



發展局 綠化、園境及樹木管理組  
Greening, Landscape and Tree Management Section - Development Bureau

Greening, Landscape and Tree Management Teaching Kit 綠化、園境及樹木管理教材



# 人樹共融 綠滿家園

PEOPLE • TREES • HARMONY

Greening, Landscape  
and Tree Management  
Teaching Kit

綠化、園境及  
樹木管理教材







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**PEOPLE  
TREES  
HARMONY**





# Foreword

I am delighted to present this teaching kit on greening and tree management.

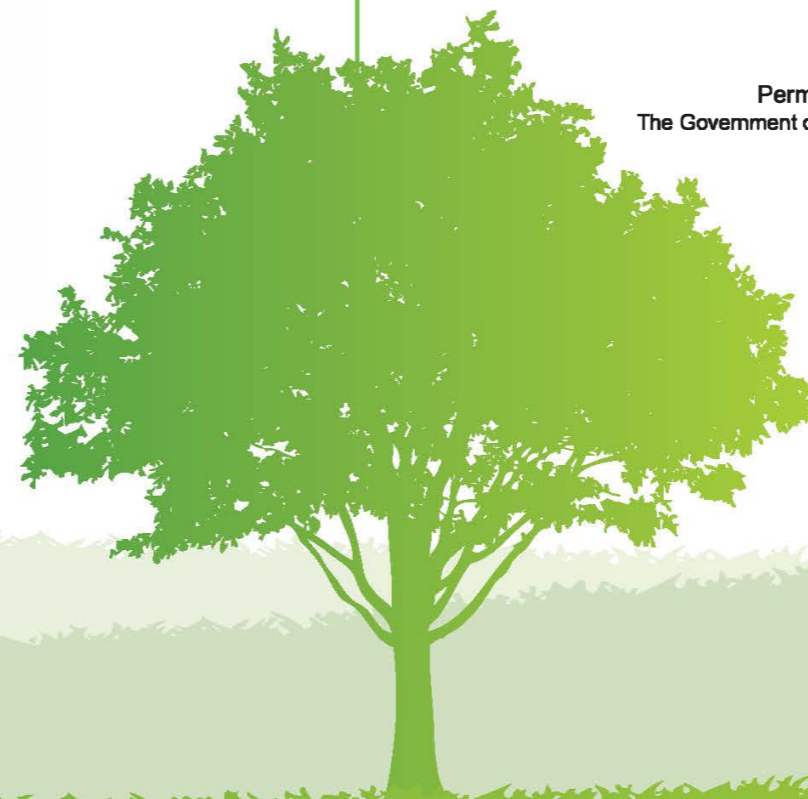
The teaching kit aims to incorporate the topics of greening, landscape and tree management in Hong Kong into the New Senior Secondary Curriculum. It serves as an in-depth introduction to the changes in Hong Kong's landscape as well as to the inter-relationships between human activities and the natural environment, the Government's work in greening, landscape and tree management, the challenges and opportunities ahead and the role of the general public.

We hope that by enhancing students' knowledge and awareness of greening, landscape and tree management, we will build a greener and better environment together for everyone to enjoy.

I sincerely hope that teachers and students alike will find the teaching kit practical and useful.

Paul M P Chan  
Secretary for Development  
The Government of the Hong Kong Special Administrative Region

陳茂波



# Preface

The landscape we see today in Hong Kong is shaped by its unique geographical location, geological environment and historical factors. With huge demand for land from its large population and various development needs, the Hong Kong Government has to strike a balance between development and promoting greening and resource conservation work. At present, country parks and rural land account for about 70% of the total land area of Hong Kong. Thanks to our urban greening initiatives, the ratio of overall green area in Hong Kong is one of the highest among developed countries or cities.

We hope that the Greening, Landscape and Tree Management Teaching Kit, published by the Greening, Landscape and Tree Management Section of the Development Bureau and compiled by the Hong Kong Liberal Studies Teachers' Association, will enrich the learning experience of students of the New Senior Secondary Curriculum, enhance their awareness of and participation in their surroundings, inspire them to form their own opinions and, last but not least, encourage them to join us in greening the city and conserving our valuable tree resources.

WAI Chi-sing  
Permanent Secretary for Development (Works)  
The Government of the Hong Kong Special Administrative Region

韋志清





Chapter **1**

Landscape Change in the  
Urbanisation of Hong Kong

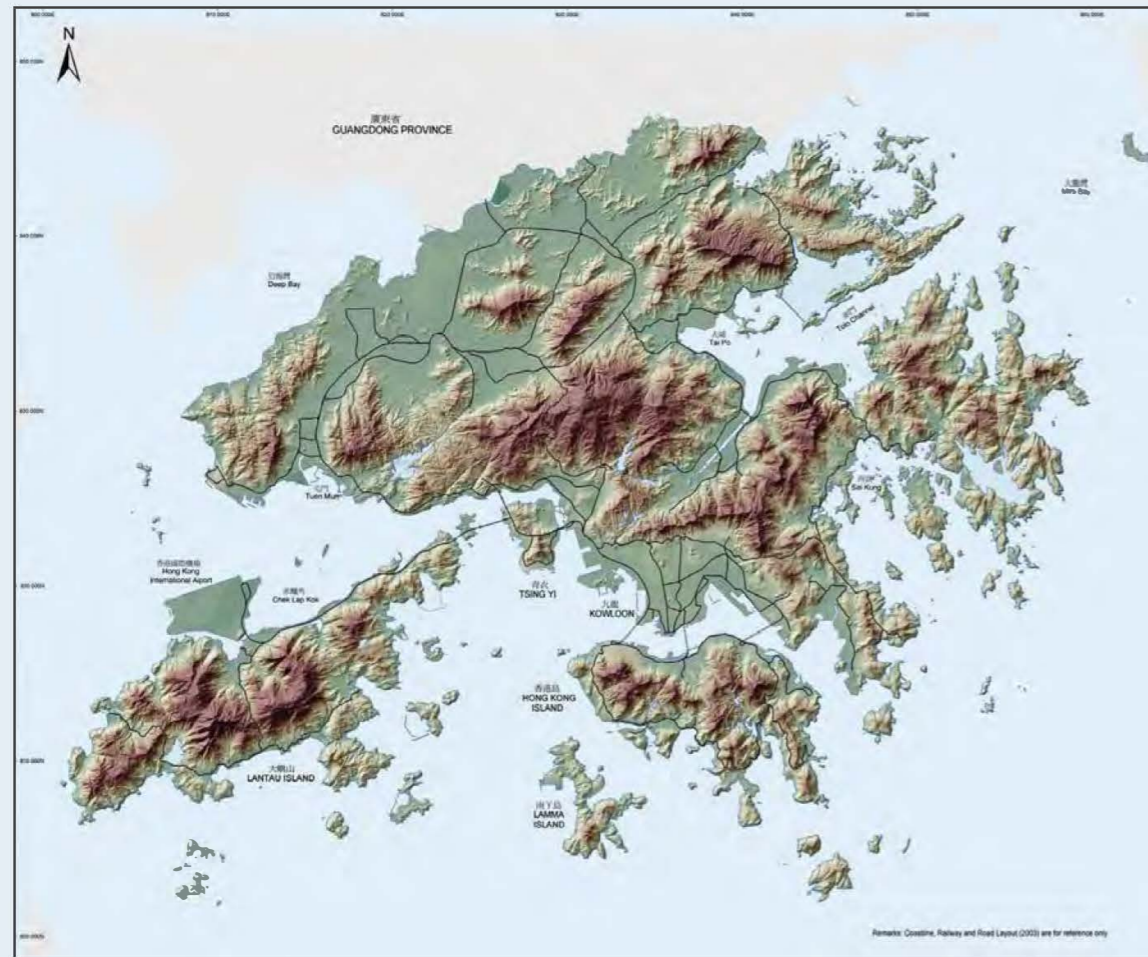


# Chapter 1 Landscape Change in the Urbanisation of Hong Kong

## 1.1 Different landscapes of Hong Kong

### 1.1.1 Topography

Hong Kong has a total land area of about 1,100 km<sup>2</sup> and comprises three main areas: Hong Kong Island, Kowloon Peninsula and the New Territories.



Source: Civil Engineering and Development Department

## Gradient

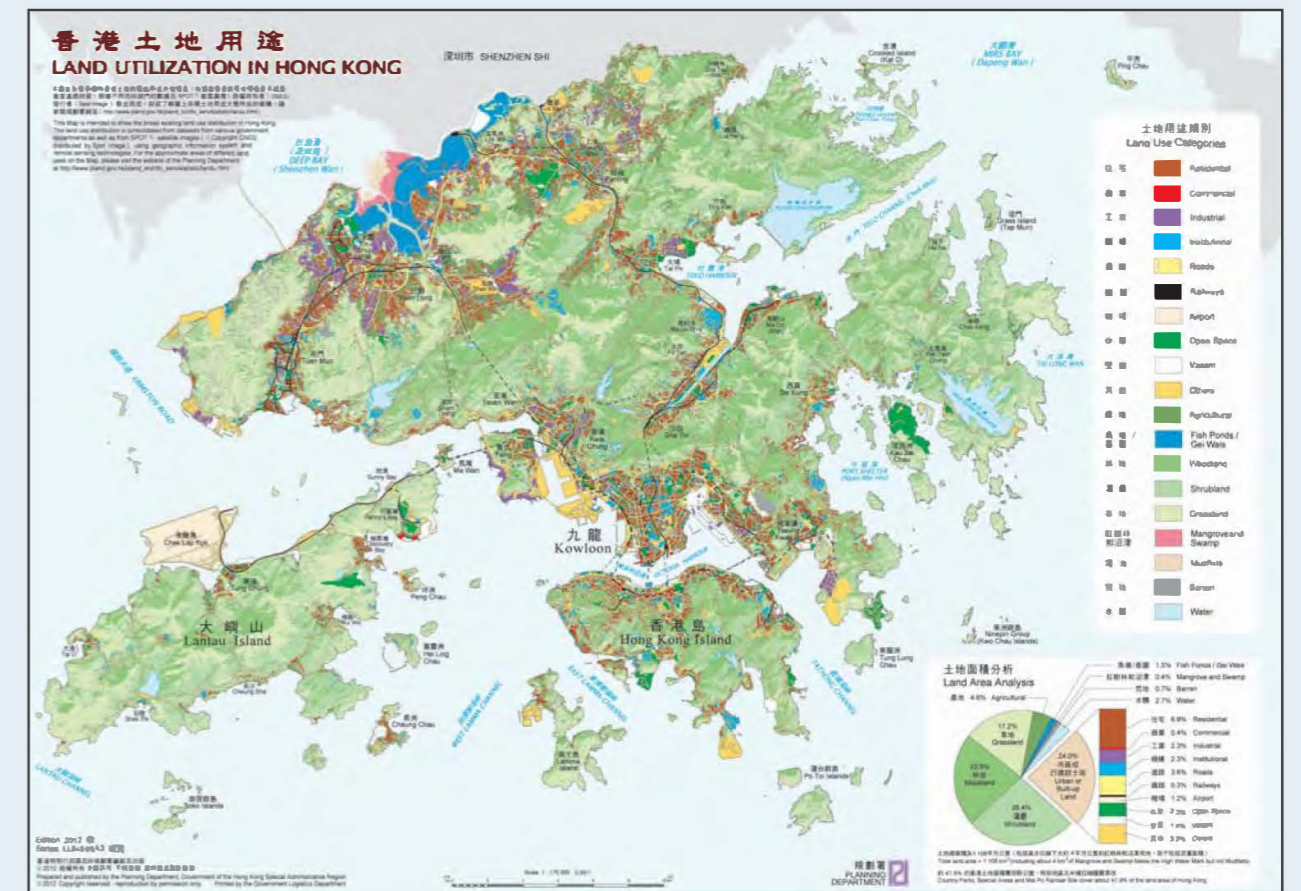
Hong Kong's landscape is mostly hilly with steep topography, with 60% of land being natural slopes (approximately 650 km<sup>2</sup>), and 70% of slopes with a gradient of over 15°.



### 1.1.2 Land utilisation in Hong Kong

#### Developed areas in Hong Kong

With the constant increase in population, the developed areas of Hong Kong, which are located in various parts of the territory, have also increased in size.



Source: Planning Department





1 Based on the information above, describe the distribution of the developed areas in Hong Kong.

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2 Further to Q1 above, what is the correlation between the developed areas and terrain?

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3 What are the pros and cons of this kind of land development?

	Pros	Cons
Hong Kong		

According to the statistics of the Planning Department, the utilisation of about 1,100 km<sup>2</sup> of land in Hong Kong is as follows:

Category	2011
<b>Residential</b>	
Private residential (i)	25
Public residential (ii)	16
Rural settlement (iii)	35
<b>Commercial</b>	
Commercial/Business and offices	4
<b>Industrial</b>	
Industrial land	7
Industrial estates	3
Warehouses and storage areas (iv)	16
<b>Institution/Open Space</b>	
Government, institution and community facilities	25
Open space (v)	25
<b>Transportation</b>	
Roads	40
Railways	3
Airport	13
<b>Other Urban or Built-up Land</b>	
Cemeteries and crematoriums	8
Utilities	7
Vacant development land/Construction in progress	16
Others	22
<b>Agriculture</b>	
Agricultural land	51
Fish ponds/Gei wais	17



**Woodland/Shrubland/Grassland/Wetland**

Woodland	249
Shrubland	293
Grassland	191
Mangrove and swamp (vi)	5

**Barren Land**

Badland	2
Quarries	1
Rocky shore	4

**Water Bodies**

Reservoirs	25
River courses/streams	5

**Total 1108**

Source: Planning Department

- Notes:
- (i) Residential land developed by private developers (except village houses, HOS/PSPS and temporary housing area)
  - (ii) Include HOS/PSPS and temporary housing area
  - (iii) Include village housing and temporary structures
  - (iv) Include open storage areas
  - (v) Include parks, stadiums and playgrounds
  - (vi) Include areas below the High Water Mark

**Activities**  
Brain teasers

**1 Calculate the approximate total area of greenery coverage in Hong Kong and its percentage in the total area of Hong Kong.**

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**2 What do the figures tell you about the Government's policy on land development? Explain if there is any correlation between this policy and Hong Kong's unique natural landscape.**

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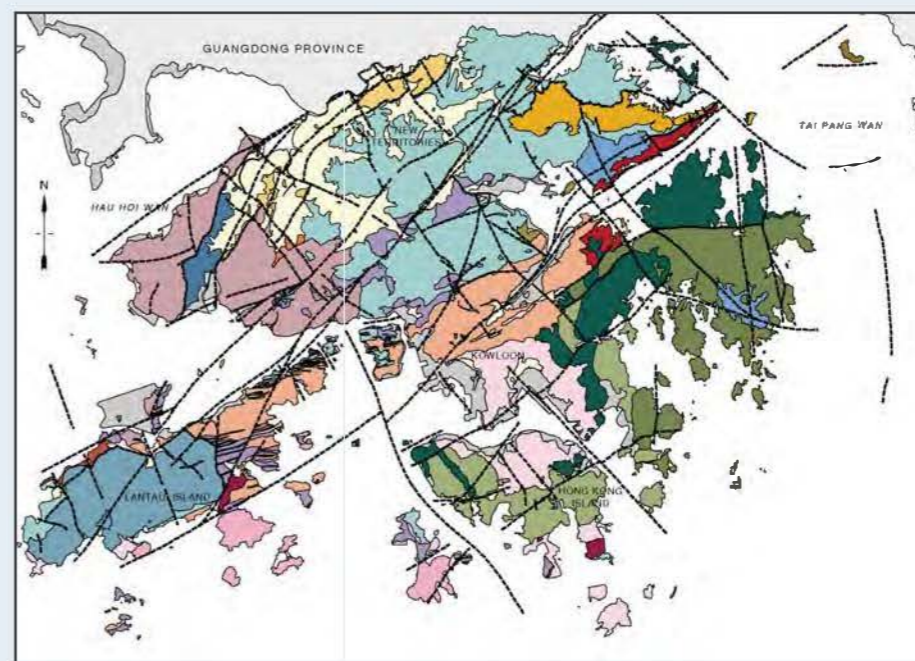
**1.2 Factors contributing to the formation of Hong Kong's landscape**

The ever-changing landscape of Hong Kong is influenced by various factors, including natural and human factors.

**1.2.1 Natural factors**

**Geological change**

In Hong Kong, rocks can be broadly categorised into igneous, sedimentary and metamorphic rocks, with igneous rock, including volcanic and intrusive rocks, being the most widely exposed rock which accounted for 85% of the total area of Hong Kong. On the other hand, sedimentary and metamorphic rocks are mainly concentrated in the northern New Territories and sporadically scattered on both sides of Tolo Channel and the western edge of Lantau Island.



**Geological Map of Hong Kong**

**Pink/red** : granite rocks  
**Green/blue** : volcanic rocks  
**Brown** : sedimentary rocks  
**Yellow** : surface deposits

Source: Civil Engineering and Development Department

The geological makeup of Hong Kong is to a large extent influenced by the notable Lianhuashan Fault System in Southern China. This dominant regional fault system is aligned in a northeast to southwest direction, comprising over 100 major faults. Similarly, all major faults in Hong Kong are aligned in the same direction. The Tolo Channel-Sha Tin-Lai Chi Kok fault system is one of the most distinctive fault systems in Hong Kong, which has contributed to the distribution of mountains and dominant terrain of Hong Kong today.

The course of geological evolution has created a variety of rock types and geological formations, which have directly affected the existing topography, features of rocks and strata, and the distribution of steep mountains in Hong Kong.



### Climate of Hong Kong



#### Activities

Record the weather conditions of the past 20 years in Hong Kong

	1980	1985	1990	1995	2000	2005	2010
Average temperature (°C)							
Annual rainfall (mm)							



Explain how the climatic characteristics of Hong Kong have contributed to the geological evolution and rock weathering in Hong Kong.

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### 1.2.2 Human factors

Natural processes are steadily eroding and shaping the land. More recently, human activities have changed the surface of the earth at a much faster rate than natural processes do. The original, pre-settlement landscape of Hong Kong has been considerably modified by human activities, largely in order to provide additional building land, building materials and reliable water supplies.

Hong Kong has a limited amount of flat land for building purposes. There are no lakes, large rivers or major aquifers to provide drinking water. Consequently, flat land is created by coastal reclamation and site formation. Quarrying provides materials and aggregates for building and concrete making. Water is stored by building dams and impounding reservoirs. Together, these activities have had a profound impact on the topography, the shape of the coastline, and the drainage pattern of Hong Kong. These impacts are found not only in the urban areas, but also in the rural area of the New Territories.

