMMENDATIONS AND NEXT STEPS

5.1 Recommendations: Towards a Land Use Typology for HK2030

5.1.1 The land use typology that emerges from this approach and meets the principles set out above would be a significant departure from present approaches. The optimal approach is to establish a two tier typology; one for forecasting purposes and a breakdown of this for reservation purposes. The broadest, most integrated, typology would be used for forecasting purposes, which could then be broken down into as few further categories as necessary thereafter for reservation purposes. After reservation land would then be zoned for plan making and development control purposes but this is outside the scope of this typology.

5.1.2 Figure 5.1 sets out the proposed two tier typology for forecasting and reservation purposes which can be compared with the existing typology which was shown in Figure 4.1. The significant difference in the existing and the new typologies is the single "employment use IFA" category proposed for most forecasting purposes compared with the five categories used at present. This is intended to cover all "market driven" categories of employment land. The existing "independent" use categories such as government offices and other uses such as port and airport uses, which are "policy driven" rather than market driven, continue to be separately forecasted. For "modern" economic uses, such as science park, although many of them are initiated by the public sector, their long-term demand should form part of the market led demand for employment related floorspace due to the potential substitution between these two property products.

5.1.3 The typology for land reservation however also allows selected, more specific land uses such as "polluting industry" and "CBD office uses" to be allocated from the integrated forecast. As the previous sections of this paper have argued these categories of land uses have some specific characteristics such as their polluting nature, locational, value or other characteristics and thus separate reservations should be made. However it should be noted that since all of these categories are market driven and the maximum amount of flexibility in use is required as few divisions as possible are recommended and the main land use category for market driven uses in the typology remains as a broad "General Business Land" category.

5.1.4 It should be noted that within this typology most of the existing Special Industrial Uses (SIUs) including most of the Industrial Estates uses and Business Parks would now fall within the General Business Land category for reservation purposes. It is argued that, although these uses are subject to policy initiatives such as land banking policies, they remain essentially market driven economic uses. Only where these uses have specific characteristics, such as the polluting industries on the Industrial Estates, would a separate reservation be made. Subject to advice from the HK2030 Steering group and further analysis of forecasting and land supply data in Stage 2, some further special industrial uses may also still be considered for separate reservations as "selected uses" - e.g. for a Science Park.

5.1.5 A recommended two tier typology for forecasting and reservation is shown in Figure 5.2 showing the relationship between the two. The four blocks at the top of the typology include the so called "independent" derived categories and here there is a one-to-one relationship between the forecasting and reservation typology. Three principal independent groups of uses have been identified at this stage but a fourth category is shown of "other" independent uses which may be identified by the HK2030 study during consultations on these recommendations. Any other categories added to this part of the typology however should meet the criteria of being policy driven.

5.1.6 All remaining market driven uses are forecast initially in one integrated category of
"employment use" This forecast should then be used to derive a large scale "General Business Land" category for reservation purposes. However a small group of specific land uses should also be derived from this forecast to complete the land reservation typology. Two specific "selected" categories - "CBD Office Land" and "Polluting Industry Land" - are proposed but, as noted above, the HK2030 study consultations may add some categories to this list for shorter term land reservation purposes on the basis of the criteria recommended.

5.1.7 "CBD Office Land" has been identified for separate reservation because of the particular locational, quality of use (usually Grade A and Super Grade A office) and value characteristics of CBD activities. A separate reservation would maintain these characteristics and restrict competition for land between these activities and lower value but less location dependent service, industrial or distribution activities. On the other hand a CBD Office Land reservation could be made in a similar (non CBD) location (e.g. Quarry Bay) where these types of activities are willing to locate but where the supply of land in the CBD is limited.

5.1.8 "Industry Land with Special Environmental Requirements" is identified for separate reservation because of its particular environmental quality. Thus activities located here are market driven but must be segregated from other broader ranges of business activities on which they would impact. A set of standards would have to be drawn up for these activities and kept under review as technologies (both pollution making and pollution preventing) change. The level of segregation may vary and it may be possible to reserve some of this land within General Business areas with sufficient buffering and other design controls. Some will require complete segregation however. Some land use planning typologies used in other cities have broadened this category to include non polluting industry which however is space extensive and has a high proportion of production floorspace. These "Industry" or "Manufacturing" zones have typically been allocated to restrict the level of competition for land between these activities and broader business and office uses. To some extent, the OU (Industrial Estate) zoning has fulfilled this purpose in Hong Kong. We do not recommend that this approach should be used for "market driven" land forecasting and reservation in the current economic structure of the SAR but, again, a separate zoning could be created if required.