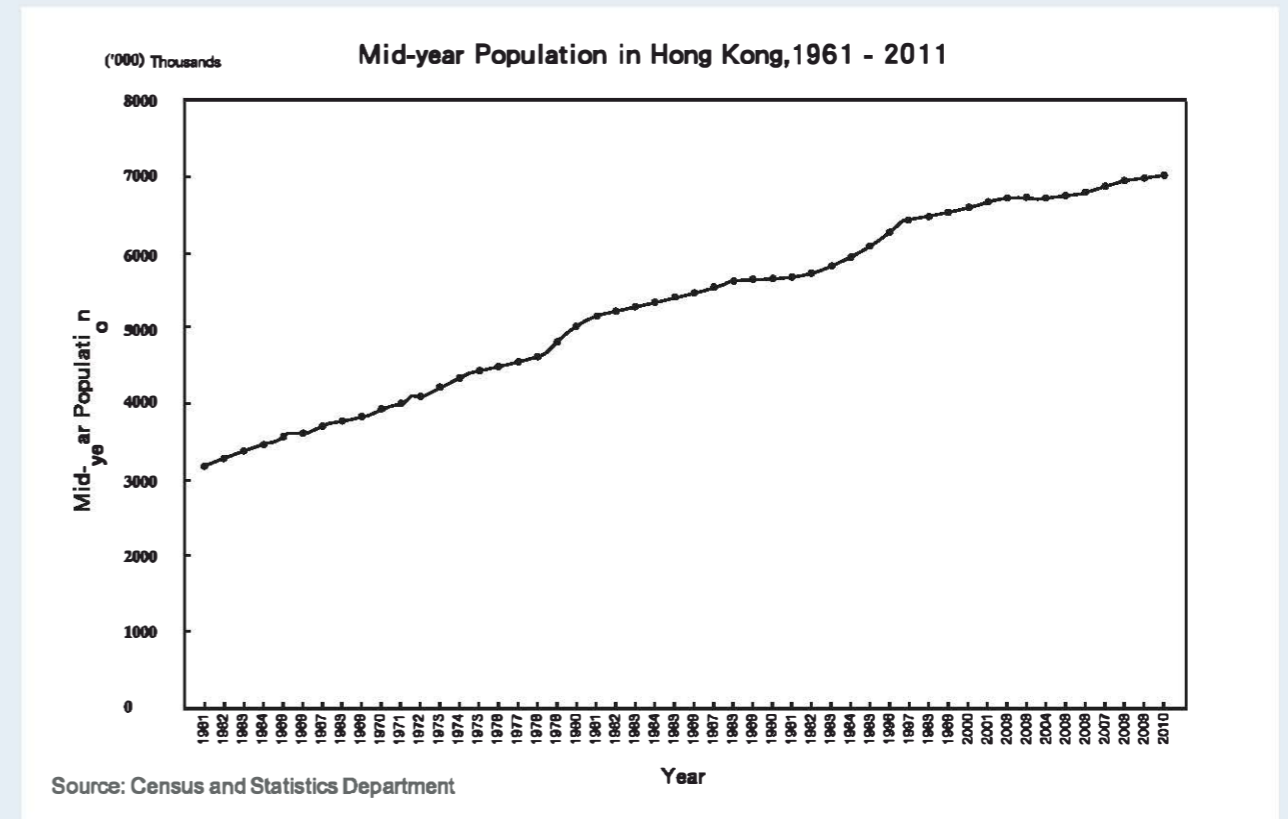
### Population growth



#### Activities

Challenges

Figure 1



1 Referring to Figure 1, describe the change in Hong Kong's population.

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2 Further to the question above, explain, with examples, how the change has affected the Government's past and present land policy of Hong Kong.

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Economic growth

**Activities**  
 Challenges

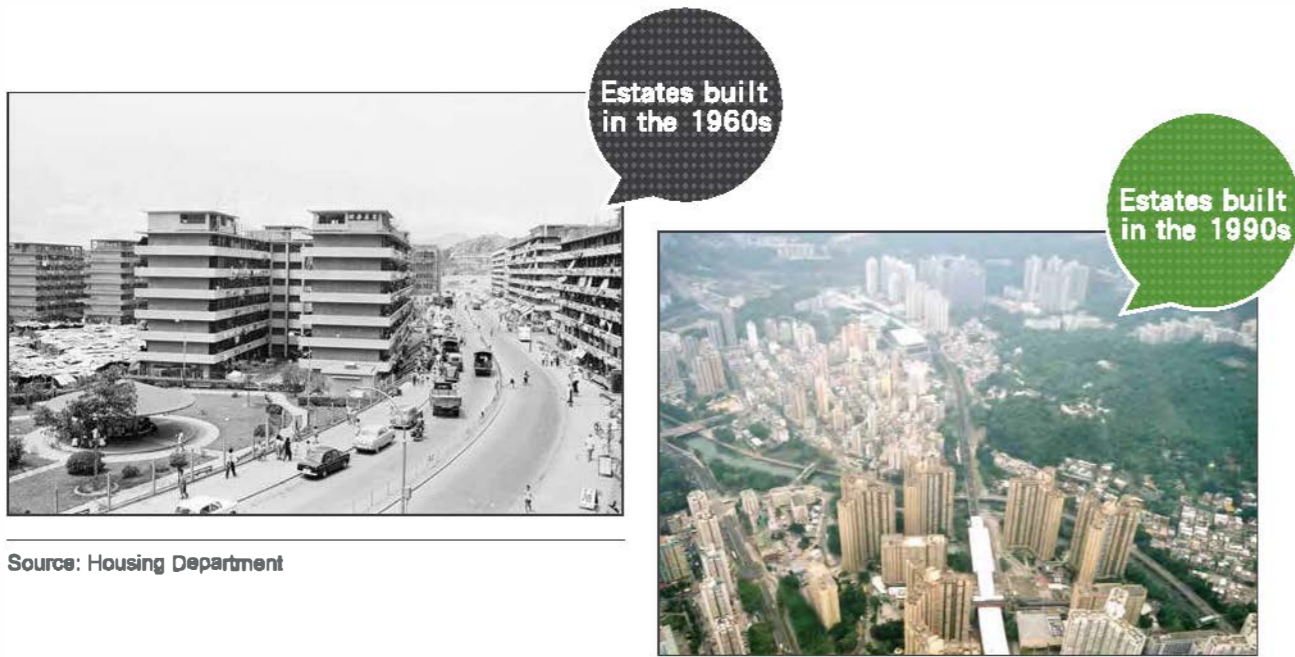
Year	Per capita GDP at current market prices (HK\$)
1966	3,935
1976	13,979
1986	58,018
1996	191,951
2006	219,240
2011	273,657

**Figure 2**  
 Per capita GDP of Hong Kong

Year	Median Monthly Income from Main Employment (HK\$)
1991	5,170
1996	9,500
2001	10,000
2006	10,000
2011	11,000

**Figure 3**  
 Median monthly income from main employment (1991-2011)

Source: Census and Statistics Department



Source: Housing Department

Source: Housing Department

1 Referring to Figures 2 and 3 above, describe the general economic situation of Hong Kong.

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2 Referring to the figures and photos above, describe and explain the change in the living quality of the Hong Kong people.

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Government policy

New town development

Most of the new towns in Hong Kong, including Tin Shui Wai, Ma On Shan, Tseung Kwan O, Sha Tin, Tuen Mun, Tsuen Wan and Tung Chung, are coastal reclamation sites. The objective of new town development is to accommodate population growth and prevent high concentration of population in the urban areas. A decrease in population density in the urban areas can improve our living environment.

Challenges

**Figure 4**  
 Population distribution in Hong Kong between 1971 and 2011

Region	Year			
	1971		2011	
	Population ('000)	Percentage of total population	Population ('000)	Percentage of total population
Hong Kong Island	996	25.3 %	1,271	18.0 %
Kowloon Peninsula	2,195	55.8 %	2,108	29.8 %
New Territories	746	18.9 %	3,692	52.2 %

Source: Census and Statistics Department



1 Referring to Figure 4, describe the changes in population and its regional distribution in Hong Kong.

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2 Provide an analysis of the locations of Hong Kong's new towns and the similarities between these locations.

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**Activities**  
 Observations

**Older urban areas of Hong Kong**



Source: Development Bureau

**New towns of Hong Kong**



Source: Development Bureau

1 Based on the photos above, compare Hong Kong's older urban areas and new towns in the following aspects:

	Older urban area	New town
Residential area:		
Transportation:		
Culture and recreation:		
Greening:		
Spatial quality:		

2 What are the challenges in the implementation of greening work in the older urban areas?



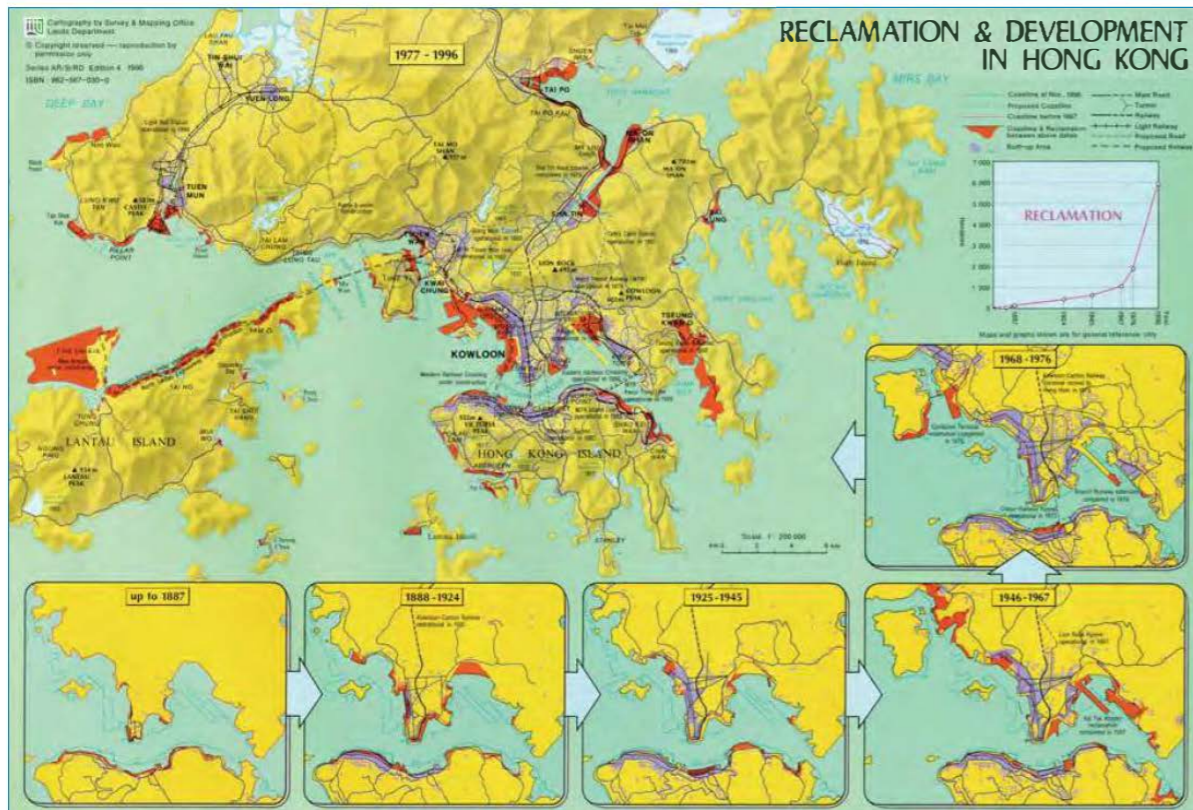
## Reclamation

Many of the notable developments in Hong Kong are located on reclaimed land, including the former Kai Tak Airport, the new Hong Kong International Airport at Chek Lap Kok (12.5 km<sup>2</sup>), the West Kowloon Cultural District (0.4 km<sup>2</sup>), Central District on Hong Kong Island, as well as the site of the Hong Kong Disneyland Resort in Penny's Bay (2.0 km<sup>2</sup>). Today, reclaimed land makes up about 6% of the total land area of Hong Kong and can accommodate about 20% of the population.

**Figure 5**  
Reclaimed area  
(since 1887)



Region	Area (km <sup>2</sup> )
Hong Kong Island & Neighbouring Islands	7.19
Kowloon Peninsula	13.64
New Territories-Mainland	28.52
New Territories-Island	18.91
<b>Total</b>	<b>68.26</b>



Source: Survey and Mapping Office, Lands Department Licence No G65/2012

1 List the places that were developed on reclaimed land.

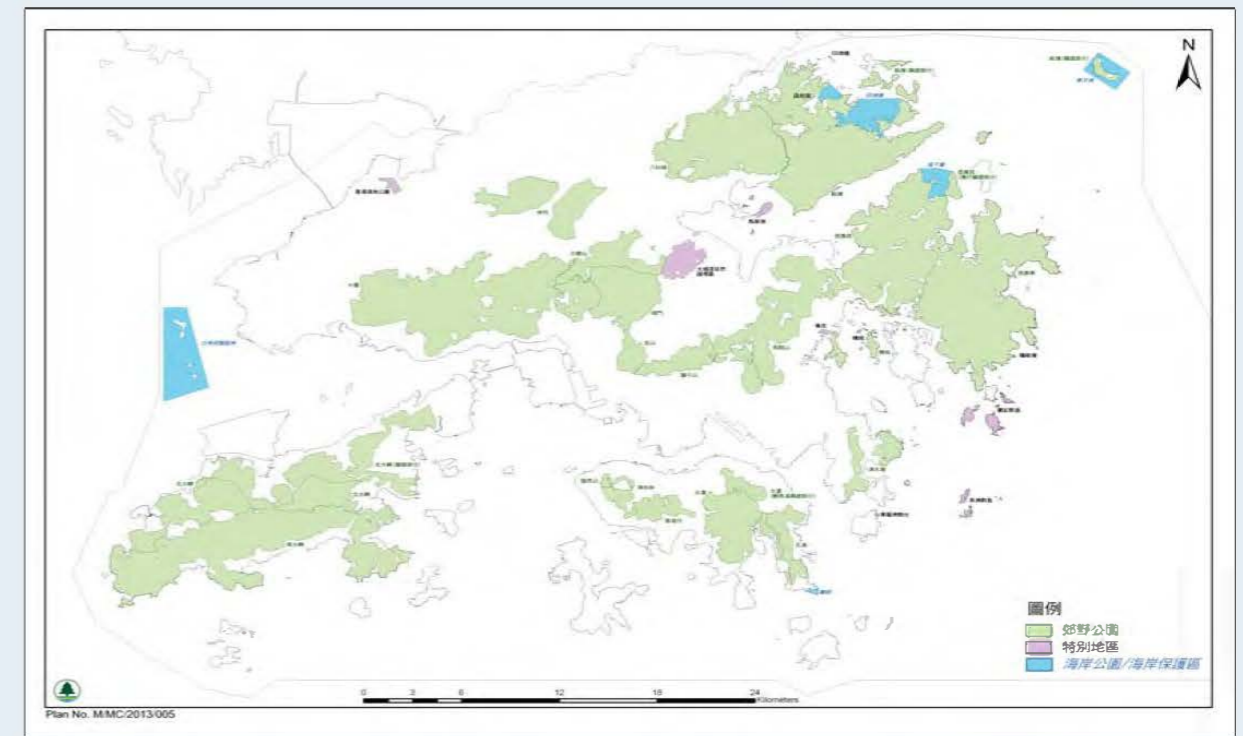
2 Explain, with examples, how reclamation affects the landscape of Hong Kong?

## Country parks

A total of 24 country parks and 11 special areas outside the boundaries of country parks have been designated in the rural areas, which cover about 442.39 km<sup>2</sup> in area, or 40% of the total land area of Hong Kong. These areas are protected by law and are under the management of the Agriculture, Fisheries and Conservation Department. Country parks are mainly developed for the purposes of nature conservation, countryside recreation and outdoor education facilities for the community, while special areas are to serve the purpose of nature conservation.

Apart from the country parks and special areas, there are 4 marine parks and 1 marine reserve, with a total area of 24.30 km<sup>2</sup>, which are also protected by law. The public can enjoy views of great seascape and a rich variety of sea creatures such as corals in the marine parks and marine reserve, which also offer activities such as diving, snorkeling, canoeing, sailing and underwater photography.

**Areas protected**  
by the marine laws  
in Hong Kong



Source: Agriculture, Fisheries and Conservation Department



### Hong Kong Country Parks

No.	Name	Time of planning	Area (Hectares)	Location
1	Shing Mun	24 Jun, 1977	1,400	Central N.T.
2	Kam Shan	24 Jun, 1977	337	Central N.T.
3	Lion Rock	24 Jun, 1977	557	Central N.T.
4	Aberdeen	28 Oct, 1977	423	West of HK Island
5	Tai Tam	28 Oct, 1977	1,315	East of HK Island
6	Sai Kung East	3 Feb, 1978	4,477	East of N.T.
7	Sai Kung West	3 Feb, 1978	3,000	East of N.T.
8	Plover Cove	7 Apr, 1978	4,954	Northeast of N.T.
9	Lantau South	20 Apr, 1978	5,640	South of Lantau Island
10	Lantau North	18 Aug, 1978	2,200	North of Lantau Island
11	Pat Sin Leng	18 Aug, 1978	3,125	Northeast of N.T.
12	Tai Lam	23 Feb, 1979	5,370	West of N.T.
13	Tai Mo Shan	23 Feb, 1979	1,440	Central N.T.
14	Lam Tsuen	23 Feb, 1979	1,520	Northwest of N.T.
15	Ma On Shan	27 Apr, 1979	2,880	East of N.T.
16	Kiu Tsui	1 Jun, 1979	100	East of N.T.
17	Plover Cove (Extension)	1 Jun, 1979	630	Northeast of N.T.
18	Shek O	21 Sept, 1979	701	East of HK Island
19	Pok Fu Lam	21 Sept, 1979	270	West of HK Island
20	Tai Tam Country Park (Quarry Bay Extension)	21 Sept, 1979	270	East of HK Island
21	Clear Water Bay	28 Sept, 1979	615	Southeast of N.T.
22	Sai Kung West (Wan Tsai Extension)	14 Jun, 1996	123	East of N.T.
23	Lung Fu Shan	18 Dec, 1998	47	West of HK Island
24	Lantau North (Extension)	7 Nov, 2008	2,360	North of Lantau Island

Source: Agriculture, Fisheries and Conservation Department

1 What ecological and social impacts has the establishment of country parks brought to us?

2 What does the ratio of designated land for country park tell you about the Government's policy on land development and nature conservation?

### Species of vegetation

The major vegetation of Hong Kong belongs to the evergreen broad-leaved forest of the subtropics. Many species typical of the Southeast Asian tropical flora are also seen here at the limits of the northern distribution range.

About 3,300 species and varieties of vascular plants (i.e. plants with roots, stems and leaves) have been recorded in Hong Kong, about 2,100 of which are native and the rest are of exotic origin. In addition to vascular plants, more than 300 species of bryophytes and 260 species of lichens are found in Hong Kong.



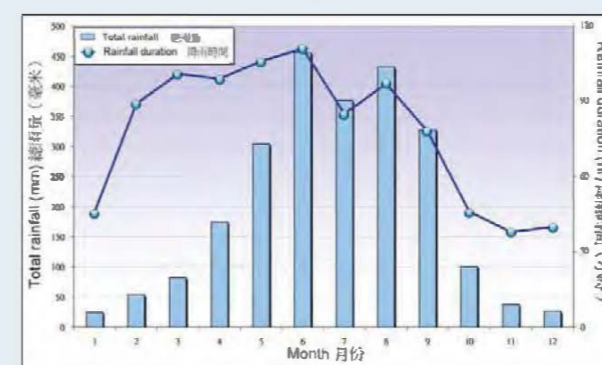
Source: Agriculture, Fisheries and Conservation Department



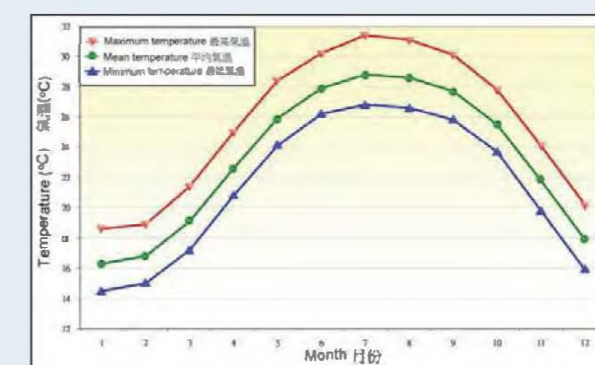
### Activities

Know more about Hong Kong's climate

Average monthly rainfall between 1981 and 2010



The monthly average maximum, mean, and minimum temperatures recorded by the Hong Kong Observatory between 1981 and 2010



Source: The Hong Kong Observatory





Analyse the correlation between climate and the richness/biodiversity of plant species in Hong Kong.

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The majority of original vegetation in Hong Kong no longer exists after centuries of human disturbances. The existing vegetation comprises the secondary forest restored/regenerated in the latter half of the 20th century after the Second World War. The major types of vegetation in Hong Kong are woodland, shrubland and grassland. Minor formations occur in special habitats in freshwater and coastal environments.

### Native and exotic plants

Native plants are those indigenous or naturalised plants that have developed, occurred naturally, or existed for many years in a biogeographical region, while exotic plants are species living outside its native distributional range and have been brought there by human activity. For example, Sweet Gum (*Liquidambar formosana*) and Rhodoleia (*Rhodoleia championii*) are native plants to Hong Kong, while Paper-bark Tree (*Melaleuca cajuputi* subsp. *cumingiana*) and Taiwan Acacia (*Acacia confusa*) are exotic plants.

Afforestation in Hong Kong started in the late 19th century with remarkable results. However, most of the trees were cut for fuel during the Second World War. As a result, the Government began extensive reforestation after the war. In the late 20th century, woodland accounted for 15% of the total area of Hong Kong.

In the early stages of reforestation in the 1970s, the key objective of planting was to restore vegetation as soon as possible. Native species such as Chinese Red Pine (*Pinus massoniana*) was selected by the then Agricultural and Fisheries Department as the pioneer species. The criteria for these pioneer species include fast growing,



adaptability to eroded slopes, and the ability to grow in unfavourable conditions such as exposed areas. Exotic species such as Earleaf Acacia (*Acacia auriculiformis*), Taiwan Acacia (*Acacia confusa*), Big-leaved Acacia (*Acacia mangium*), Horse-tail Tree (*Casuarina equisetifolia*), Cadaga (*Eucalyptus torelliana*) and Brisbane Box (*Lophostemon confertus*) were also selected as pioneer species. These exotic species are crucial to the whole reforestation process.

In recent years, the goal of reforestation has changed from revegetating eroded land to increasing biodiversity. More than half of the seedlings chosen for country park planting are of native species. The most commonly used species include Castanopsis (*Castanopsis fissa*), Camphor Tree (*Cinnamomum camphora*), Lidded Cleistocalyx (*Cleistocalyx nervosum*), Hong Kong Gordonia (*Polyspora axillaris*), Sweet Gum (*Liquidambar formosana*), Machilus species (*Machilus species*), Reevesia (*Reevesia thyrsoidea*) and Chinese Gugertree (*Schima superba*).

Mixed planting of native and exotic species is a common afforestation strategy in recent years, which means planting native species alongside the fast growing exotic species. This can protect the former from adverse weather conditions and gradually improve soil quality. Upon the establishment of the native species, thinning of the exotic species is then carried out to provide more growing spaces for the native species.



### Activities

Know more about the vegetation of Hong Kong

State the names and functions of the native and exotic plants in Hong Kong.

	Botanical Name	Function
Native plant	1.	
	2.	
	3.	
Non-native plant/ Exotic plant	1.	
	2.	
	3.	



Affix photos of native and exotic species in the space below.

Native plants to Hong Kong

Non-native plant/Exotic plants to Hong Kong

### Non-native plant/exotic plant - example that affects ecology

Mikania (*Mikania micrantha*) is an exotic perennial herbaceous vine belonging to the family of Asteraceae (*Compositae*). It originates in tropical South and Central America and is now widely distributed in India, Southeast Asia, Pacific islands and South China, including Guangdong and Hong Kong.

Like other climbers, Mikania climbs up other plants to reach the canopy for more sunlight. Unfortunately, its leaves grow vigorously and will cover up other plants. It will eventually cause damage to or even kill other plants by blocking out the sunlight required for photosynthesis and affect growth, or simply smothering them.

The first record of Mikania in Hong Kong dates back to 1884, but the plant has become a weed only since 1970s and 1980s due to the decline of agricultural activities and weeding has not been frequently practiced by farmers, which allows the weed to spread uncontrollably. Mikania is now usually found in low-lying, moist and disturbed areas with ample sunlight such as derelict fields, fishpond bunds, roadsides and woodland edges around village environs. The species can even grow at higher altitudes and become a threat to the native species on the hillsides.

Photo of Mikania



Source: Agricultural, Fisheries and Conservation Department

Apart from Mikania, list other non-native/exotic plant species that may harm the ecology, and affix its photo in the space below.





## Chapter 2

### The Government's Work on Greening, Landscape and Tree Management





# Chapter 2 The Government's Work on Greening, Landscape and Tree Management

## 2.1 Definition of greening

Broadly speaking, greening is a branch of landscape architecture. It is a process of creating landscape setting and vegetation cover through landscape design by planting trees, shrubs, and flowers. It aims to transform the urban "concrete jungle" into a green environment for working and living and also for visual relief and leisure. Greening work, which can reduce "heat island" effect and enhance the ecological system, can be carried out on roads, slopes, flat lands and buildings.

## 2.2 Greening policy

The Government has been striving to enhance the quality of our living and working environment through active planting as well as proper maintenance and preservation of trees together with other vegetation. The objective is to bring about noticeable improvements in urban greenery, enhance existing greened areas, and pursue quality greening during the planning and development of public works projects.

As recommended in the Report of the Task Force on Tree Management – People, Tree, Harmony, the Greening, Landscape and Tree Management Section was established under the Works Branch of the Development Bureau in March 2010 to champion a new and strategic policy on greening, landscaping and tree management with a view to achieving a sustainable and greener environment for Hong Kong.



Source: Development Bureau

### The Government's greening work includes:

- Setting up parks and country parks;
- Setting up nature trails and tree walks;
- Conservation of fung shui woods and Old and Valuable Trees (OVTs);
- Formulation of Greening Master Plans;
- Slope greening;
- Provision of landscape service for public works projects;
- Landscape rehabilitation; and
- Roadside greening.

#### Question:

Find out total planting figure, including the number of trees and shrubs that has been planted by the Government in the past 10 years? (Hints: Find the answer at the Greening website: [www.greening.gov.hk](http://www.greening.gov.hk))

## 2.3 Greening in urban areas

### Aim:

To satisfy public needs for more green spaces in Hong Kong, the Civil Engineering and Development Department launched the GMP programme in 2004.

### 2.3.1 Greening Master Plans (GMPs)

Through studying the characteristics and specific requirements of different districts, a GMP seeks to define the overall greening framework of a district, and serves as a guide for all parties involved in the planning, design and implementation of greening works. In addition to identifying planting locations, a GMP also establishes greening themes and proposes suitable species for planting.



### Activities

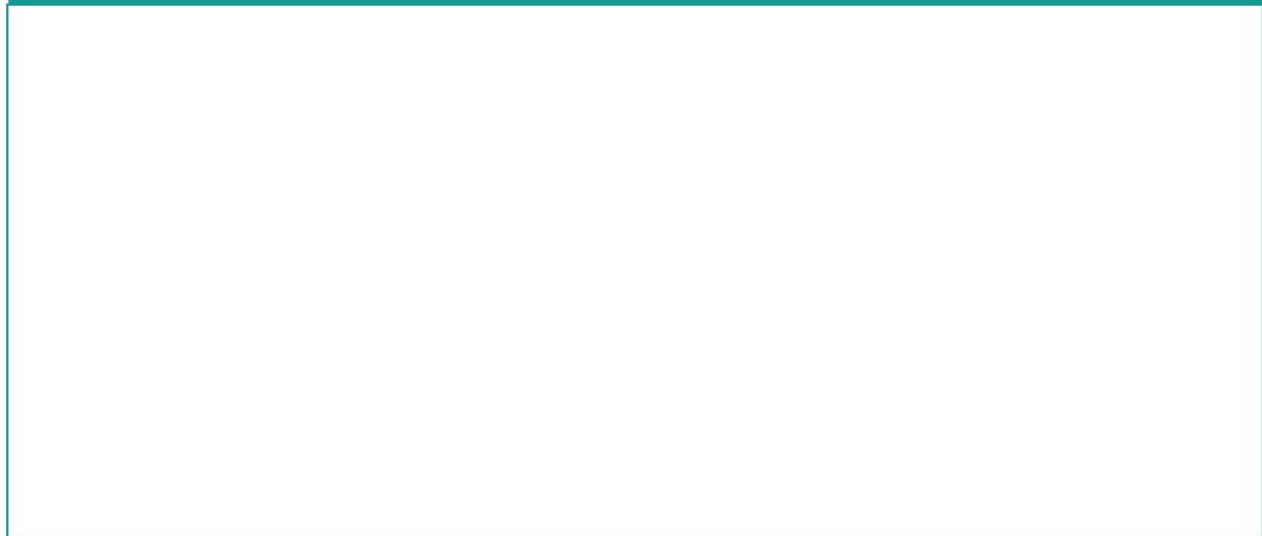
Choose a district with a GMP and complete the table below:

District	Greening theme	Proposed plant species





Photo taken after the implementation of the GMP



What is the significance of implementing the GMP in the older urban areas of Hong Kong?

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### 2.3.2 New trend in greening - skyrise greening

**Skyrise greening** is a new trend of urban greening. In a broad sense, it encompasses all greening work carried out on buildings or other structures above the ground level, including roof greening, vertical greening, sky gardens, terrace planting, etc.

Skyrise greening provides environmental benefits and enhances the aesthetic quality of our urban environment. There are two main approaches to skyrise greening: roof greening and vertical greening.

**Roof greening** is characterised by planting works on structural slabs, i.e. non at-grade planting, with main focus on the horizontal dimension. It is carried out on rooftops and/or other parts of buildings or structures in the form of intensive green roof and extensive green roof.

**Intensive green roof** is usually of deeper soil depth. It supports a wider plant range, requires higher maintenance input, and can be used for recreational purposes. Podium gardens, roof gardens, sky gardens are typical examples of intensive green roof.



**Extensive green roof** is usually of shallower soil depth. It supports a narrower plant range, requires lesser maintenance input, and access is provided for maintenance purposes only. Typical examples of extensive green roof include greening on top of covered walkways, rooftops of buildings, etc.



**Vertical greening** is carried out either by planting at-grade or on elevated planters with a view to creating greenery on the vertical surfaces of building structures. Typical examples of vertical greening include planting of climbing and/or weeping plants along the walls and/or edges of buildings or structures, planting on stacks of modular planters or panels, or a combination of both.

Source: Development Bureau

### ! Activities

Find out where skyrise greening has been carried out

Take a photo of skyrise greenery and specify its location and type.

Analyse the importance of skyrise greenery to development in Hong Kong and our environment.

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### Activities

Find out the OVTs, Maze Garden and Sculpture Walk in Kowloon Park

Affix photos and provide the details below.

OVTs	Maze Garden
OVT species in Kowloon Park	Plants found in Maze Garden

Sculpture Walk	Tree Walk
State the name of a sculpture and the name of its sculptor	State the botanical name, Chinese name and origin of one of the tree species in the Tree Walk

**Hints:** Reference can be made to (1) the Tree and Landscape Map at the Greening website and (2) the Parks, Zoos and Gardens website of the Leisure and Cultural Services Department.



### Activities

Tree walks

Provide information on the names, characteristics and origins of five common flowering trees in Hong Kong.

Among the species listed above, affix photos of two tree species.

What does it mean by "parks are the green lungs of a city"? Please analyse the importance of parks to a city and its citizens.

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### 2.3.4 Greening in residential areas

**Location:** Sau Mau Ping Estate in Kwun Tong

**Area:** 4.9 hectares

**Characteristics:** Sau Mau Ping South Estate was completed in 2009. Its green facilities are remarkable in both quality and quantity. The estate, with a central landscaped garden, has 40% of greenery coverage, which includes about 1,300 new trees, the longest covered walkway with green roof, ecological planting on slopes, vertical greening, and the landscape and green spaces created under the Community Participation Scheme.



- 1 The green roof of the covered walkway is beneficial to the environment as it reduces temperature and enhances visual and aesthetic values.
- 2 Concrete grillages and soil nails were used during construction to stabilise the slopes so that some 100 trees could be preserved.
- 3 There are six solar cum wind hybrid powered lighting system to generate electricity for the LED outdoor lighting.
- 4 Vertical greening on staircases and walls.

Source: Housing Authority



### Activities Greening in public estates

How will the living standards of residents be improved through quality landscape design?

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Record the plants in your estate or a nearby estate.

Tree	Shrub
Botanical name: Chinese name: <div style="border: 1px solid black; height: 150px; display: flex; align-items: center; justify-content: center; margin-top: 10px;">[ Photo ]</div>	Botanical name: Chinese name: <div style="border: 1px solid black; height: 150px; display: flex; align-items: center; justify-content: center; margin-top: 10px;">[ Photo ]</div>
Botanical name: Chinese name: <div style="border: 1px solid black; height: 150px; display: flex; align-items: center; justify-content: center; margin-top: 10px;">[ Photo ]</div>	Botanical name: Chinese name: <div style="border: 1px solid black; height: 150px; display: flex; align-items: center; justify-content: center; margin-top: 10px;">[ Photo ]</div>

**Hints:** Botanical names consist of two or more Latin words.  
 For example, the botanical name of Chinese Banyan is *Ficus microcarpa*.





**The distribution and planning of major green spaces and parks in Hong Kong**

According to the Hong Kong Planning Standards and Guidelines of the Planning Department, when considering the function, nature, form and intensity of development of open space and recreational facilities, and the appropriate zoning on the outline zoning and outline development or layout plans, it is useful to take into account the hierarchy of recreation and open space as briefly described below:

**(a) Urban Areas:**

Including metro areas and new towns which are intensively developed. The open space and recreational facilities in these areas should be easily accessible from home and, where applicable, from the workplace.

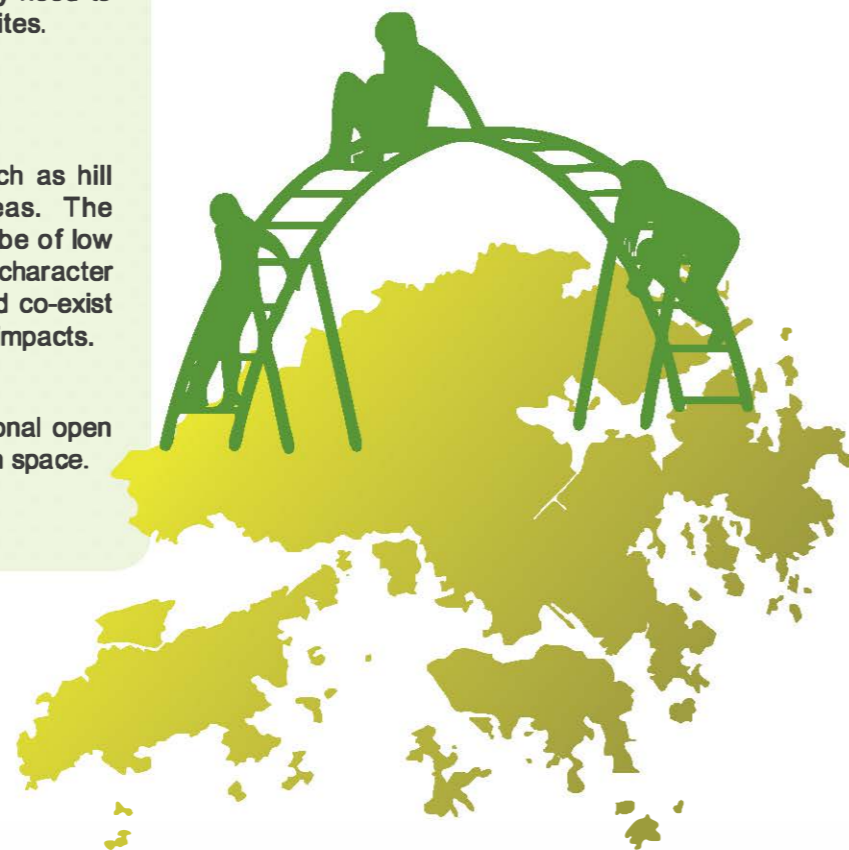
**(b) Rural Areas:**

Including the vast stretches of flat land and valley floors with dispersed settlements in the rural New Territories. The open space and recreational facilities in these areas may need to be concentrated in the more developed sites.

**(c) Countryside and Coastal Areas:**

Including unique natural resources such as hill slopes, country parks and coastal areas. The recreational use of these areas should be of low intensity and compatible with the rural character and the natural environment, and should co-exist with other uses without causing adverse impacts.

Open space can be classified into regional open space, district open space and local open space.



**Activities**

Visit the district open space or local open space near your home or school

**Sketch the layout plan of the park**

State the functions and importance of small and medium-sized community parks.

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**Knowledge enhancement - professional team engaged in a typical open space project**

From planning, conceptual design, detailed design, tendering to construction, an open space project involves a multi-disciplinary team of professionals such as landscape architects, surveyors, architects, engineers and contractors.



**Matching:**

Quantity Surveyors	•	Construct a park under contractual obligations
Engineers	•	Design the overall layout of the park, prepare a master landscape plan and planting plan, carry out detailed design, and control the quality of construction
Contractors	•	Calculate the construction costs and manage the expenses related to the project
Architects	•	Design buildings in the park, making them compatible with the surrounding environment
Landscape Architects	•	Design the roads, structures, piping, lighting, building services and sewage treatment systems, etc





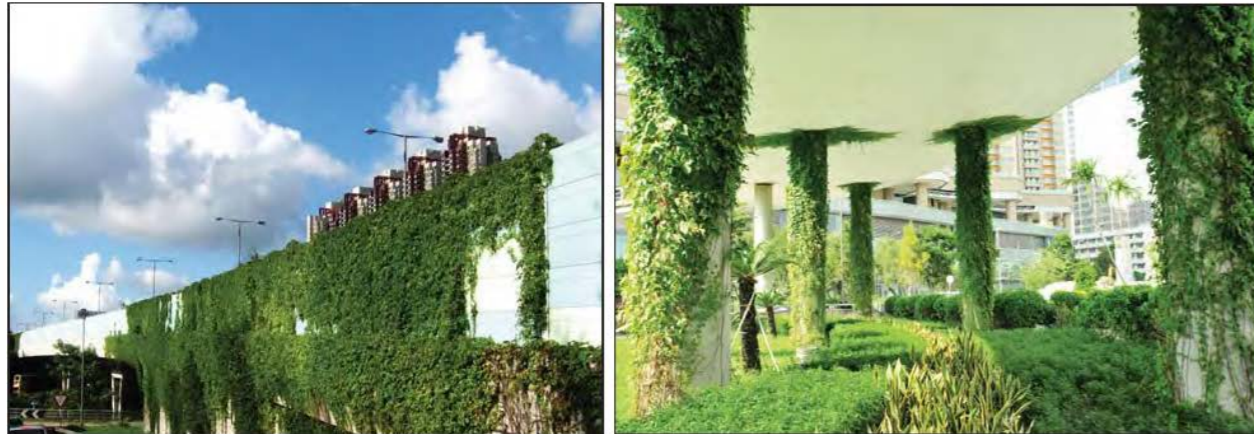
### 2.3.5 Greening along highways

The green elements in road works design can enhance the roadside landscape effectively.

#### Greening along highways



#### Vertical greening



Source: Highways Department, CMI Engineering and Development Department and Development Bureau



Besides enhancing the roadside landscape, what other functions and benefits does road greening have to us?

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### 2.3.6 Planning of a new development area

#### Case study: The Kai Tak Development

The relocation of the airport from Kai Tak to Chek Lap Kok in July 1998 has offered a good opportunity for large-scale development in the metro area.

The Kai Tak Development, a huge and highly complex development project spanning over 320 hectares, seeks to pursue sustainable development and develop a comprehensive network of parks and gardens for everyone to enjoy.



Environmental protection is the main planning principle behind the development of this new area. By using environmentally-friendly means of transport, providing extensive green spaces and pleasant pedestrian streets, adopting sustainable building designs and preserving monuments, the Government strives to embody the principle of environmental protection in the process of urban development.

The characteristics of sustainable buildings include:

- Buildings with balconies and tall windows to enhance air ventilation
- Communal sky gardens or podium gardens to improve air quality
- Using seawater as coolant to reduce rooftop temperature
- Installation of renewable energy facilities, such as solar energy

Source: Civil Engineering and Development Department - Kai Tak Office



Compare the development concepts of the earlier new towns/satellite towns with those of the new towns/new development areas today.