5.1.9 As noted above, there may be other categories of market driven uses which can be forecasted as part of the "Employment Use" forecast but for short term reservation purposes at least may require a separate reservation or land bank creation by virtue of their special nature. This might include for example a Science Park allocation (to be made in conjunction with a research or educational institution) or a "Logistics park" (to be developed in conjunction with a transport facility). The typology is capable of further subdivision to meet these requirements if required.

5.1.10 This typology approach meets the principles set out and reflects the analysis of changing property needs, and is therefore recommended for consideration by the HK2030 study.

Figure 5.1 Proposed Land Use Typology for Forecasting
Figure 5.2 Recommended Typology for "Economic" Land Uses
5.2 Implementation of the Land Use Typology for HK2030

5.2.1 To implement the new land use typology for forecasting, the aggregate "employment use" will be linked to the existing classification of property products in Hong Kong. As mentioned above, "employment use" will include property products for which the demand is primarily market driven. In ILDS and OLDS, we considered the demand for private offices, private flatted factories, private I/O and private storage was market driven and assessed the demand using an econometric forecasting approach. Housing Authority flatted factories and private specialised factories were however excluded in the forecasting model because at that time it was considered that their demand was primarily supply led and driven by public policies.

5.2.2 For HK2030 study, we propose to include Housing Authority flatted factories and private specialised factories as "employment use" as we feel that the demand for these property products is increasingly dependent on the performance of the economy, more than the supply of premises or public policies. Uses excluded will include employment uses within buildings/structures without an occupation permit, such as some informal industrial uses in rural areas. Given these uses are not, and will not be, mainstream employment uses in Hong Kong, excluding these uses in the forecasting model should not affect its performance significantly. The components of the proposed aggregate "employment use" for forecasting purposes are presented in Table 5.1.

<table>
<thead>
<tr>
<th>Office Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Property Products</strong></td>
</tr>
<tr>
<td>Private Offices</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Industrial Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Property Products</strong></td>
</tr>
<tr>
<td>Private Flatted Factories</td>
</tr>
<tr>
<td>Private I/O</td>
</tr>
<tr>
<td>Housing Authority Flatted Factories</td>
</tr>
<tr>
<td>Private Storage</td>
</tr>
<tr>
<td>Private Specialised Factories</td>
</tr>
</tbody>
</table>

*excluding uses within buildings/structures without an occupation permit

5.2.3 The demand for "employment use" will be assessed using the econometric forecasting approach to be recommended in Working Paper 2. The projected demand will be matched with existing and future supply of property products to determine the additional land requirements (or surplus) for various economic uses. The future supply of various property products will be a total of committed supply, where buildings are under construction or under firm planning, and potential supply where land is zoned for various employment uses. The land use zonings to be considered in the assessment of potential supply are contained in Table 5.2.
### Table 5.2 Components of the Aggregate Employment Use (Potential Supply)