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## 2.4 Greening in rural areas

### 2.4.1 Afforestation

The Government has started to plant more native broadleaf species in the countryside since the 1980s to diversify wildlife habitats, increase food sources and beautify the landscape of country parks. In the process of afforestation, mixed forest planting is adopted instead of monoculture woodland/ forest planting.

The advantages of mixed forest lie in its resistance against single biotic and abiotic risks, and the enhancement of biodiversity in the area. With continuous planting and conservation, there are about 12 500 hectares of plantation areas in Hong Kong. These areas can also serve as important recreational resources for the general public.

Afforestation in country parks between 1991 and 2012

Year	No. of tree planted
1991/92	354,300
1992/93	320,200
1993/94	323,200
1994/95	317,600
1995/96	333,200
1996/97	344,900
1997/98	334,200
1998/99	553,500
1999/00	664,053
2000/01	643,044
2001/02	790,000
2002/03	899,000
2003/04	1,051,578
2004/05	735,000
2005/06	855,000
2006/07	903,000
2007/08	933,000
2008/09	905,000
2009/10	736,000
2010/11	738,000
2011/12	740,000

Source: Agriculture, Fisheries and Conservation Department

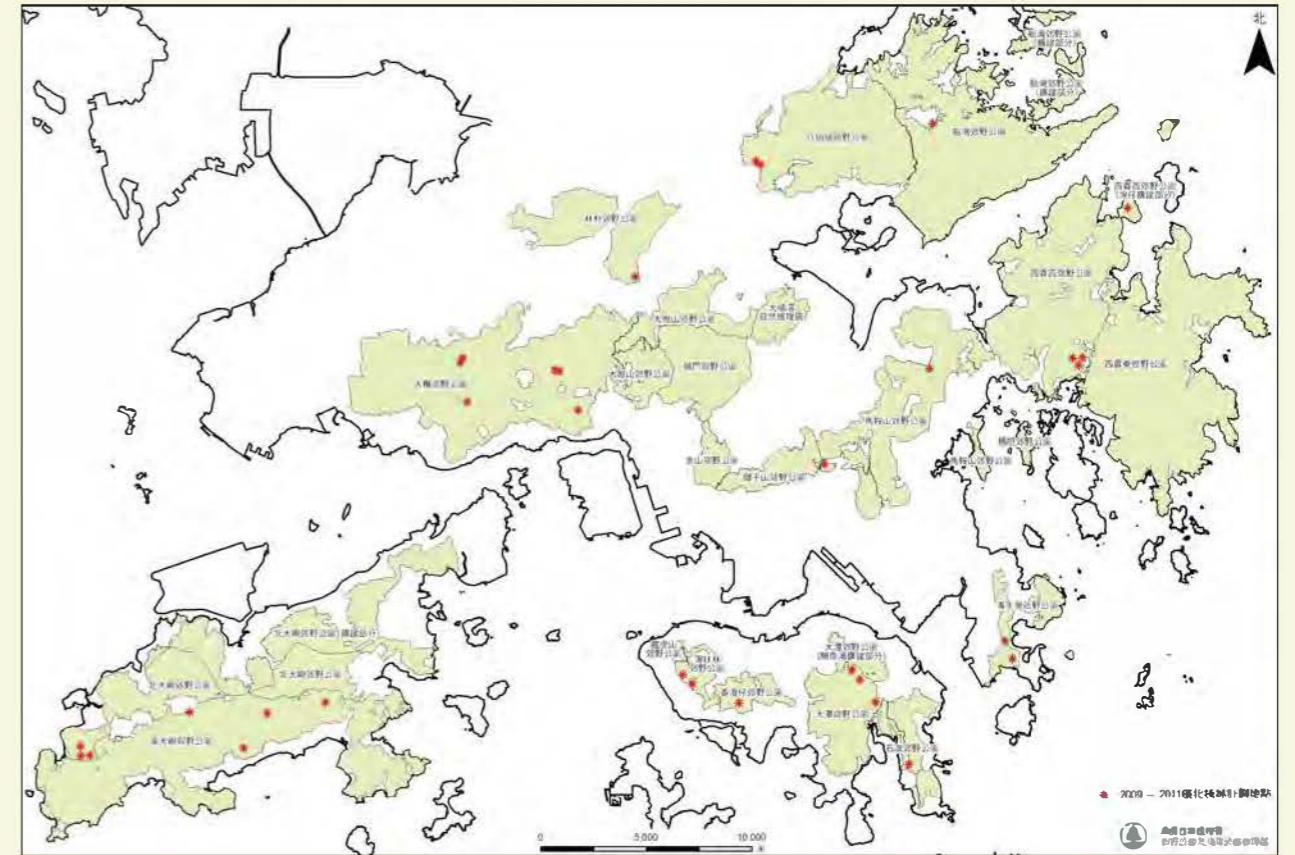
Former plantation schemes in the country parks involved mainly trees of exotic species, such as Taiwan Acacia (*Acacia confusa*), Horsetail Tree (*Casuarina equisetifolia*), Gum trees (*Eucalyptus* spp.), Brisbane Box (*Lophostemon confertus*), Paper-bark Tree (*Melaleuca cajuputi* subsp. *cumingiana*), etc. Although these trees are effective in preventing soil erosion, their dense canopies, a result of rapid growth and a lack of regular or systematic thinning, have hindered the natural propagation and growth of native trees. Thus, the woodland habitats, which are of little ecological value, lack vitality and fruits for animals, and are unsuitable for wild animals to inhabit.

To enhance the ecological value of woodlands in country parks, the Agriculture, Fisheries and Conservation Department has started to increase the species and numbers of native trees planted in these areas over the past decade. At present, more than half of the seedlings planted each year by the department are native species.

#### Objectives of the Plantation Enhancement Scheme:

1. To improve the ecological habitat of the plantation areas;
2. To increase the diversity of both animal and plant species;
3. To replace ageing trees with suitable seedlings for the sustainable development of the plantation areas;
4. To provide seeds of native trees; and
5. To enhance the attractiveness of the country park plantation landscape and to reduce the risk of major pest outbreaks.

During the autumn and winter of 2009-11, the plantation enhancement scheme has been implemented in 21 areas and their distributions are shown in the map below.



Source: Agriculture, Fisheries and Conservation Department



1 What is the scope of Hong Kong Country Park Plantation Enhancement Scheme?

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2 What are the roles of native and exotic plants in afforestation and their significance?

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## 2.5 The need for tree management and government support

### 2.5.1 Tree management

#### Tree risk management and assessment

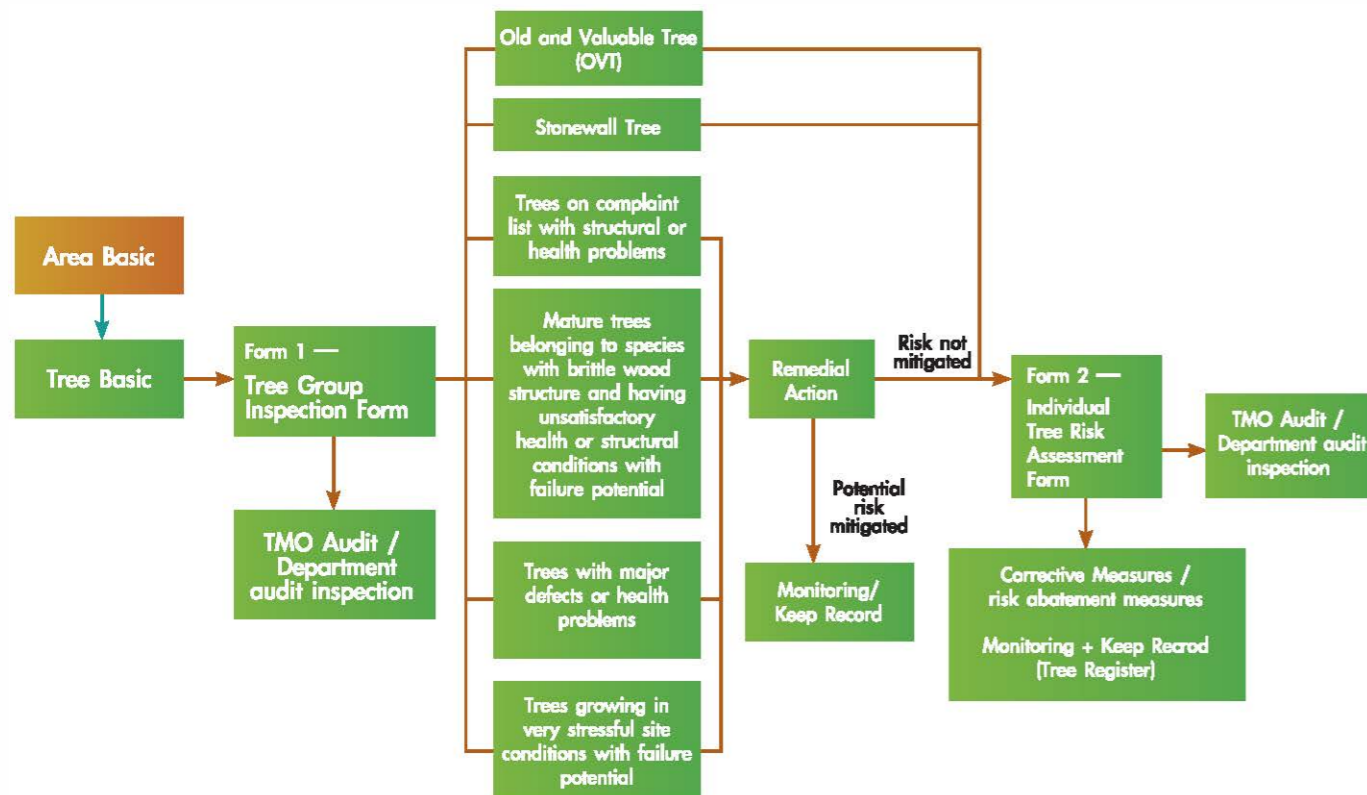
Pursuant to the recommendations in the Report of the Task Force on Tree Management – People, Trees, Harmony published on 29 June 2009, the Development Bureau introduced a set of tree risk assessment arrangements in January 2010 for implementation by the tree management departments in order to better protect public safety. These arrangements, which were formulated with reference to international best practices and the circumstances of Hong Kong, are based on a dual approach –

(a) **"Area Basis"** assessment – the departments concerned will first identify areas where members of the public will be subject to significant risks if a tree falls; and

(b) **"Tree Basis"** assessment – once an area is identified, staff of the departments concerned will try to find out those trees which are problematic/important, and assess their conditions using a standardised form with particular emphasis on their potential risks to the public. OVTs will as a rule be included for close monitoring.

Besides, the Government encourages members of the public to monitor the trees next to where they live and/or work. Once a tree is suspected or believed to have health or structural problems or being damaged, the case can be reported to '1823' Call Centre so that appropriate action can be taken promptly by the responsible department. In doing so, it helps to protect public safety and preserve trees with an ultimate aim as to bring harmony between people and trees.

#### Procedure for tree risk assessment on an "Area Basis" and a "Tree Basis"



Source: Development Bureau



1 If you see a falling tree or wilting branch on the roadside, what will you do? Why?

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The Government adopts an "integrated approach" to the management of trees on government land. In essence, the department responsible for the maintenance of an area or a facility is also responsible for the maintenance of trees there. The Tree Management Office is established under the Greening, Landscape and Tree Management Section to advocate the adoption of a professional approach to tree management among the tree management departments and in the community at large.

At present, there are a number of departments involved in tree planting and management.

#### Departments involved in tree planting and management in the urban areas:

The Leisure and Cultural Services Department, Housing Department, Highways Department, Architectural Services Department, Civil Engineering and Development Department, Drainage Services Department, Water Supplies Department etc.

#### Department involved in tree planting and management in country parks:

The Agriculture, Fisheries and Conservation Department







## 2.5.2 Challenges in tree planting and management in the city

As Hong Kong is a small place with a large population, most of the urban areas are highly developed with limited growth space for trees. In addition, improper pruning and management also have an adverse effect on trees. Please explain the impacts on trees in the following situations.

### Concrete around the tree collar



### Improper tree transplanting method



### Improper pruning



### Human damages



Activities: Analysis of tree management cases



## Activities

### Analysis of tree management cases

Here are a few tree management cases in recent years:

- 1 Nearly 200 tree crowns were topped by a private contractor in a public housing estate because of "aesthetic" and "public safety" reasons.
- 2 The roots of a big tree were damaged by construction works nearby and were later covered by concrete. The tree finally died of infection in the weakened roots.
- 3 At Christmas, many lighting decorations are hung on the trees near the shopping malls. The heat generated by the light bulbs and the entangling wires affect the growth of trees.

Can you sum up from the above cases the difficulties and challenges encountered in greening, especially in tree management?

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## 2.5.3 Measures for tree preservation

The Steering Committee on Greening, which is now renamed the Steering Committee on Greening, Landscape and Tree Management, was established in 2002 responsible for the overall greening policy and overseeing the implementation of major greening programmes.

Laws on tree protection in Hong Kong

Ordinance/ Guideline	Brief description/Interpretation
Forests and Countryside Ordinance	It is a crime to illegally damage trees or growing plants in forests or plantation areas.
Forestry Regulations	27 kinds of rare plants on government land are specially protected by additional clauses. Other than these plants, all trees are treated like ordinary trees regardless of their age or cultural and historical significance.
Government Internal Guidelines	It is stipulated in the General Safety Guidelines, Environment, Transport and Works Bureau Technical Circulars and Lands Administration Office Instruction issued by the Government that government officers are responsible for protecting trees. Transport and Works Bureau Technical Circulars demand that all planning, design or building works consider the need and ways to preserve trees as best they can. If trees have to be removed inevitably, permission should be obtained in advance.





**Administrative measures**

- 1 According to the technical circulars, works departments are required to submit to the District Lands Officer before the commencement of works an application for tree felling or transplanting, together with the tree survey plan and a tree assessment schedule containing information such as the location, species, height, crown spread, diameter at breast height and health condition of the tree.
- 2 The Government has incorporated regulatory conditions into publicworks contracts requiring enhanced protection for trees to be preserved within the works areas. Regarding the regulatory measures to prevent ineffective tree preservation or illegal tree felling, contractors are required to pay for replanting a specified number and size of trees to replace the original ones.
- 3 The Government has compiled a register of OVTs. Felling of the registered trees is prohibited unless under exceptional circumstances and with prior consent of both the Development Bureau and the Lands Department.

 **Activities**  
 1 Case Study

**The price for improper tree pruning**

**Background:**

Recently, a hospital was fined over HK\$200,000 by the Lands Department for pruning a Chinese Banyan tree improperly and excessively in order to give way to the new extension of the hospital. Although prior approval for tree pruning had been obtained from the department, the actual scale of pruning was beyond what had been proposed. As a result, the hospital breached the "tree preservation clauses" in the land lease and was subject to penalties. Although a substantial fine was imposed on the hospital for improper pruning, the damage to the tree is irreversible. The department thus ordered the hospital to stop further pruning in the next 12 months and to monitor the health and stability of all trees on the site.

**Lessons learnt:**

The case reveals the lack of knowledge in proper tree pruning. How can we prevent damage to trees due to improper pruning? Please refer to section 2.5.4 and make suggestions.

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 **Activities**

2 Record Old and Valuable Trees (OVT)

Species of OVT	Location	Background information or characteristics

**Provide a photo of an OVT in Hong Kong (with its location, botanical name and Chinese name).**





### 2.5.4 Tree maintenance

## 護養樹木的簡易圖解 Pictorial Guide for Tree Maintenance

**Note**  
 備 請瀏覽 <http://www.devb.gov.hk/greening/tp/preservation/index.htm> 與  
 悉 <http://www.devb.gov.hk/greening/en/docs/Pictorial%20Guide%20Rev%2008.pdf>  
 網址，與「修剪樹木的一般指引」、「修剪樹木的對策指南」和「降低樹木風險的樹木  
 專業視察圖解」一起參閱。  
 Please read in conjunction with 'Guidelines on Pruning', 'Do's and Don'ts in  
 Pruning' and 'Pictorial Guide for Tree Maintenance to Reduce Tree Risks' at  
<http://www.devb.gov.hk/greening/tp/preservation/index.htm> and  
<http://www.devb.gov.hk/greening/en/docs/Pictorial%20Guide%20Rev%2008.pdf>.

本圖畫資料僅供一般參考。如欲詳細檢查個別樹木，應向可靠諮詢或相關專業人士  
 尋求意見。  
 The information in this leaflet is for general reference only. For assessment of  
 specific conditions of trees, specialist advice from reputable contractors/  
 specialists is recommended.

**Reference**  
 [1] Harris R.W., Clark J.R. and Matheny N.P., "Arboriculture: Integrated Management of Landscape Trees, Shrubs, and Vines", 4th Edition, Prentice Hall, 2003.  
 [2] Hayes E., "Evaluating Tree Defects", 2nd Edition, Safetrees, 2005.  
 [3] Lilly S.J., "Arborists' Certification Study Guide", International Society of Arboriculture, USA, 2001.  
 [4] Matheny N. and Clark J.R., "Trees and Development. A Technical Guide to Preservation of Trees During Land Development", International Society of Arboriculture, USA, 1998.

綠化、園境及樹木管理組 發展局 Greening, L

Source: Development Bureau

在地面和地下均預留足夠空間  
 讓樹木生長  
 Allow sufficient space for tree  
 growth above and below ground

應將樹木種植於距離樓房/  
 建築物的適當地方  
 Plant Trees away from  
 Buildings/ Structures

應移除樹冠上  
 的枯枝或斷枝  
 Prune Dead or  
 Broken Branches

在工程期間應圍起  
 保護範圍以保護樹木  
 Fence the Tree Protection  
 Zone during Construction  
 for Protection

定期監測樹木的健康狀況  
 Monitor Tree Health on  
 a Regular Basis

正確剪除樹枝  
 Conduct Correct Pruning

應在根領外加蓋覆蓋層  
 Apply Mulch beyond Root Collar

應把樹木種植於正確的深度/  
 不要把樹木種植太深  
 (種植樹木時根領應往外露)  
 Plant Tree at Correct Level/  
 Do Not Plant too Deep  
 (Root Collar Should Be Visible)

樹木保護範圍 (以滴水線為界)

應在遠離樹木處停泊車輛  
 Keep Cars away from Trees

在挖溝時切勿填塞樹根  
 No Trenching through Roots

切勿在植樹時遺留包裹樹球的麻布/繩帶  
 Do not Leave Burlap/Wire at Planting

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Landscaping and Tree Management Section Development Bureau 6/2010









## 2 Environmental aspect

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(Hints: Aesthetic values, heat island effect, natural disasters, etc.)

## 3 Ecological aspect

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(Hints: Food chain, ecosystem, etc.)

## 4 Social aspect

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(Hints: Mental health, social harmony, etc.)







## 2.6.2 A case of fung shui woods

### History of fung shui woods

Old trees are believed to be closely linked to the fortune and development of a village, so they should not be chopped down casually. It is for this reason that fung shui woods behind rural villages are carefully preserved. To ensure good fung shui, all activities that might cause damage to these trees are forbidden.

In other words, thanks to a pious faith in fung shui, particularly the belief in a connection between trees and good fortune, trees and the natural environment have been preserved. Under the care and protection of the villagers, forests have matured and flourished over the years to form natural woods of great species diversity. Therefore, despite relentless human disturbances for centuries, mature and unique fung shui woods of high ecological value still enjoy a sustainable existence in the rural parts of Hong Kong.

Fung shui woods are mainly found in southern China. When setting up villages, early settlers would preserve the native vegetation (trees or shrubs) behind their homes. To maximise economic benefits, fruit trees, camphor trees, bamboos and other plants with commercial values were planted on the edges of the forests. With time, the vegetation merged to form the typical fung shui woods known today.



A typical layout of fung shui woods

A village of good fung shui is always shielded by rolling hills at the back and on two sides. Serving as a natural barrier, fung shui woods are located immediately behind the village. Fung shui woods will gradually take a crescent shape and embrace the village, just like a helmet covering a head.

Source: Agriculture, Fisheries and Conservation Department

### Functions of fung shui woods:

Psychologically	Environmentally	Economically
Fung shui woods offer a great sense of security to villagers not only because of their geomancy significance, but also because of their high cultural and ecological values.	Fung shui woods can bring beneficial changes to the microclimate. In summer, they mitigate the devastating impacts of typhoons, provide cool shade and lower the temperature. In winter, they create a better living environment by keeping the dry chilly north wind at bay. The woods behind the rural villages act as natural barriers. They intercept mountain torrents and sliding mud in the event of landslide, while dense broad-leaved tree forests are perfect fire breaks to halt spreading hill fires.	Trees, shrubs and herbaceous plants in fung shui woods and fruit trees on the fringes of the woods can generate extra income by providing food, herbal medicine, firewood and timber for construction.



### Activities

Know more about fung shui woods

1 Where can we find fung shui woods? Please list THREE locations.

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2 What valuable species can you find in fung shui woods? Please list FIVE of them.

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3 Comment on the ecological significance of fung shui woods and their importance in the preservation of native vegetation.

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Chapter 3

**The Relevance of Greening,  
Landscape and Tree Management  
to Our Quality of Life**





# Chapter 3 The Relevance of Greening, Landscape and Tree Management to Our Quality of Life

The greening, landscape and tree management work of the Government plays a significant role in enhancing the quality of life of the Hong Kong people.

Active planting and proper maintenance of trees and landscape not only improve the living environment and provide an ideal living and recreational space for the public, but also enhance the international image of Hong Kong.

## 3.1 Our green living environment

How much do you know about the greening, landscape and tree management measures taken by the Government?

**Guidelines for teachers**

Number of activities: 3

**Students' preparation:** Students are advised to find out more about the greening, landscape and tree management measures implemented in their neighbourhood/community before the lesson.

**Teachers' preparation:** For the Government's work on greening, landscape and tree management, please refer to Chapter 2 or visit the Greening website of the Development Bureau.

[http://www.greening.gov.hk/tc/about\\_gltms/greening\\_policy.html](http://www.greening.gov.hk/tc/about_gltms/greening_policy.html)



### Activities

1 I remember that ...

We can find out a lot of information on greening and tree management work in the media.

Let's share a piece of news that impresses you most, your personal experience, or a small idea or suggestion in greening work for discussion.

1 Question 1: What kind of greening or tree management work is mentioned in the box on the left page?

Answer: It is about \_\_\_\_\_.

2 Question 2: Why are you so impressed?

Answer: I am deeply impressed because ...

3 Question 3: Do you have any questions concerning the greening and tree management work mentioned above? If yes, what are they? If not, why?

Answer: Yes, I have a question about ...

Answer: No, I have no questions because ...

After Activity 1, you may find out that the greening, landscape and tree management work undertaken by the Government can improve our living quality and is closely related to our life.



### Activities

2 What can you see?

As mentioned in Chapters 1 and 2, the Government attaches great importance to greening, landscape and tree management work and has formulated relevant policies and measures. Can you name some of them?

Let's see if we can identify the greening, landscape and tree management work and facilities in the photos below. Students may also share their own experiences in the class to reinforce their understanding.





**Photo 1 (Hong Kong Park)**



Source: Development Bureau

What kind of greening, landscape and tree management work is shown in Photo 1?

What are the characteristics?

**Photo 2 (Country park)**



Source: Development Bureau

What kind of greening, landscape and tree management work is shown in Photo 2?

What are the characteristics?

**Photo 3 (Roadside greening)**



Source: Civil Engineering and Development Department

What kind of greening, landscape and tree management work is shown in Photo 3?

What are the characteristics?

**Photo 4 (Tree management)**



Source: Development Bureau

What kind of greening, landscape and tree management work is shown in Photo 4?

What are the characteristics?

**Photo 5 (Slope greening)**



Source: Civil Engineering and Development Department

What kind of greening, landscape and tree management work is shown in Photo 5?

What are the characteristics?



### Activities

③ A table of greening, landscape and tree management work in Hong Kong

Complete the table below with reference to the section on greening, landscape and tree management in Chapter 2, your personal experience and examples in daily life.








A table of greening, landscape and tree management work in Hong Kong

Hint:  
 Fill in the table below and prioritise the importance of the work.  
 "1" is the most important and so on.

Priority	Measures of greening and tree management work	Details of the work	Pros	Cons	Your personal experience and examples in daily life

### 3.2 Improving the quality of life through greening, landscape and tree management

What is the relevance of greening, landscape and tree management to our quality of life?  
 How can work in this area improve our living environment?



**Guidelines for teachers**

**Number of activities:** 4

**Students' preparation:** Active participation is essential for this activity. Students may share their own experiences in this section.

**Teachers' preparation:** This section is relevant to Module 2 of the Liberal Studies – Hong Kong Today. Teachers may elaborate on the concepts involved during the activities.

#### **Activities** 1 I think ...

What elements do you expect for an ideal public space?

Step 1: Jot down your ideas in the following box.

Step 2: What are your viewpoints on the following aspects?

Category	Your viewpoint
<b>Material life</b> (e.g. clothing, food, housing, transportation and daily necessities)	
<b>Living environment</b> (e.g. community facilities, green environment, transport system and public hygiene)	





Category	Your viewpoint
Neighbourhood relationship, community involvement and community recognition	

Step 3: Of the above three categories, which one do you consider the most important? Why?

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### Activities

#### 2 The green public space in my neighbourhood

The role and functions of green public space in a society should not be underestimated. Apart from providing a relaxing environment, it can also enhance our quality of life.

Let's visit the parks and explore their functions as green public space.

The park nearest to your home is: \_\_\_\_\_.

Apart from neighbourhood parks, try to find out other parks, zoos and gardens managed by the Leisure and Cultural Services Department at its website ([http://www.lcsd.gov.hk/en/ls\\_park.php](http://www.lcsd.gov.hk/en/ls_park.php)). You may also visit the Greening website at <http://www.greening.gov.hk/> for information on the Tree and Landscape Map. Which park is the biggest in your district?

Compare the characteristics of these two kinds of parks in the following table.

Characteristics	Park in the neighbourhood	Larger district park
Area		
Theme of Design		
Recreational facility		
Visitor		
Green area		
Species of tree		
Reasons of attraction		

In Hong Kong, there are various kinds of parks, zoos and gardens managed by the Government. Varied in location, size, design theme and the provision of recreational facilities, parks are the most convenient public open space in Hong Kong.

### Activities

#### 3 Parks and the quality of life

In general, there are three elements in measuring the quality of life. They are

1. the material life;
2. the living environment; and
3. the neighbourhood and degree of community involvement.

The first two elements can simply be classified as the tangible living quality and the last as intangible living quality. All elements are essential for enhancing our quality of life.

Please state how parks can enhance our quality of life in the following table.

Category	What facilities do parks offer to satisfy the following needs?	How can parks enhance our quality of life?
Material life (e.g. clothing, food, housing, transportation and daily necessities)	recreational needs:	
Living environment (e.g. community facilities, green environment, transport system and public hygiene)	social needs:	
	greening needs:	
	air quality and "heat island effect":	
Neighbourhood relationship, community involvement and community recognition	community and public participation:	
	community recognition:	





Parks are open space for everyone to enjoy, irrespective of their financial and social status. They can enhance both the tangible and intangible living quality of the general public.

## Activities

### 4 Advantages of parks

We can learn from Chapter 2 the role played by Kowloon Park in the provision of green public space. You may visit these "green lungs" to see what benefits the parks can bring to local residents or even to all citizens of Hong Kong.

#### Suggested activities:

- 1 Observe:** Walk around Kowloon Park and see how it satisfies the needs of the general public mentioned in Activity 6.
- 2 Listen:** Interview both local and non-local visitors. Listen and get to know more about their views on how an ideal green public space should be.
- 3 Feel:** Find out through observing, hearing, smelling and touching how this "green lung" provides an ideal green public space for the public.

You may visit the website of the Leisure and Cultural Services Department ([http://www.lcsd.gov.hk/en/ls\\_park.php](http://www.lcsd.gov.hk/en/ls_park.php)) and find out other district parks for exploration.



## 3.3 Example of enhancing the quality of life: The Hung Hom Promenade

The Hung Hom Promenade is another example of how green space enhances the quality of life of the general public.

Read the following information about the Hung Hom Promenade. Try to find out how the greening of the promenade enhances our quality of life. A field visit to the promenade is recommended.

#### Basic information

Located in the coastal area of Hung Hom, Kowloon, the 280-metre long Hung Hom Promenade provides the general public with a place for relaxation. Connected with the extended part of the Tsim Sha Tsui Promenade to the west and the Promenade adjacent to Hung Hom Ferry Pier to the east, it is also a great vantage point to enjoy the beautiful view of the Victoria Harbour.

The promenade, by providing a quality green recreational space, greatly enhances the living quality in the densely populated urban areas in Hong Kong.

#### Relevant information

**Opening of the Hung Hom Promenade and Tsim Sha Tsui Promenade Extension**  
September 3, 2011

The Hung Hom Promenade and Extension of Tsim Sha Tsui Promenade opened today (September 3), offering members of the public and tourists the opportunity to enjoy magnificent views of the Victoria Harbour from four kilometres of waterfront walkway.

Officiating at the opening ceremony this morning were the Secretary for Development, Mrs Carrie Lam; Chairman of the Harbourfront Commission, Mr Nicholas Brooke; Chairman of Kowloon City District Council, Mr Wong Kwok-keung; and Chairman of Yau Tsim Mong District Council, Mr Chung Kong-mo.

Mrs Lam said that the Government had strived to enhance the waterfront in recent years, creating continuous waterfront promenades on both sides of the Victoria Harbour with a view to providing more open space for public enjoyment and appreciation of the harbour scenery.

"This 500-metre long promenade linking the harbour frontages of Tsim Sha Tsui and Hung Hom has opened up a section of Hung Hom waterfront which used to be closed to the public. Members of the public can go to the Tsim Sha Tsui Promenade and the Star Avenue via this section of the promenade and the footbridge next to Salisbury Road. This four-kilometre long waterfront promenade stretching from Star Ferry Pier in Tsim Sha Tsui to Laguna Verde in Hung Hom is now fully connected," said Mrs Lam.

Mrs Lam added that the completion of the promenade was the product of concerted efforts and cooperation between the Government and the community. She also thanked the Harbourfront Commission and the two district councils for their full support for the project.





The Civil Engineering and Development Department was responsible for the overall design of the Hung Hom Promenade and Extension of Tsim Sha Tsui Promenade, which seeks to provide a tranquil and pleasant waterfront area for public enjoyment. In addition to footpaths for walking or jogging, the promenade also provides a large section of undulating lawn. Local residents and visitors will henceforth be able to fully enjoy the beautiful scenery of the Victoria Harbour and exciting fireworks displays during festivals.

To further promote the new promenade to local and overseas visitors, the Government has produced a map showing details of the new waterfront promenade from Hung Hom to Tsim Sha Tsui. The map, also bearing the new Victoria Harbour logo, is available free of charge at the Public Enquiry Service Centres of all District Offices and Visitor Centres of the Hong Kong Tourism Board.

Other guests attending the opening ceremony included Director of Civil Engineering and Development, Mr Hon Chi-keung; Deputy Director of Leisure and Cultural Services, Mr Cheng Kam-wing; District Officer (Kowloon City), Miss Winky So; and District Officer (Yau Tsim Mong), Mrs Vicki Kwok.



Opening ceremony of the Hung Hom Promenade and Extension of Tsim Sha Tsui Promenade

紅磡海濱花園及尖沙咀海濱花園(延伸部分)開幕  
 Hom Promenade and Extension of Tsim Sha Tsui Promenade Opening



Source: Development Bureau and Civil Engineering and Development Department

Category	What facilities do the promenades offer to satisfy the following needs?	How can the promenades enhance our quality of life?
Material life (e.g. clothing, food, housing, transportation and daily necessities)	recreational needs:	





Category	What facilities do the promenades offer to satisfy the following needs?	How can the promenades enhance our quality of life?
Living environment (e.g. community facilities, green environment, transport system and public hygiene)	social needs:	
	greening needs:	
Neighbourhood relationship, community involvement and community recognition	community and public participation:	
	community recognition:	



## Conclusion for Chapter 3

**Still remember the aim of this chapter?**

This chapter aims to explore the greening, landscape and tree management measures in Hong Kong and their importance. The Government has taken a comprehensive range of measures to beautify the city and provide a better living environment and ideal open space for the public. In the long term, this can help enhance Hong Kong's international profile.

This chapter also discusses the Government's work on greening, landscape and tree management, as well as real life examples of how urban greening can enhance the quality of living.





## Chapter **4**

### Opportunities and Challenges in Urban Greening and Tree Management





# Chapter 4 Opportunities and Challenges in Urban Greening and Tree Management

As mentioned in Chapter 1, owing to the special geographical and demographical factors of Hong Kong, urban greening, landscape and tree management works are crucial to enhancing the quality of life. However, these kinds of work are always challenging. What can the Government do to overcome the challenges and meet the expectations of different stakeholders under the principle of sustainable development while balancing the views of different stakeholders? Can Government address these challenges and meet the intended objectives?

## 4.1 Responses to the challenges in urban greening

What challenges arise when we carry out the greening, landscape and tree management works in Hong Kong? The following activities can help us understand more.



### Activities

#### 1 Going upwards

Identify the common characteristics shown in the photos below, analyse the underlying factors, and find out the challenges in urban greening and tree management.

Look at the photos below and answer the following questions.



Source: Development Bureau / Highways Department / Drainage Services Department

1 Where are the greening projects located?

2 What are the common characteristics of the urban greening projects shown above?

3 What are the challenges faced by the Government in carrying out urban greening to enhance the environment?

With a limited amount of land, Hong Kong rarely carries out extensive urban greening at ground level. To increase the amount of urban green area for enhancement of the quality of urban spaces, the Government has introduced a skyscraper greening method which employs various architectural and engineering techniques to overcome the lack of space for greening.

For more information on skyscraper greening and the utilisation of green space in buildings, please refer to the relevant sections in Chapter 2.



### Activities

#### 2 Over-crowdedness and limited space

Look at the photos below and answer the following questions.



Source: Civil Engineering and Development Department

1 Identify the problems related to urban greening as shown in the photos.

2 As shown in the photos above, what are the challenges faced by the Government in urban greening?





**3** How can the Government increase the urban green area while overcoming the challenges?

(Hints: Walk along the roads and see if you have any discoveries at the roadside and central median.)

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**Activities**

**3** Life cycle of trees

Trees, like other living creatures, have their own life cycles. However, people leading a hectic city life may not be aware of such life cycles. Managing trees in the densely populated urban areas with heavy traffic flow is both an important task and a great challenge to the Government.

Watch the following video and learn more about tree management:

Common Tree Problems

[http://www.trees.gov.hk/en/tree\\_care/edu\\_video\\_tree\\_problem/index.html](http://www.trees.gov.hk/en/tree_care/edu_video_tree_problem/index.html)

**1** What are the problems related to tree management as shown in the video?

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**2** Have you ever seen any unhealthy or dead trees? Please share your experiences.

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Trees, like other living creatures, have their own life cycles. To enhance the quality of greening and tree management, it is necessary to carry out regular monitoring and daily tree maintenance.

Apart from legislative work, the Government has also taken a series of administrative measures for tree protection, including the promulgation of technical circulars by the Development Bureau (Works Branch), which prohibit unauthorised tree felling in public works projects.

Furthermore, the Government has included the "tree preservation clauses" in the land lease since the 1970s, which prohibit redevelopment projects from breaching the land lease conditions. To avoid unnecessary tree felling in private development projects, the authorities also require the developers to seek prior approval from the Lands Department before removing any trees on the leasehold land.

With regard to planning, land owners have to ensure that the proposed redevelopment projects comply with the planning controls for the sites (e.g. zoning and other development restrictions as specified in

the Outline Zoning Plan, departmental plans and planning briefs). If planning application is required under the Town Planning Ordinance (Cap. 131), technical assessment of the impacts of the proposed redevelopment, such as impacts on the environment, drainage, traffic, infrastructure, geotechnical conditions, landscape, urban design etc., may be required to support the planning application. As for old land leases without any "tree preservation clauses", the Government may impose new requirements on tree preservation by means of lease modification when redevelopment opportunities arise.

For more details on the greening, landscape and tree management work carried out by the Government, please refer to Chapter 2. You can also find out more information on trees at the Trees website ([www.trees.gov.hk](http://www.trees.gov.hk)) of the Development Bureau.



**Activities**

**4** Balancing stakeholders' interests

Summarise the challenges in urban greening, landscape and tree management, as well as the Government's response to these challenges in providing a better green living environment.

Use the following table to summarise the greening and tree management work carried out by the Government in response to the challenges faced in improving the living standards of the urban population.

	Challenge	Stakeholder	Response from the Government
Activity 1			
Activity 2			
Activity 3			
Any other suggestions?			

In the course of creating greenery areas and enhancing its quality in Hong Kong, different stakeholders will be affected. Environmental factors should be taken into account in the pursuit of economic development of Hong Kong. This is in line with the concept of sustainability which maintains a proper balance between various needs.

For more information on the concept of sustainability in greening and tree management, please refer to Chapter 6.





## 4.2 Story of old trees on Nathan Road

Trees that meet the criteria of Old and Valuable Trees (OVTs) are put on the Register of Old and Valuable Trees. About 100 OVTs of 13 different species are located in Yau Tsim Mong District. Among them, around 30 are *Ficus microcarpa* (Chinese Banyan tree) which stand along Nathan Road in Tsim Sha Tsui. The boulevard formed by the canopies of these trees has become an iconic landmark of Nathan Road.



Source: Leisure and Culture Services Department

How do these trees improve the quality of urban life?

	Short-term effect	Long-term effect
Health aspect		
Psychological aspect		
Economic aspect		
Other aspects		

While old trees may improve the quality of urban life, some of them are very old and their growth is seriously hampered (e.g. limited room for root growth) by city development such as the building of roads. Some of the trees are too old to recover from diseases and may have to be removed after careful examination by tree specialists for the sake of public safety. This is one of the challenges in urban tree management work.

For example, in 2011, a Chinese Banyan tree located near the car entrance of St. Andrew's Church on Nathan Road, Tsim Sha Tsui was removed due to severe damage by vehicles and fungal infection causing decay. Although a series of remedial measures had been taken throughout the year, including wound care, application of fungicide and pesticide, as well as trimming to reduce the weight of the tree crown, no improvement was seen during the half-yearly and annual inspection. Since it was located in an area with high pedestrian and vehicular flow, it had to be removed for public safety.

Old trees have historical and scenic values and their felling may sadden some. However, the health of trees, safety of pedestrians and costs of protection must also be taken into account in determining whether a tree should be preserved. It may not be wise to protect a tree in danger at all costs regardless of other consideration factors. Case studies of other countries can be found in Chapter 6.



Source: Leisure and Culture Services Department

Photos of the Chinese Banyan in the above case





### 4.3 Other greening work in the urban areas

#### Greening Master Plan (GMP)

During the development of the GMPs, community forums were organised to collect public views on greening. The GMP seeks to define the overall greening framework of a district, and serves as a guide for all parties involved in the planning, design and implementation of greening works. In addition to identifying suitable locations for planting, the GMP will establish the greening theme and propose suitable planting species. The urban GMPs were completed in mid 2011.