<table>
<thead>
<tr>
<th>Uses</th>
<th>Land Use Zonings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office</td>
<td>&quot;Commercial&quot;</td>
</tr>
<tr>
<td></td>
<td>&quot;Commercial/Residential&quot;</td>
</tr>
<tr>
<td></td>
<td>&quot;Comprehensive Development Area&quot;</td>
</tr>
<tr>
<td></td>
<td>&quot;Other Specified Uses&quot;</td>
</tr>
<tr>
<td></td>
<td>- &quot;Business&quot;</td>
</tr>
<tr>
<td></td>
<td>- &quot;Cyberport&quot;</td>
</tr>
<tr>
<td></td>
<td>- &quot;Commercial Uses with Railway Development / Public Transport Facilities&quot;</td>
</tr>
<tr>
<td></td>
<td>- Others - where office use may be permitted</td>
</tr>
<tr>
<td>Industrial</td>
<td>&quot;Industrial&quot;</td>
</tr>
<tr>
<td></td>
<td>&quot;Other Specified Uses&quot;</td>
</tr>
<tr>
<td></td>
<td>- &quot;Industrial Estate&quot;</td>
</tr>
<tr>
<td></td>
<td>- &quot;Industrial/Office&quot;</td>
</tr>
<tr>
<td></td>
<td>- &quot;Science Park&quot;</td>
</tr>
<tr>
<td></td>
<td>- &quot;Business Estate&quot;</td>
</tr>
<tr>
<td></td>
<td>- &quot;Trade Mart&quot;</td>
</tr>
<tr>
<td></td>
<td>- &quot;Industrial/Godown Use&quot;</td>
</tr>
<tr>
<td></td>
<td>- Others - where industrial use may be permitted</td>
</tr>
</tbody>
</table>

### 5.3 Next Steps

5.3.1 This approach to forecasting and reservation typologies is submitted for consideration by the HK2030 Study Steering Group, including in particular consideration and identification of any other specific market driven reservation categories and policy driven forecasting and reservation categories.

5.3.2 Taking into account the recommendations of WP1 and the views of the Steering Group, the existing forecasting models will be reviewed and new forecasting approaches will be recommended in the next stage of economic planning work.
Appendix A1: Financial and Business Services

Financial and Business Service Industry

Data Source: C&SD

Floorspace
Financing, Insurance and Business Services Industry
Banking Industry

Data Source: C&SD
Banking Industry

Data Source: C&SD
Financial Markets and Fund Management Services Industry

Data Source: C&SD
Professional Services Industry

Data Source: C&D
Appendix A2: Multinational Corporations

Data Source: C&SD
Appendix A3: Information Services and Telecommunications

Data Processing and Tabulating Services Industry

Data Source: C&SD
Occupations Relating to Information Technology Functions

Data Source: C&SD

Telecommunications Industry
Data Source: C&SD
Appendix A4: Innovation and Technology

Electronics Industry

![Graph showing the number of establishments and annual percentage change from 1990 to 1999.](image)

![Graph showing the value added (million HK$ at 2000 prices) and annual percentage change from 1990 to 1999.](image)
Biotechnology

- The biotechnology industry in Hong Kong comprises mainly companies in the drugs and medicines sector (including Chinese medicines). Latest (1999) industry statistics show that there are 180 manufacturing establishments in the drugs and pharmaceutical sector, employing about 2,589 people. Value added reached HK$569 million in the year. Most of the drugs are either sold locally or to the mainland.

- There are 61 licensed manufacturers of western drugs. Most of them are engaged in the production of generic drugs (i.e. off-patent drugs). According to the implementation schedule laid down by the Department of Health, they have to comply with Good Manufacturing Practice (GMP) by 2002.

- The Chinese medicine manufacturers are mostly small in size and manufacture products under their own brand names. The Chinese Medicine Bill passed in 1999 provides a regulatory framework for facilitating the use, trading and manufacture of Chinese medicine, and to recognise the professional status of Chinese medicine practitioners. Regulation of Chinese medicine will begin in 2001.
Manufacturing of Drugs and Medicines

- **No. of establishments**
  - **No. of establishments**:
    - 200
    - 250
    - 200
    - 150
  - **Annual % change**:
    - 4%
    - 3%
    - 2%
    - 1%
  - **Legend**: 
    - No. of establishments
    - Annual % change

- **No. of persons engaged**
  - **No. of persons engaged**:
    - 2000
    - 2500
    - 2000
    - 2500
  - **Annual % change**:
    - 5%
    - 4%
    - 2%
    - 1%
  - **Legend**: 
    - No. of Persons Engaged
    - Annual % change

- **Value added (HK$ million at 2000 price)**
  - **Value added**:
    - 400
    - 500
    - 600
    - 500
  - **Annual % change**:
    - 20%
    - 15%
    - 10%
    - 5%
  - **Legend**: 
    - Value added at constant price at year 2000 (HK$ million)
    - Annual % change
Current Supporting Infrastructure and Facilities

- Hong Kong has been building the technological infrastructure for its biotechnology sector. Founded in 1988, the Hong Kong Institute of Biotechnology (HKIB) has become one of the best-equipped manufacturing technology centres for vaccines and biopharmaceuticals in Asia, complying with current Good Manufacturing Practice. In 1997, HKIB established the Hong Kong Pharmaceutical Technology Centre that provides technical support services on GMP implementation to local pharmaceutical industry to upgrade its manufacturing processes so that the products can be exported worldwide. HKIB also has a plant biotechnology programme that develops cost-effective micro-propagation processes for products which include traditional Chinese medicines (TCM) and ornamental plants.

- The universities also possess state-of-the-art research facilities and are pursuing research in a number of biotechnology fields. Over the past few years, the Government has supported a number of Chinese medicine-related research and infrastructural projects under the Innovation and Technology Fund. Funding in excess of $100M has been committed. Such support has enabled the five local institutions (The University of Hong Kong, The Chinese University of Hong Kong, Hong Kong University of Science and Technology, Baptist University of Hong Kong and Hong Kong Institute of Biotechnology) to acquire state-of-the-art facilities and build capabilities to pursue drug discovery, pre-clinical development, manufacturing process development, analytical characterisation and quality control of Chinese medicinal materials.

- The process of translating research results from laboratories to commercial applications involves many inter-linking steps. Hong Kong's current limitation is a lack of midstream R&D capability. This has restricted the ability to turn upstream research into commercially viable products. The setting up the Applied Science and Technology Research Institute is to co-ordinate and undertake midstream R&D in the various sectors including biotechnology with a view to developing concepts and innovative ideas into pre-competitive and generic technologies for eventual commercialisation by firms.

- In July 1999, the Government announced a ten-year roadmap for the development of a Chinese medicine-based industry in Hong Kong. The roadmap sets out in broad terms the steps that have to be taken and areas that need to be addressed within the framework of free market principles, for Hong Kong to become an international centre for Chinese medicine by 2009.

Environmental technology

- Global market forecasts for the environmental industry are varied, not least because of the difficulty in clearly defining and measuring the industry. Table below presents growth forecasts for different regional blocs from 1992 to 2010. The global environmental market was estimated to be about US$210 billion in 1992, growing to US$320 billion in 2000 and US$570 billion by 2010. The US and western Europe constitute the largest markets, though the US share is predicted to decrease slightly from 40% in 1992 to 35% by 2010 and the western Europe share from 29% to 25% over the same period. Japan is the third largest market with a projected value of US$72 billion in 2010.
### Global Environmental Market Forecasts

(Unit: US$ billion)

<table>
<thead>
<tr>
<th>Regional Blocs</th>
<th>1992</th>
<th>2000</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>N. America</td>
<td>100</td>
<td>147</td>
<td>240</td>
</tr>
<tr>
<td>USA</td>
<td>85</td>
<td>125</td>
<td>200</td>
</tr>
<tr>
<td>W. Europe</td>
<td>60</td>
<td>89</td>
<td>144</td>
</tr>
<tr>
<td>E. Europe</td>
<td>5</td>
<td>9</td>
<td>23</td>
</tr>
<tr>
<td>Asia-Pacific</td>
<td>85</td>
<td>63</td>
<td>149</td>
</tr>
<tr>
<td>Within which</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td>30</td>
<td>44</td>
<td>72</td>
</tr>
<tr>
<td>East and SE Asia (excluding Mainland China and Japan)</td>
<td>5</td>
<td>12</td>
<td>50</td>
</tr>
<tr>
<td>China</td>
<td>2</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>World Total</td>
<td>210</td>
<td>320</td>
<td>570</td>
</tr>
</tbody>
</table>


- More importantly for Hong Kong, the market in China and East and Southeast Asia is expected to show a strong growth, both in absolute and relative terms, with its share in the global market rising from 3% to 12%. Taken together, the Asian regional market could exceed western Europe's by 2010.

- Hong Kong's own industrial upgrading and environmental improvement has fuelled the development of a local environmental industry. However, most local firms in the sector are service providers, specialising in offering different kinds of environmental evaluation and assessments, and in the design, construction and operation of municipal environmental infrastructure. Many are owned by large international companies - such as engineering consultancies or waste management service providers. For the most part they serve the Hong Kong market, in which Government spending features heavily, followed by services to international corporate clients.