Source: Civil Engineering and Development Department

#### Greening Master Plan

District	Photo	Theme	Description
Tsim Sha Tsui		Jade Necklace	Linking up major green areas including Kowloon Park and Centenary Garden. A green network is formed along Nathan Road and Salisbury Road.
Central		Heart of Gold	Vegetation with golden, yellow, orange or red flowers and foliage, and trees with a large crown are planted to reflect Central's role as the financial centre of Hong Kong.
Sheung Wan, Wan Chai and Causeway Bay		Rainbow	The Rainbow refers to the northern coast of Hong Kong Island evolved from a series of strip-like reclamation with unique land use and greening characteristics.
Mong Kok and Yau Ma Tei		Green Kaleidoscope, Coastal Scenery and Parkland	Plant species commonly found in coastal areas and parks are used to highlight the characteristics of existing landmarks and the West Kowloon waterfront.
Western		Civil Elegance and Joyful Renaissance	Sai Ying Pun is an area where numerous historic monuments, educational institutions and the Dr. Sun Yat-sen Historical Trail are located. Scholar Trees and White Jade Orchid Trees are planted to create an intellectual atmosphere. The MTR Line will soon revitalise Kennedy Town and Happy Trees are selected to highlight the theme.
Southern		Bauhinia Neighbourhood, Incense Harbour and Ruby Shores	Southern District commands the panoramic seaview of the South China Sea. Plant species with leaves which turn reddish seasonally is chosen to create a romantic atmosphere. Incense Harbour depicts Aberdeen as a port for the export of incense. Incense Trees are chosen to highlight the origin of the Chinese name of Aberdeen.





District	Photo	Theme	Description
Eastern		Royal Palm Boulevard, Elegant Bay and Tranquil Garden	The status of King's Road as the main road in North Point is highlighted by plants like Royal Palms, which have a symmetrical and majestic appearance. The other theme highlights the tranquility of Chai Wan Park and Flame Trees, which were used for making matches or firewood in the past, are used to highlight the history of the area. The last theme also hints at Shau Kei Wan's past as a storm shelter for fishermen. It is suitable to use plants like Big-leaved Figs, which are tough and adaptable to the coastal environment.
Sham Shui Po		Golden Kaleidoscope and Scenic Vistas	The theme symbolises the hustle and bustle of this traditional commercial and residential area. It is a continuity of the theme for Mong Kok and Yau Ma Tei. Autumn Maples, Golden Rain Trees and Yellow Pui are selected for the theme.
Kowloon City		Verdant Parkland and Vibrant Heart	While the former theme suggests a tranquil parkland environment, the later aims to create a dynamic atmosphere in To Kwa Wan and Hung Hom. Plants with vibrant colours or interesting shapes, such as African Tulip Trees, Alexandra Palms, and Weeping Figs, are used.
Wong Tai Sin		Celestial Garden, Vibrant Rainbow and Shady Palm Garden	The first theme reflects the spiritual and religious significance of the Wong Tai Sin Temple and Chi Lin Nunnery to the area, and species commonly found in traditional Chinese-style gardens, such as the Dragon Juniper, Peepul Tree and Yellow Pui, are selected. The second theme aims to brighten Choi Hung District with a variety of plant species such as Sweet Gum, African Tulip Tree, Garden Shower, Spider Tree and Jacaranda. The last theme highlights the gradual transformation of the area into the Kai Tak Development Area.
Kwun Tong		Jade Crescent and Sunny Prospect	The theme depicts the spectacular view of sunrise between the Victoria Harbour and the green mountainous backdrop behind Ngau Tau Kok, Sau Mau Ping and Lam Tin. The palette contains species of vivid colours, such as the Purple Tabebuia and Kassod Tree, to symbolise the evolution and progress of these areas and the greening opportunities along the coast through redevelopment and species like Cuban Bast which adapt to the coastal environment.

### Discussion

"Right tree, right place" is a very important principle of greening. For example, trees on the roadside should not obstruct the view of drivers; fruits should not cause injury to pedestrians; and enough room should be provided for the growth of plants.

State the plant selection principles with reference to the GMP table on the previous pages:

	Example and description
Principle 1 :	
Principle 2 :	
Principle 3 :	



Source: Development Bureau





## Other land development in urban districts

The Government has included the "tree preservation clauses" and "landscape clauses" in the land lease since the 1970s. To avoid unnecessary tree felling in private development projects, the authorities require the developers to seek prior approval from the Lands Department before removing any trees. For redevelopment projects, the Government may impose new requirements on tree preservation by means of lease modification.

### Future green area - The Kai Tak Development

The Kai Tak Development spans over 320 hectares, over 100 hectares of which will be assigned to open space uses. According to a sustainable landscape design, a diverse green network consisting of parks, gardens, a civic plaza and a waterfront promenade will be created, which links up the adjoining residential and commercial districts with green passages, including Metro Park, Runway Park Station Square and the waterfront promenade, etc.

The streetscape will be characterised by a continuous green road network lined with trees to create a tree avenue effect. To enhance the openness of the streets, hedges will substitute the railings along the roadside and central reservation.

Artist impression of amenity area - The Kai Tak Development



Source: Civil Engineering and Development Department

Moreover, extensive roadside amenity area will be set up throughout the road network within the Kai Tak Development Area to foster a pleasing environment for the pedestrians. Materials of different textures and colours will be used in the amenity area to enhance its value for public enjoyment. Thematic trees and landscape plants will also be planted at specific locations along the road to enhance the overall aesthetic value and reduce the noise generated by vehicles.



Source: Civil Engineering and Development Department



## Conclusion for Chapter 4

- 1 There are a number of challenges in urban greening, such as limitation of space, traffic considerations, as well as the need to balance the interests of various parties.
- 2 The Government responds with a series of policies and measures, including the introduction of new technologies, enhancing communication among relevant parties, implementation of GMPs, as well as formulation of greening plans for new development areas.
- 3 "Right tree, right place" is a very important principle of greening.





Chapter **5**

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**Greening in the Countryside —  
Challenges and Opportunities**





# Chapter 5 Greening in the Countryside - Challenges and Opportunities

The previous chapters have dealt with the history of greening in Hong Kong, the extensive plantation work in the countryside, and how we live in harmony with nature. This chapter aims to look at the challenges and issues related to greening in the countryside.

## 5.1 Country parks and related development in the vicinity

There are 24 country parks in Hong Kong which are all protected by the Country Parks Ordinance (Cap. 208). The Agriculture, Fisheries and Conservation Department is responsible for the management of these parks.

Under the Forests and Countryside Ordinance (Cap. 96), plants in the areas are protected by law and damaging of plants is prohibited. In addition, Section 16 "Control of use of land in country park" of the Country Parks Ordinance requires that any person should obtain the approval of the Country and Marine Parks Authority for the development and use of private land inside the park.

Thanks to the legal protection, plants in the country parks are well preserved and managed with only a few instances of illegal development and intentional damage found.



Source: Agriculture, Fisheries and Conservation Department



Source: Agriculture, Fisheries and Conservation Department

There are private land and buildings on the periphery of country parks. They are not part of the country parks but their development is governed by land leases or the Outline Zoning Plans under the Urban Planning Ordinance.

Since some of the land is privately owned, the Government cannot prohibit activities that are not in line with the principle of nature conservation (e.g. war games), as long as these land uses are permissible under the Outline Zoning Plans.

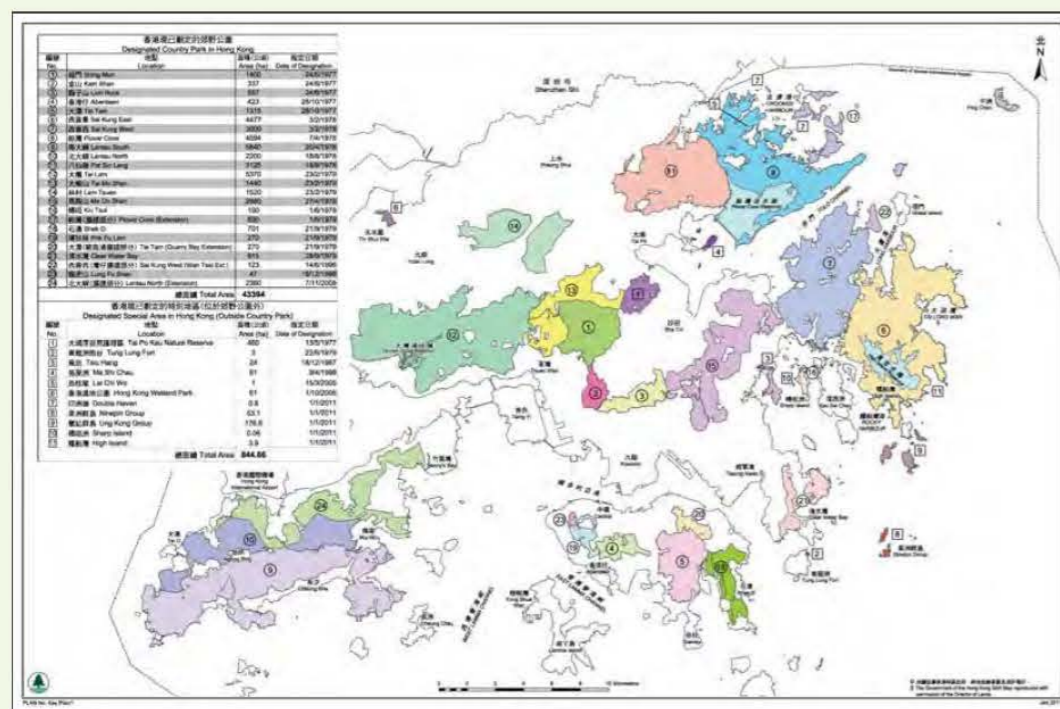
However, since these land developments may have an impact on the natural environment of the country parks nearby, there is growing concern over whether such developments should be restricted.



### Case study

Sai Wan in Sai Kung is a farming area near the Sai Kung East Country Park. This picturesque place ranked first in the 2006 Hong Kong Best Scenic Sites Election.

In June 2010, vegetation and trees were removed and bulldozers were used to carry out construction works for the building of an artificial lake on the periphery of a country park. Action was taken by the community to protect the area. Subsequently, the Government gazetted in August 2010 that the area concerned should be included in the Outline Zoning Plans for a period of three years, and any further developments other than farming activities should obtain the approval of the Government.



Source: Agriculture, Fisheries and Conservation Department





### Study Activity 1

What are the viewpoints of the stakeholders concerned and the actions taken by them?

	The public	Private land owner	The Government
Viewpoint/ Value judgment			
Action			

### Discussion 1

"The Government should buy all the land in the vicinity of the country parks in order to prevent similar incidents in future." Do you agree?

Perspective	Agree	Disagree

## 5.2 Relationship between trees and road development

While tree protection is very important, sometimes it is necessary to remove trees to make way for economic development. We should strike a balance between these two needs.

In general, surveys and studies should be carried out and the following factors taken into account before the launch of construction works and removal of trees:

- 1 Prevention:** Trees should be removed only if there are no other options available
- 2 Minimisation:** If removal of trees is inevitable, careful planning should be carried out to minimise the number of trees affected
- 3 Remedy:** Trees should be replanted after the completion of projects

### Case Study

The Tolo Highway, part of the New Territories Circular Highway network, is a busy highway connecting Sha Tin and North District. It is an expressway for residents in Fanling and Tai Po and trucks from Mainland China. However, it was expected that the highway would not be able to accommodate the increasing number of vehicles due to the rapid growth of trade between Hong Kong and the Mainland, as well as the planned development in Kwu Tung and the eastern part of the New Territories.

In August 2009, Phase II of the highway widening project between Tai Po and Fanling was carried out to turn the three-lane carriageway into a dual four-lane carriageway with road shoulders. An environmental impact assessment carried out in accordance with the law found that some 10 000 trees had to be removed, and the woodlands affected were of low to medium ecological value. Furthermore, the majority of trees affected were only common species.

After the completion of the project, more than 3 620 large trees with a diameter of over 75 millimetres, 44 000 seedlings and 50 500 shrubs will be replanted along the highway. The trees to be replanted will outnumber the original trees affected by the project.



Source: Planning Department





### Discussion 2

How does the project manage to strike a balance between economic development and environmental protection?

Prevention	
Minimisation	
Remedy	

### Study Activity 2

Widening works may also have to be carried out on other highways (e.g. Hiram's Highway), which may affect old trees at the roadside or Fung Shui Woodland. Discuss whether it is worthwhile to abandon the construction plans in order to protect the trees.

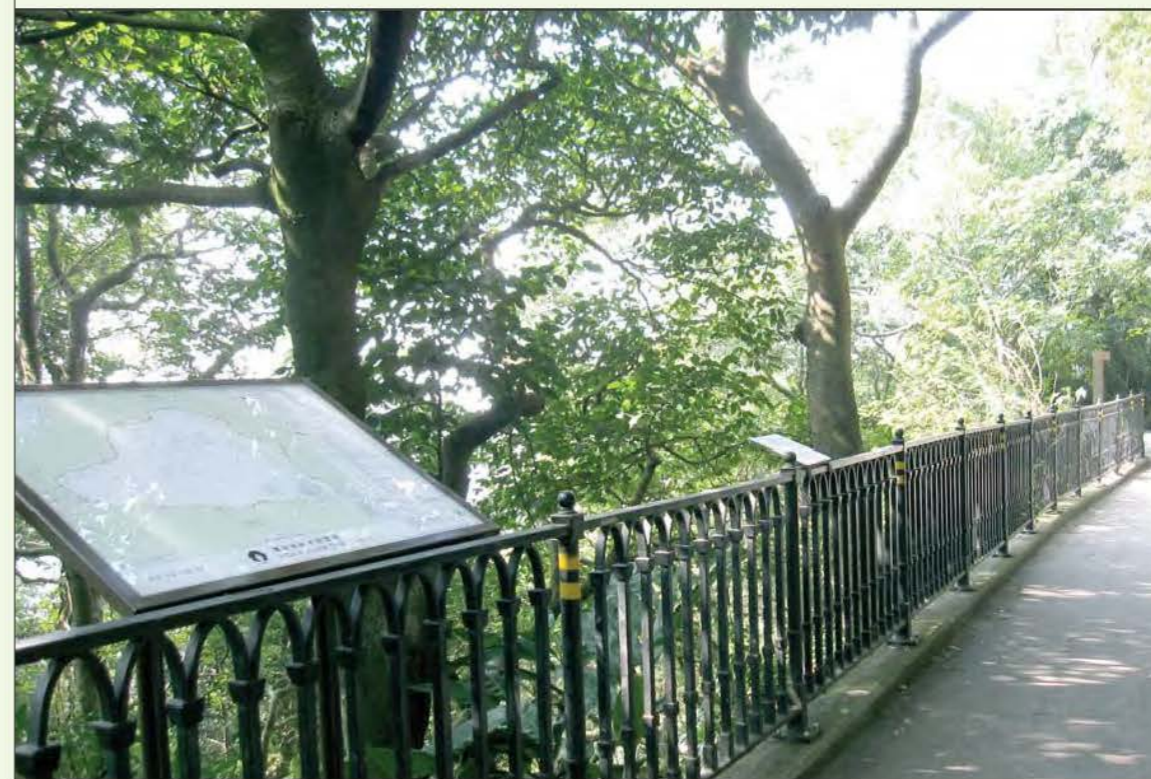
	Worthwhile	Not worthwhile
Principle 1		
Principle 2		
Principle 3		

### 5.3 Opportunities to learn more about trees in the countryside

In April 2012, the Agriculture, Fisheries and Conservation Department launched the "Country Parks Tree Walks" mobile application to promote tree conservation in Hong Kong's country parks. The application features 96 tree species planted along the 16 tree walks in the country parks with photos and text descriptions.

Users can make use of the camera and GPS system in their mobile devices to find out information of a specific tree. The co-ordinates and name of the tree will then be displayed on their devices. Alternatively, users can input the tree name or a particular month, and the application can easily locate the tree or the species along the tree walks that are currently in the flowering period. Videos and photos of the tree walks, and trees and flowers in other seasons are also available.

Such technological advancements can help develop a greener environment and enhance our knowledge of trees.



Source: Agriculture, Fisheries and Conservation Department





## 5.4 Opportunities for greening in new towns

The Government is currently developing new towns, such as Kwu Tung and Hung Shui Kiu, to cater for the population growth. Under the landscape master plan prepared in the early stages of new town development and in the absence of restrictions (such as the existing buildings and streets), greening projects in these new developments can be implemented more effectively, and the ratio of green coverage in new towns is often higher than that in urban districts.

Take Sha Tin and its 600,000 residents as an example. Shing Mun River has been designed as the focal point of recreation with parks, cycling paths and other recreational facilities provided on both sides of the river, including the 9-hectare Sha Tin Park with theme gardens (such as the Azalea Garden).

Similarly, to foster the "green finger" concept in the overall planning of Ma On Shan, three strips of open space running in an east-west direction will be developed, which will serve as the green visual corridors separating the high density developments.

Community forums on the greening master plan of Sha Tin were held in March 2012 to facilitate better planning for the future.



Source: Planning Department



Source: Development Bureau

## Conclusion for Chapter 5

- 1

Greening work and tree protection do not necessarily call for a complete ban on tree removal. Tree removal can be carried out after careful planning and balancing its impacts on the economy and environment.
- 2

Apart from protecting the greenery in the country parks, the authorities should also preserve the area in the vicinity in the long term.
- 3

Many new towns are to be planned and developed in the foreseeable future due to population growth. Incorporating the greening elements in the planning stages will ensure a more comfortable living environment.

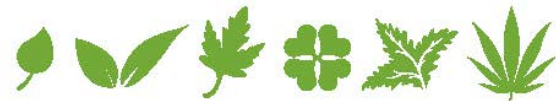




## Chapter 6

### Greening, Landscape and Tree Management — a Concerted Effort





# Chapter 6 Greening, Landscape and Tree Management - a Concerted Effort

## 6.1 Case study - tree transplanting

As part of the Kwun Tong redevelopment project, the Yuet Wah Street bus station had to be relocated together with its adjacent 40-year-old Chinese Banyan. To conserve this healthy tree, the Urban Renewal Authority and the developer decided to transplant it in Yuet Wah Park some 70 metres away.

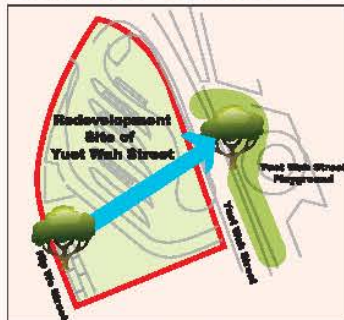
The tree and the soil had a total weight of 300 tonnes, equivalent to that of two 747 airplanes. With careful planning for a year and a half, the transplanting work commenced at midnight on 1 May 2011. About 100 people were mobilised to ensure that the work could be completed on schedule. The whole process included building a giant container pot to house the tree and closing the road for six hours in order to install a temporary track system to move the tree across the road. The tree was finally settled in the new location though at a cost of several millions.

Tree specialist observed that new roots and leaves were growing, indicating that the tree was restoring good health conditions. Under proper care including the provision of temporary props, the tree would continue to flourish and provide a green environment for the local residents.

Before and After the Relocation of Chinese Banyan Tree in Yuet Wah Street



Before the Tree Transplant



Tree Transplanting Route



Temporary Track System



After the Tree Transplant

Source: Urban Renewal Authority and Development Bureau

### Discussion

- Who are the stakeholders in the above case? What roles do they play in protecting the Chinese Banyan tree?

Stakeholder	Role or measure / action taken

- From the above case, what do you think are the factors that contribute to the successful preservation of the tree?

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## 6.2 Various stakeholders in greening and tree protection

Worksheet	
<b>The Government</b>	We will improve the living environment of Hong Kong and enhance the quality and quantity of greening. Moreover, we will also enhance public knowledge of greening and tree protection.
<b>Private companies</b>	We will support the Government's policies by adopting vertical greening and roof greening to reduce energy consumption. We will also increase green area in private estates and sponsor the afforestation plan.
<b>Schools</b>	Our school has just won the Hong Kong Green School Award. Students can learn more about the importance of greening through participation in organic farming and roof greening.
<b>Environmental groups / organisations</b>	We will continue to promote the importance of a greener environment, increase public awareness and provide comments and recommendations on government policies.
<b>Photographers</b>	Greening can enhance the natural beauty of our urban environment. We should take good care of the old trees as they are favourite themes for photographers.
<b>The public</b>	A greener environment brings fresher air which is of particular importance to those with respiratory diseases. It also makes our lives more comfortable and is good for our mental and physical health.