- Home-grown manufacturers of environmental equipment are relatively scarce. There are a few examples of manufacturers who have successfully produced various types of water-treatment equipment for different industries - such as the construction industry and the electroplating industry - and compact treatment units for restaurants. The price of land and the absence of landfill charge discourage local recycling activities - much of the recyclable wastes that are recovered are shipped to mainland China for reprocessing, an exception being waste oil where government waste regulations have helped to create an environment within which a local oil recycling operation has been able to expand.

- **Service Market**: Consulting, engineering and analytical services have historically been dominated by British consulting firms and local construction groups. In recent years, US, German, Japanese, Dutch, French and Chinese competitors have been active in the local market seeking to increase their market share. The services market is heavily influenced by the size and direction of Government spending on environmental infrastructure - which has been substantial over the last 10 years in waste management, wastewater treatment, drainage and other areas. Environmental services for the corporate sector have had a lower profile, but include due diligence work for regional investments, environmental audits and impact assessments, and application of corporate environmental management systems. With the general relocation of manufacturing to south China, the local market for industrial pollution control services is reduced.
• **Equipment Market**: At a world level, Hong Kong tends to be a standards follower rather than leader (adopting European or US standards as appropriate). Categories of environmental equipment employed in Hong Kong based on trade data include 1:

i. Domestic type machinery & apparatus, for filtering;
ii. Intake air filters for internal combustion engines;
iii. Gas pumps & compressors;
iv. Filtering & purifying machinery & apparatus;
v. Parts of filtering/purifying machinery & apparatus;
vi. Parts of pumps & compressors.

This is a smaller market than that for infrastructure projects, although entry is easier for both domestic and foreign, small and medium size firms. In Hong Kong, 90% or more of this environmental equipment is imported from overseas. Key uses are for air quality and waste water treatment. Leaders in this field are the US, followed by Germany, Britain, France, Japan and Italy. Products imported in the past were usually large systems.

Most of the Hong Kong industrialists focus on the low-end market because of lower technological requirements and R&D expenditure. The equipment is usually small in size and sold locally.

• **Eco-products**: As with contract manufacturing, it represents a broad process change rather than a discrete area of new opportunity within a single sector. The impacts are also difficult to measure – there often being a continuum of environmental performance, and marketing of a product more or less tuned to match it. This aspect of product evolution is not revealed in trade statistics but is nonetheless important, for some sectors more than others. A SWOT analysis on HK Eco-industry is provided below.

<table>
<thead>
<tr>
<th>SWOT for Hong Kong Eco-Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strengths</strong></td>
</tr>
</tbody>
</table>
| Access to mainland market + HK-owned industrial base in Guangdong  
Hong Kong ahead on the environmental investment curve - apply locally acquired experience to relevant sectors.  
Strong environmental service sector. | Weak technological base in the sector  
Lack of sector experience & modest local market size  
Capacity & absence of export/other financial leverage into markets |
| **Opportunities** | **Threats** |
| Partnering foreign technology providers into China market as enforcement tightens up + environmental investment increases. | Strong overseas competition from established players  
Emerging mainland providers with engineering know-how, low costs & market access. |
Portable medical devices

- At present, the participation of Hong Kong manufacturers in this market is limited to blood pressure monitors, temperature monitors, and massagers, mostly manufactured and exported under OEM arrangements. The total export of these products increased rapidly, from HK$ 1.7 billion in 1997 to HK$2.1 billion in 1999. In 1999, the United States accounted for about half (48.1%) of Hong Kong’s exports in this field. This was followed by Germany (12.2 %), Japan (6.7%) and the United Kingdom (6.7 %).