### Group discussion - Topic 1

What are the viewpoints of the above stakeholders on greening?

### Group discussion - Topic 2

How can students participate in greening and tree protection?

## 6.3 Stakeholder 1 Government departments

As a stakeholder, the Government participates in greening through policy making, administrative measures, construction projects and education, etc. It also coordinates the efforts of and works with the private sector, schools and the general public to enhance public awareness. Moreover, the Government plays an indispensable role to handle urgent cases by mobilising and coordinating resources.

### At policy level

In the 1999 and 2000 Policy Address, the Government undertook to promote greening, especially in the urban areas, to make Hong Kong a green model city in Asia.

The greening policy aims to improve the quality of our living environment through active planting, proper maintenance and preservation of trees and vegetation. The current target is to bring about noticeable improvements in urban greenery, enhance existing green areas, and pursue quality greening during the planning and development of public works projects. To make this possible, the Government encourages the participation of the private sector and the general public.

The Greening, Landscape and Tree Management Section established under the Works Branch of the Development Bureau in March 2010 advocates a new and strategic policy on greening, landscaping and tree management, with a view to achieving the sustainable development of a greener environment in Hong Kong.

### Greening Master Plan

The Greening Master Plan seeks to define the overall greening framework of a district, and serves as a guide for all parties involved in the planning, design and implementation of greening works.

### Greening Master Plan - Tsim Sha Tsui District



Source: Civil Engineering and Development Department





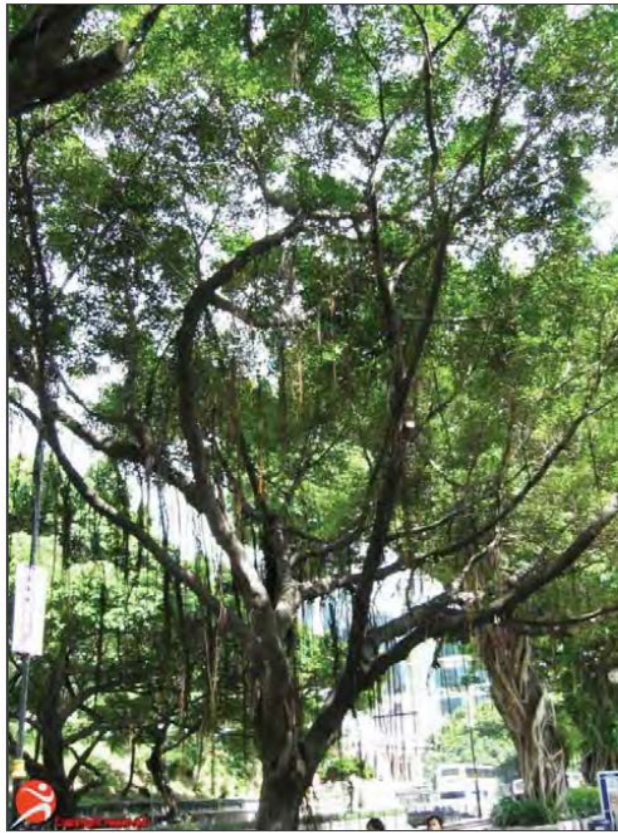
## Register of Old and Valuable Trees and other guidelines

Hong Kong has a lot of old trees and some of them have a history of over 100 years. We have to formulate policies and strategic plans to protect these trees in a systematic way.

To facilitate the protection of old trees, the Government has uploaded the Register of Old and Valuable Trees to the Internet for public reference. Besides, it has also included the tree protection requirements in the works contracts to protect trees growing within the works areas.

The Government has also compiled manuals for greening and promulgated relevant technical circulars, guidelines, specifications, information on planting design and vegetation protection, etc. for different departments to have a common set of standards and guidelines.

Tsim Sha Tsui  
*Ficus microcarpa*



Source: Leisure and Cultural Services Department

Kowloon Park  
*Albizia lebbekii*



List out the selection criteria for the inclusion of Old and Valuable Trees in the Register.

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## At construction and engineering level

There are a lot of slopes in Hong Kong and the CEDD is responsible for the enhancement of slope greening under the Landslip Prevention and Mitigation Programme. In addition to creating a greener environment, slope greening is also an effective measure for landslip prevention.

The Civil Engineering and Development Department (CEDD) - slope greening

Upgrading works (Sai Yeung Choi Street North)

Before



Upgrading works (Sai Yeung Choi Street North)

After



Source: Civil Engineering and Development Department

Landscape rehabilitation covers planting and associated maintenance works on sites with heavy soil erosion or in disturbed areas (e.g. borrow areas, quarries, vegetated areas damaged by hill fires, etc.) These areas require the rehabilitation of vegetation cover in order to provide an ecologically sustainable habitat and foster biodiversity.

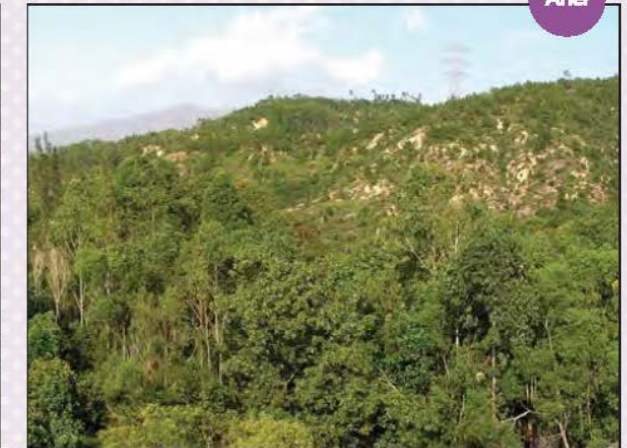
The CEDD - landscape rehabilitation

Afforestation programme

Before



After



Source: Agriculture, Fisheries and Conservation Department





Quarry after rehabilitation (Turret Hill Quarry)



Quarry after rehabilitation (Anderson Road Quarry)



Source: Agriculture, Fisheries and Conservation Department

### Common components of landscape rehabilitation works:

- Planning and field surveillance: Find out the condition and extent of the sites requiring rehabilitation to assess whether the sites are suitable for planting.
- Planting design and strategies: Use the fast growing "Pioneer species" that can thrive under harsh conditions with a view to improving the microclimate and providing shelters for the plants beneath. Firebreaks are also allowed in the planting design so as to control the damage to woodlands caused by hill fires.
- Silviculture: Including thinning and pruning of tree species for optimum density.

### The Highways Department and other works departments

Greening elements are included in road works such as roadside planting.



Roadside amenity

Source: Civil Engineering and Development Department

### Housing Department

The horticulture teams under the Housing Department are responsible for the landscaping works inside the estates, including the annual landscape beautification works for 18 public housing estates. Some estates even have their own theme gardens and residents can join the Action Seeding Programme to help nurture seeds at home and contribute to community greening.

Sun Chui Estate - Palm and Terminalia Garden



Horticulture team



Source: Housing Department

### Exhibitions and educational resources

The Development Bureau organises regular talks and provides technical support for the community by sharing its experiences in roof greening and vertical greening.

### Hong Kong Flower Show

Organised each year by the Leisure and Cultural Services Department (LCSD), the Hong Kong Flower Show exhibits a great variety of flowers and promotes the integration of plants into our daily lives.

2011 Hong Kong Flower Show



Source: Leisure and Cultural Services Department





**Greening Newsletters**

**Greening Newsletters**

The Greening Newsletter is published by the Greening, Landscape and Tree Management Section of the Development Bureau on a quarterly basis with different greening topics and focuses to promote the latest activities on greening.



Source: Development Bureau

**Green Education and Resource Centre**

**Green Education and Resource Centre**

Located in Kowloon Park, the centre promotes and enhances public awareness of greening and environmental protection.



Source: Leisure and Cultural Services Department

**Shing Mun Arboretum**

**Shing Mun Arboretum**

The arboretum boasts a collection of some 300 species, some of which are rare and endangered species. The public can learn more about different kinds of indigenous species in the arboretum.



Source: Agriculture, Fisheries and Conservation Department

**6.4 Stakeholder 2**  
**The private sector and non-governmental organisations (NGOs)**

NGOs, including organisations interested in environmental protection, can help promote the importance and awareness of greening and environmental conservation, and provide professional advice on government greening policies.

**Activities**

What are the NGOs in Hong Kong that are related to environmental protection? List three of them and briefly describe their focus of work.

Name of NGO	Focus of work

**Private sector**

The Government encourages the private sector to participate in greening. Examples include:

**Vertical greening**



Source: Development Bureau

**Skyrise greenery seminar**



Source: Development Bureau

Skyrise greenery seminars provide professional knowledge and support for interested enterprises. The Skyrise Greenery Awards are organised to give recognition to exemplary projects which integrate skyrise greenery into buildings.









### One Person, One Flower Scheme



"One Person, One Flower Scheme" promotes a green culture among students, develops their interest in growing plants and enhances their tree care awareness.

Source: Leisure and Cultural Services Department

Relevant greening topics may be included in the school syllabus to encourage students in different grades to learn about the relationship between people and nature through different subjects and perspectives. For example:

Subject	Relevant content
Liberal Studies	The rights and responsibilities of the people of Hong Kong Urban and landscape greening – To alleviate air pollution, regulate climate, improve soil and ecology, and beautify the environment through tree and vegetation planting
Biology	To learn more about the common plant species The life cycle of plants
Geography	To learn more about the natural and urban landscape Population pressure, urban landscape, interaction between people and nature

### Think about it

In what ways can student associations/interest groups or student unions promote greening?

	Name/Nature of activity	Details/Aims
Method 1		
Method 2		

## 6.6 Stakeholder 4 - Students and the general public

Students and the general public are new forces in greening. Some people wrongly believe that it is the sole responsibility of the Government to promote greening. In fact, there are a great variety of greening activities for the participation of the public according to their personal interests and needs, for example volunteer work, guided tours, planting, photo competitions, etc.

On tree preservation, the Government has been promoting some simple methods for tree inspection so as to foster a culture of tree care. Besides, the public are encouraged to report problem trees to the "1823" Call Centre to ensure personal safety.

### Volunteer scheme

The Volunteer Scheme of the Wetland Park has been implemented since 2002. Activities of the scheme include training in wetland conservation to enable direct involvement of the public in wetland preservation.

Organised by the LCSD, the Green Volunteer Scheme has been recruiting Green Volunteers from all 18 districts to undertake simple horticultural maintenance for street trees, and provide outreaching services for schools and elderly centres to spread the green message.

#### Volunteers in wetland park



Source: Agriculture, Fisheries and Conservation Department

#### Green Volunteer Scheme



Source: Leisure and Cultural Services Department

### Community participation

Despite limited space, there are still ample greening opportunities in the urban areas. Apart from direct engagement in greening work, the Government also encourages community participation in greening activities, such as the Community Planting Day and Community Garden Programme organised by the LCSD, to raise public awareness of greening and nurture a sense of belonging to the community. Besides, the Greening Hong Kong Activities Subsidy Scheme is also set up to invite community organisations to work hand in hand with the Government in promoting greening.



Source: Leisure and Cultural Services Department

#### Community Planting Day





### Horticulture course

For those who are interested in horticulture and gardening techniques, they may enhance their skills through the horticulture training courses organised by the LCSD.



Source: Leisure and Cultural Services Department



Source: Agriculture, Fisheries and Conservation Department

### Experiencing the nature

An excursion to the countryside is not only refreshing but can also enhance our knowledge of trees and greenery protection. There are tours like the Tree Walks Guided Tours, Hoi Ha Wan Ecotour Service, Kadoorie Farm and Botanic Garden Guided Tours etc., in which trained tour guides will inspire participants with a new perspective to appreciate the nature.

### Exchanges and competitions

The "People, Trees, Harmony" Photography Contest held by the Greening, Landscape and Tree Management Section encourages students and the general public to bring out the message through their lens that people and trees can co-exist in harmony. Winning entries demonstrate unique scenes of our green environment with great photographic skills.

The Greening and Trees websites are set up and a series of pamphlets is available with the latest news on greening, landscape and tree management. Parents can share the information with their children to raise their awareness of greening and tree care at a young age.



Winning entry of the 'People, Trees, Harmony' Photography Contest 2012 -13

## Tree Management and Community Surveillance

Tree management in government land is undertaken by government departments. Public participation, however, is also crucial to its success.

There are hundreds of thousands of trees in Hong Kong providing comfortable and quality living environment for us. The general public through acquiring some basic knowledge of tree management and surveillance methods can help identify trees with health or structural problems so that timely mitigation measures can be undertaken. This will enhance safety and promote a sense of belonging through community participation.

The Tree Management Office has also prepared a pictorial guide online ([www.trees.gov.hk](http://www.trees.gov.hk)) to help the public identify various health and structural problems of a tree so that the public can participate in the community surveillance of trees with an ultimate aim as to bring harmony between people and trees and to enhance the quality of our living environment.

For reporting problematic trees, please contact 1823 through one of the following channels:

Tel: 1823  
Fax: 2760 1823  
Email: [tellme@1823.gov.hk](mailto:tellme@1823.gov.hk)  
Mobile Apps: Tell me@1823  
Web Site: [www.1823.gov.hk](http://www.1823.gov.hk)

### Minimising Tree Risks

#### Why is tree maintenance important?

Proper tree maintenance contributes to the healthy growth and good form of trees. Healthy and structurally stable trees are valuable assets to our environment. Many tree failures are triggered by poor tree maintenance such as improper pruning, topping, damage to the root system and other malpractices in tree care. Tree failures could cause injury and loss of human lives and damage to properties.

#### Who is responsible?

Property owners are responsible for trees within their lots. Property owners may also be liable under specific lease conditions for the maintenance of trees within or adjoining their lot.

Trees are living organisms and their condition may change with time. Owners should inspect trees within their premises at least once a year and take appropriate measures before the onset of the wet season. Routine tree maintenance works should be carried out by a competent landscape service provider or an arborist/ tree specialist.

If your building is held in multiple ownership, it is preferable for the Owners Corporation to coordinate the maintenance of the trees for which you are collectively responsible. If you need further advice on how to set up an Owners' Corporation, please consult your nearest District Office.

#### Preliminary maintenance inspections

The primary purpose of preliminary maintenance inspections is to identify the need for tree maintenance works. Property owners as well as property management or maintenance staff could carry out such preliminary maintenance inspections and seek professional advice as necessary.

In carrying out preliminary maintenance inspections, you should check a tree for any of the following signs and take appropriate action (see 'Pictorial Guide for Tree Maintenance to Reduce Tree Risks').

1. Leaning 
2. Dieback twigs/ dead branches/ hangers 
3. Cracks/ splits/ wood decay/ cavities 
4. Fungal fruiting bodies 
5. Severely cut/ damaged roots 
6. Topping/ improper pruning 

#### How to reduce Tree Risks?

Depending on the identified tree risks, abatement measures may include:

- Restricting access;
- Removal or relocating the objects that may be hit by a fallen tree/ branch;
- Monitoring tree and/or site conditions;
- Appropriate pruning;
- Cabling, bracing and propping; and
- Tree removal (In case of any defective tree or dead tree requiring the removal, the tree owner should follow the requirements stipulated in the lease conditions where applicable.)

#### What would happen if I did not maintain my trees?

If a tree is not well maintained, it will deteriorate and a tree failure may occur. This could result in injury to persons or damage to properties. If this happens, you may have to incur great expense to repair property and to compensate the victims.

#### Information on Tree Management

Information on tree management is available at [www.trees.gov.hk](http://www.trees.gov.hk).

#### Information on Tree Maintenance for private properties

Information on tree maintenance for private properties is available at [www.trees.gov.hk/en/tree\\_care/info\\_tree\\_maintenance\\_pp/index.html](http://www.trees.gov.hk/en/tree_care/info_tree_maintenance_pp/index.html).

#### Enquiry

To enquire about tree management work or report suspected problematic trees, please call 1823 or e-mail ([tellme@1823.gov.hk](mailto:tellme@1823.gov.hk)) or through Mobile Apps (Tell me@1823).



## Pictorial Guide for Tree Maintenance to Reduce Tree Risks 減低樹木風險的樹木護養簡易圖解

Please take immediate action when any of the following situations is identified.  
如樹木有以下狀況，請從速處理。

### 1 General Condition 基本狀況

#### Leaning Tree 傾斜樹木

Leaning tree with horizontal cracks in the upper (tension) side and/or buckling wood or bark on the lower (compression) side.  
傾斜樹木背後的拉緊位置出現橫向裂縫，而在擠壓位置出現樹皮隆起的情況。

Leaning tree (30° to 40°) with soil cracks in the soil surface.  
傾斜樹木 (角度達30至40度) 及背後的土壤出現裂縫

#### RISK OF TREE FAILURE 樹木有倒塌風險

#### Recommendation 建議

Recommend to add support system or may need to remove that tree.  
應考慮加設支撐系統或需考慮移除樹木

### 2 Crown Condition 樹冠狀況

#### Dieback Twigs 樹枝枯死

Dieback twigs on tree crown  
樹冠頂上的樹枝枯死

#### Recommendation 建議

Pruning: 修剪樹枝  
May need to investigate if roots have been damaged or diseased  
需檢查樹根是否受損

### 3 Branch Condition 枝幹狀況

#### Dead Branch 樹枝枯死

Crack/Split 裂縫或裂開

#### Hanger 懸吊斷枝

#### Recommendation 建議

Pruning 適當修剪  
recommended position of final pruning cut 枝條

### 4 Trunk Condition 樹幹狀況

#### V-shaped Grotch with Cracks/Split V型樹枝有裂縫或裂開

The stem is split by one or more cracks  
枝幹沿著裂縫斷開

#### Codominant stems 等勢莖

A weak union with crack(s) and / decay  
接合點出現裂縫或腐爛

#### Recommendation 建議

Recommend to add support system or may need to remove the tree  
建議加設支撐系統或需考慮移除樹木

#### RISK OF TREE FAILURE 樹木有倒塌風險

Greening, Landscapes and Tree Management Section

Development Bureau

#### Wood Decay and Cavity 腐爛/樹洞

Wood decay/cavity at basal area /root flare  
樹幹/或根部上有明顯腐爛或樹洞

Open cavity decay more than 30% of cross-section or open more than 120°  
樹洞腐爛的橫切面多過30%或樹洞開口角度多於120°

#### Recommendation 建議

Recommend to add support system or may need to consider tree removal  
建議加設支撐系統或需考慮移除樹木

#### RISK OF TREE FAILURE 樹木有倒塌風險

### 5 Root Condition 樹根狀況

#### Severely cut/damaged roots 根部被嚴重切割或損害

Recommend to add support system and monitor the stability and health condition of the tree  
應考慮加設支撐系統及監察樹木的穩定情況和樹木健康狀況

#### Recommendation 建議

#### Fungal fruiting bodies 呈現菌絲子實體

More detailed investigation of extent of decay is required  
需要對腐爛狀況作更詳細檢查

#### Recommendation 建議

### ATTENTION 注意



#### DO NOT TOP TREES 切勿把樹木削頂

Topping creates more dangerous trees because: 削頂令樹木變得危險，因為：

- "Sprouts" after topping are weakly attached and are likely to break  
樹木削頂後所長出的水蘗枝接合脆弱，容易折斷
- Topping wounds are prone to insect and disease attack  
削頂的傷口容易受病蟲害侵襲
- Topping cuts invite decay in trees  
削頂的切口使樹木腐爛

#### Note

For guidelines on pruning, please refer to <http://www.devb.gov.hk/greening/en/preservation/guidelines.pdf>.  
請瀏覽以下網址的「修剪樹木的一般指引」：  
<http://www.devb.gov.hk/greening/tc/preservation/guidelines.pdf>

#### Reference

- 參考資料
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  - [3] Lily S.J., "Arborists' Certification Study Guide", International Society of Arboriculture, USA, 2001.
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簡化，圖便及樹木管理

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## 6.7 Conclusion

Greening is not just the work of a certain department or association. It requires the concerted efforts of different stakeholders. For example:

### Role play

Let's assume that your school is having a meeting with various stakeholders to discuss the details of a proposed greening plan.