**Total Exports of Portable Medical Devices (Unit: HK$’000)**

<table>
<thead>
<tr>
<th>Portable Medical Devices</th>
<th>1997</th>
<th>1998</th>
<th>1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ultrasonic Scanning Apparatus</td>
<td>23,081</td>
<td>31,369</td>
<td>33,023</td>
</tr>
<tr>
<td>Electro-Diagnostic Apparatus</td>
<td>11,079</td>
<td>5,612</td>
<td>6,050</td>
</tr>
<tr>
<td>Parts/Accessories of Electro-Diagnostic Apparatus</td>
<td>52,483</td>
<td>34,903</td>
<td>38,386</td>
</tr>
<tr>
<td>Mechno-Therapy Appliances</td>
<td>1,208,992</td>
<td>1,392,627</td>
<td>1,445,742</td>
</tr>
<tr>
<td>Instruments/Appliances for Medical and Surgical Sciences</td>
<td>437,441</td>
<td>496,300</td>
<td>595,316</td>
</tr>
<tr>
<td>Total</td>
<td>1,733,076</td>
<td>1,960,812</td>
<td>2,118,516</td>
</tr>
</tbody>
</table>

Source: Hong Kong External Trade Statistics

- **Market Opportunities**: The medical electronics industry is attractive, being a large market with high profit margins. The world market for medical and health care products is growing for a number of reasons. Developed countries are seeing an expansion of their elderly population. As this older cohort spend more money on medical and health care products, demand is growing strongly. In addition to this, the rising income of large developing countries (e.g. Mainland China) is further enlarging the size of the global market.
Major Markets for Hong Kong's Exports of Portable Medical Devices, 1999

Source: Hong Kong External Trade Statistics

High precision industrial machinery

- Industrial machinery and apparatus (HSIC: 3865)

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of establishments</th>
<th>No of people engaged</th>
<th>Annual % change</th>
<th>Value added at constant price at year 2000 (HK$ million)</th>
<th>Annual % change</th>
<th>Value added per person at constant price at year 2000 (HK$ million)</th>
<th>Annual % change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>168</td>
<td>3,756</td>
<td>NA</td>
<td>1,322</td>
<td>NA</td>
<td>0.35</td>
<td>NA</td>
</tr>
<tr>
<td>1993</td>
<td>189</td>
<td>3,354</td>
<td>-4%</td>
<td>1,091</td>
<td>-6%</td>
<td>0.33</td>
<td>-3%</td>
</tr>
<tr>
<td>1996</td>
<td>144</td>
<td>2,596</td>
<td>-8%</td>
<td>970</td>
<td>-4%</td>
<td>0.37</td>
<td>5%</td>
</tr>
<tr>
<td>1999</td>
<td>85</td>
<td>1,988</td>
<td>-8%</td>
<td>1,270</td>
<td>10%</td>
<td>0.64</td>
<td>24%</td>
</tr>
</tbody>
</table>

- Hong Kong's machinery industry, which has achieved an excellent reputation, is moving towards high-quality, precision manufacturing. Hong Kong's manufacturers have been adopting advanced technologies in their production processes. Advanced metal cutting machines, machining centres, electrical discharge machines, jig-boring and jig-grinding machines, are widely used. Co-injection, double injection and elastomer injection machinery and the full electric plastic injection machine are also being developed. The major manufacturers have enhanced their efficiency and reduced machine idling time by utilising multi-pallet machining centres or flexible manufacturing systems (FMS) which integrate Computer Numeric Control (CNC) machining centres with automatic guided vehicles and loading and unloading systems.

- Mechatronics, an integrated application of mechanical, electronic and computer engineering technologies, is used in the industry to design new products and systems to enhance productivity and quality. The technology enables the production of
industrial machinery of reduced mechanical complexity and increased performance with new capabilities.

Reference

1 This analysis, by Hong Kong Trade Statistics and Customs, is based on the OECD's definition of environmental equipment, as requested by the US-AEP.
Appendix A5 : Trade, Transportation and Logistics

External Trade Indices

Data Source: C&SD

Import / Export Industry
Land Transport Industry
Data Source: C&SD

Marine Transport Industry

Air Transport Industry
Trend of Freight Movement

Source: PMB

Distribution of Freight Movement by Mode of Transport

Source: PMB
Appendix A6 : Creative and Media Activities

Film Industry

Data Source: C&SD
Appendix A7: Tourism

Tourism Industry

Source: HKTB

Hong Kong Resident Departures by Destination

Source: C&SD

Travel Agents and Airline Ticket Agents