#### Matters to be discussed:

- Objectives of greening (beautification / environmental protection / insulation / visual purpose...)
- Space available for greening (roofs / walls...)
- Species selected for greening (right tree at the right place, please refer to appendix I on page 120)
- Safety and maintenance concerns (wind direction...)
- Ways to encourage more students to participate in greening activities

### Discussion time

Try to reach a consensus on the above matters in 10 minutes

Roles (in groups of 3-4):







<p><b>You are the student</b></p> <ul style="list-style-type: none"> <li>• What species do you like?</li> <li>• How to organise interesting greening activities?</li> <li>• Who is responsible for taking care of the plants?</li> </ul>	<p><b>You are the principal</b></p> <ul style="list-style-type: none"> <li>• How to encourage students to participate?</li> <li>• Does it affect other school activities, facilities or projects?</li> <li>• How do the species selected complement the goal/motto of the school?</li> <li>• Any extra resources needed for plant maintenance?</li> <li>• How to select the appropriate species?</li> </ul>
<p><b>You are the parent</b></p> <ul style="list-style-type: none"> <li>• Any safety concerns (e.g. prickles on roses or allergies)?</li> <li>• How can parents participate in the greening activities?</li> </ul>	<p><b>You are the government official</b></p> <ul style="list-style-type: none"> <li>• Any government support (e.g. funding, horticulture advice)?</li> <li>• How can greening improve the environment of the whole community?</li> <li>• How to encourage more people to participate?</li> </ul>





## Appendix I

### Species for selection

<p><b>Bauhinia</b> <i>Bauhinia blakeana</i></p>  <p><b>Native species</b></p> <p>Tree, diameter of flower 8-15cm                      Flowering season:                      November to March                      Sweet-scented</p>	<p><b>Chinese Sweet Gum</b> <i>Liquidambar formosana</i></p>  <p><b>Native species</b></p> <p>Deciduous tree as tall as 30m                      Leaves turn yellow in autumn                      and sepia or red when falling                      Sweet-scented when rubbed</p>	<p><b>Michelia</b> <i>Michelia alba</i></p>  <p><b>Exotic species</b></p> <p>Evergreen tree as tall as 20m                      Leaves in oval shape, length 15-30cm                      Flowering season: March to May</p>
<p><b>Azalea</b> <i>Rhododendron simsii</i></p>  <p><b>Native species</b></p> <p>Shrub, diameter of flower 6-10cm                      Flowering season:                      February to April                      Sweet-scented</p>	<p><b>Jacaranda</b> <i>Jacaranda mimosifolia</i></p>  <p><b>Exotic species</b></p> <p>Deciduous tree as tall as 7-12m                      Flower colour: purple                      Flowering season: April to May                      Sweet-scented</p>	<p><b>Red-headed Calliandra</b> <i>Calliandra haematocephala</i></p>  <p><b>Exotic species</b></p> <p>Shrub, diameter of flower 3-6cm                      Flowering season:                      May to October</p>

Source: Leisure and Cultural Services Department / Development Bureau

## Debate

"To encourage corporate participation in greening and improve people's quality of life, the Government should provide private corporations with economic incentives such as tax reduction."

In groups of 3-4, hold a debate on the above topic.

Time: 25 minutes

You are for/against the topic.

	Our motion	Opponents' motion
First speaker 3 minutes		
Second speaker 2 minutes		
Third speaker (if applicable) 2 minutes		
Conclusion 3 minutes		



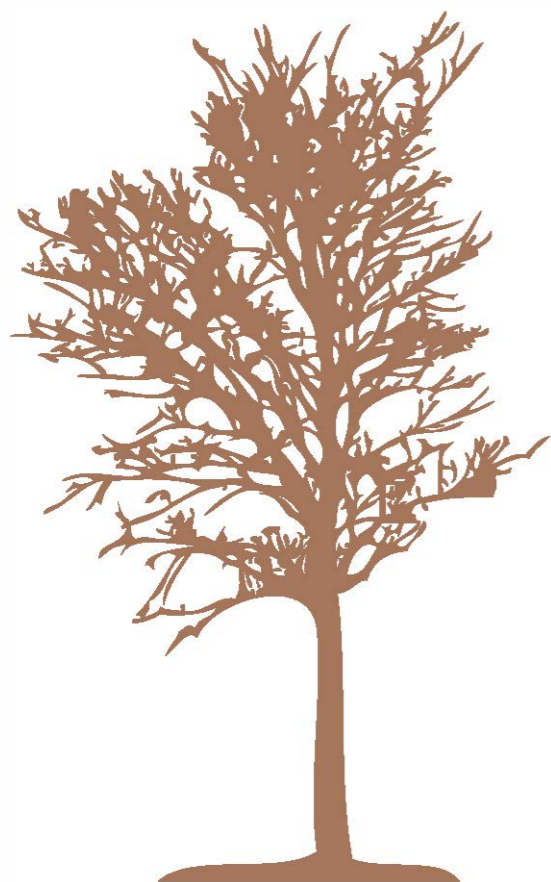


### Further discussion - Anne Frank Tree

In the city centre of Amsterdam, there was a 150 year old horse-chestnut tree. The tree was featured in *The Diary of a Young Girl* written by Anne Frank, a Jewish girl persecuted by the Nazis during World War II. Anne Frank, overlooking the tree from an attic where she and her family were hiding from the Nazis, clung to it as a great mental support to her. Anne Frank eventually died in a concentration camp and people named the tree Anne Frank Tree in memory of her.

Over the past few years, however, the tree had been battling with fungal infection. The Borough Amsterdam Centrum declared in 2007 that the tree had to be removed due to the risk of falling. The local community tried to save the tree by setting up a foundation to fund the prop up works for the trees. The works were finished in 2008.

However, the tree was blown down by high winds during a storm in 2010, and luckily nobody was hurt. The fallen tree was estimated to weigh about 27 tonnes.



With reference to the case study of transplanting the Chinese Banyan at Yuet Wah Street and the case of Anne Frank Tree, discuss the factors to be taken into account when determining whether to remove or preserve a tree.

(Hints: Compare the technological requirements, species and conditions of trees, historical significance and cost-effectiveness in the two cases)



Factor	Reason





Chapter **7**

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**Independent Enquiry Study**





## 7.1 Introduction to Independent Enquiry Study (IES)

Liberal Studies (LS) is a compulsory subject on the syllabus of the Hong Kong Diploma of Secondary Education (HKDSE), in which each student is required to complete the IES and submit a report. It accounts for 20% of a student's total marks.

### Objectives of the IES:

- Setting goals and plans, implementing the plans and solving problems
- Developing a sense of exploration, discovery and independent thinking
- Demonstrating knowledge and understanding of an issue affecting our society, the nation and/or the world
- Understanding how social, national and global changes take place in response to competing demands
- Using analytical skills to investigate a contemporary issue from multiple perspectives
- Acting in an informed way to suggest possible solutions and outcomes
- Understanding how hypotheses and focus questions are used to guide the investigation of an issue
- Reflecting on and evaluating learning progress
- Presenting views and ideas
- Showing self-initiative

Source: Hong Kong Examination and Assessment Authority

Students should decide on their research topics based on their own interests and abilities. They should also carry out researches using appropriate methods. The findings and observations should be expressed in written or non-written form.

### Two stages of the IES:

In 2013

	Assessment item	Weighing
Stage 1	Project proposal	25 %
Stage 2	Final product (report)	75 %

From 2014 onwards

	Assessment item	Weighing
Stage 1	Project proposal	20 %
Stage 2	Final product (report)	80 %

Source: Hong Kong Examination and Assessment Authority

## 7.2 Setting research topics and project proposals

### 7.2.1 What is a good topic?

A good topic should have the following elements:

- A specific target research group (e.g. DSE students, residents in a certain district)
- A well-defined research scope (e.g. people and trees in harmony, how historical and environmental factors affect green policies)
- A clear research direction (e.g. the benefits and challenges of environmental policies)

### 7.2.2 How to start?

It is not always necessary to search among the vast information available on the Internet for a good topic. Students can start in the following directions:

- Personal connections: Research on the jobs or interests of parents/friends/relatives
- Special connections: Research on a celebrity that you know well
- Personal interests: Research on the musical instruments/sports you play
- Knowledge: Topics inspired by certain issues on the LS syllabus

### 7.2.3 Literature review

Purpose of literature review:

- To see if there are similar researches in the past to avoid plagiarism
- To familiarise yourself with the research topics and methods
- To have a better understanding of the target groups
- To analyse concepts related to the research

For DSE students, the major sources of literature review include newspapers, periodicals, statistical data from the Census and Statistics Department, as well as policy and consultation papers of the Government.





## 7.2.4 Examples of topics related to greening, landscape and tree management

Research direction	Related LS module
Greening as a solution to Hong Kong's environmental problems	<b>Module 6</b> How do our living styles and social development affect the environment and the use of energy?
Challenges in maintaining a green environment in Hong Kong	<b>Module 2:</b> Which aspects of the quality of life are considered more important? Which of them are regarded as immediate needs?
Balance between countryside development and conservation	<b>Module 6:</b> What can be done by the public, the various organisations and the Government to sustain development?
Public participation to promote a greener environment	<b>Module 1:</b> What motivates the young people in Hong Kong to participate in community affairs?  <b>Module 2:</b> How can individuals or organisations contribute to the maintenance and improvement of the quality of life?

## 7.2.5 Related government websites

Development Bureau	<a href="http://www.devb.gov.hk">http://www.devb.gov.hk</a>
Tree Management Office	<a href="http://www.trees.gov.hk">http://www.trees.gov.hk</a>
Greening	<a href="http://www.greening.gov.hk">http://www.greening.gov.hk</a>
Tree and Landscape Map	<a href="http://www.greening.gov.hk/tc/people_tree_harmony/tree_landscape_map.html">http://www.greening.gov.hk/tc/people_tree_harmony/tree_landscape_map.html</a>
Greening Master Plan	<a href="http://www.cedd.gov.hk/tc/greening">http://www.cedd.gov.hk/tc/greening</a>
Greening School Handbook	<a href="http://www.lcsd.gov.hk/green/b5/handbookindex.php">http://www.lcsd.gov.hk/green/b5/handbookindex.php</a>
Environment and Conservation Fund	<a href="http://www.ecf.gov.hk/tc/application/index.html">http://www.ecf.gov.hk/tc/application/index.html</a>
Green Volunteer Scheme	<a href="http://www.lcsd.gov.hk/green/b5/greenvolunteer.php">http://www.lcsd.gov.hk/green/b5/greenvolunteer.php</a>

## 7.3 Data collection and research methods

### 7.3.1 Common research methods

#### General methods for DSE students

#### Quantitative research

- Questionnaire survey (e.g. draw up questions on greening awareness)
- On-site sampling experiment (e.g. study the number of trees in different places or areas)

#### Qualitative research

- Interview and focus group (e.g. interview members in the greening-related NGOs)
- On-site observation (e.g. take photos)
- Textual analysis (e.g. study the content of certain magazines)
- Literature review (e.g. trace the history of a certain district)

In general, students should strike a balance and avoid prejudice between first hand information and information copied from other sources.

### 7.3.2 Examples of research methods relevant to greening and environmental protection

Research direction: Vertical greening in schools in Hong Kong

Possible methods:

Quantitative research	
Questionnaire survey	Distribute questionnaires to students
Qualitative research	
Interview and case study	Interview teachers
On-site observation	Take videos or photos of the current situation in schools
Literature review	Learn about other vertical greening examples in Hong Kong





### 7.3.3 Points to note for on-site observations/field trips

In addition to questionnaire surveys, students may also conduct on-site observations or field trips to have a better understanding of the issue. Students should take note of the following:

- On-site observations/field trips may not be suitable for all research topics. Do not do it unless it is necessary
- Specific objectives (e.g. to explore the issues of vertical greening and harmony between people and trees) should be set for on-site observations/field trips
- Students should gather relevant information beforehand, e.g. to familiarise themselves with the Government policies or the current situation in a certain district
- Suitable tools are also useful, such as cameras, recording pens, notebooks etc
- Students should take note of the time and season of the trip, particularly when observing evergreen and deciduous trees
- Some places may require an application before entry. Students should not enter these places illegally
- Students should go in groups wherever possible. Inform your parents and teachers of the trip details

### 7.3.4 Methods for on-site observations/field trips

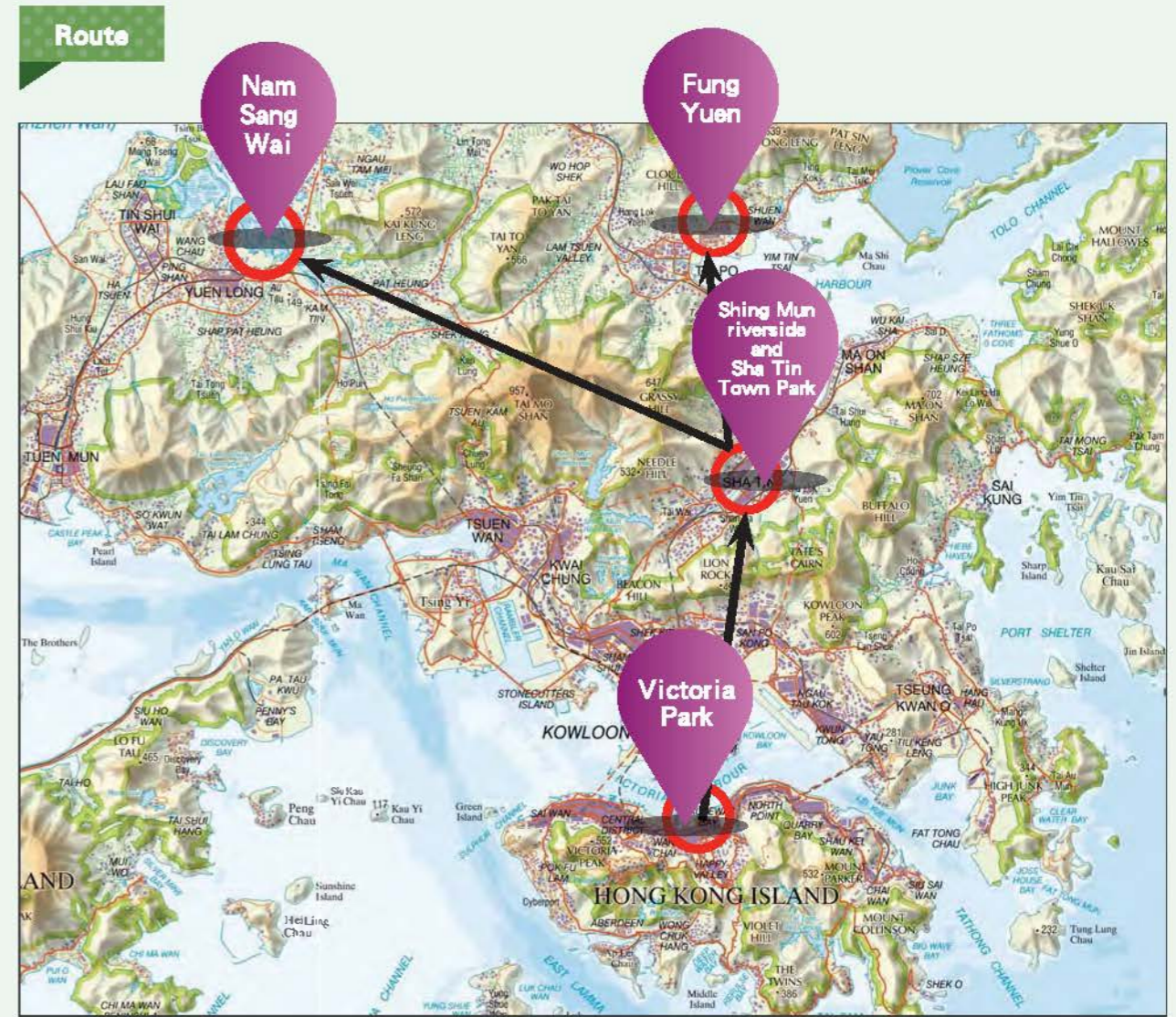
Students can focus on a specific issue, and use time as a variable to show the different aspects of an issue at different time intervals. For example, if students choose a certain park as the research target, they can:

- Find out the number and age of visitors in the park at different time intervals, e.g. in the morning, afternoon and evening
- Carry out the above study on any three days in a month
- Observe the activities by taking photos and doing a headcount
- Conduct focus group interviews: Interview people of different ages and compare the data with those collected at other time intervals



## 7.4 Itinerary 1

Example: How does a green environment improve the quality of life?  
Method: Questionnaire survey, street interview and on-site observation



Source: Lands Department





Half-day / Whole day trip



	Destination	Research focus	Related LS module
First stop: Urban area (1 hour)	Eastern District, e.g. Victoria Park	<ul style="list-style-type: none"> <li>Importance of greening</li> <li>Foreseeable challenges</li> </ul>	<b>Module 2: Hong Kong Today</b> <ul style="list-style-type: none"> <li>Which aspects of the quality of life are considered more important? Which of them are regarded as immediate needs?</li> </ul>
Second stop: New town (1 hour)	Shing Mun riverside and Sha Tin Town Park	<ul style="list-style-type: none"> <li>Relevance of a green environment to the quality of life</li> </ul>	<b>Module 2: Hong Kong Today</b> <ul style="list-style-type: none"> <li>How do Hong Kong residents prioritise the various aspects of the quality of life?</li> </ul>
Third stop: Countryside (2 hours)	Fung Yuen or Nam Sang Wai	<ul style="list-style-type: none"> <li>Conflicts between economic development and conservation</li> <li>Role of the general public</li> </ul>	<b>Module 6: Energy Technology and the Environment</b> <ul style="list-style-type: none"> <li>What can be done by the public, the various organisations and the Government to sustain development?</li> </ul>

**Worksheet for on-site observations / field trips**

**1 Basic information**

Date: \_\_\_\_\_

Time: \_\_\_\_\_

Place: \_\_\_\_\_

Research topic: \_\_\_\_\_

**2 Pre-trip preparation**

Focus of the trip:

Issues to be explored (three in total) :


Related news (four in total) :






**Related concepts (four in total) :**


**Expected findings (three in total) :**


**3 Details of on-site observations/field trips**

**Issue 1 / Observation 1**

Place: \_\_\_\_\_

Time: \_\_\_\_\_

Observation/Description: \_\_\_\_\_

**Photos :**

--	--

**Issue 2 / Observation 2**

Place: \_\_\_\_\_

Time: \_\_\_\_\_

Observation/Description: \_\_\_\_\_

**Photos :**

--	--

**Issue 3 / Observation 3**

Place: \_\_\_\_\_

Time: \_\_\_\_\_

Observation/Description: \_\_\_\_\_

**Photos :**

--	--





**Issue 4 / Observation 4**

Place: \_\_\_\_\_

Time: \_\_\_\_\_

Observation/Description: \_\_\_\_\_

**Photos :**

--	--

**Issue 5 / Observation 5**

Place: \_\_\_\_\_

Time: \_\_\_\_\_

Observation/Description: \_\_\_\_\_

**Photos :**

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Interview **1** (if applicable)

Background information of interviewee: \_\_\_\_\_

Question 1	
Details of discussion	

Question 2	
Details of discussion	

Question 3	
Details of discussion	





Interview **2** (if applicable)

Background information of interviewee: \_\_\_\_\_

Question 1	
Details of discussion	

Question 2	
Details of discussion	

Question 3	
Details of discussion	

**4** Findings of the trip

4.1 What information do you collect from the trip?

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4.2 Does the information collected meet your purposes? Please elaborate.

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4.3 Does the information collected provide answers to the issues under research? Please elaborate.

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4.4 Are there any unexpected findings that are relevant to the issues in question?

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4.5 What are your plans if you want to explore the issue further?  
(Another trip? Literature review? Questionnaire surveys? Interviews?)

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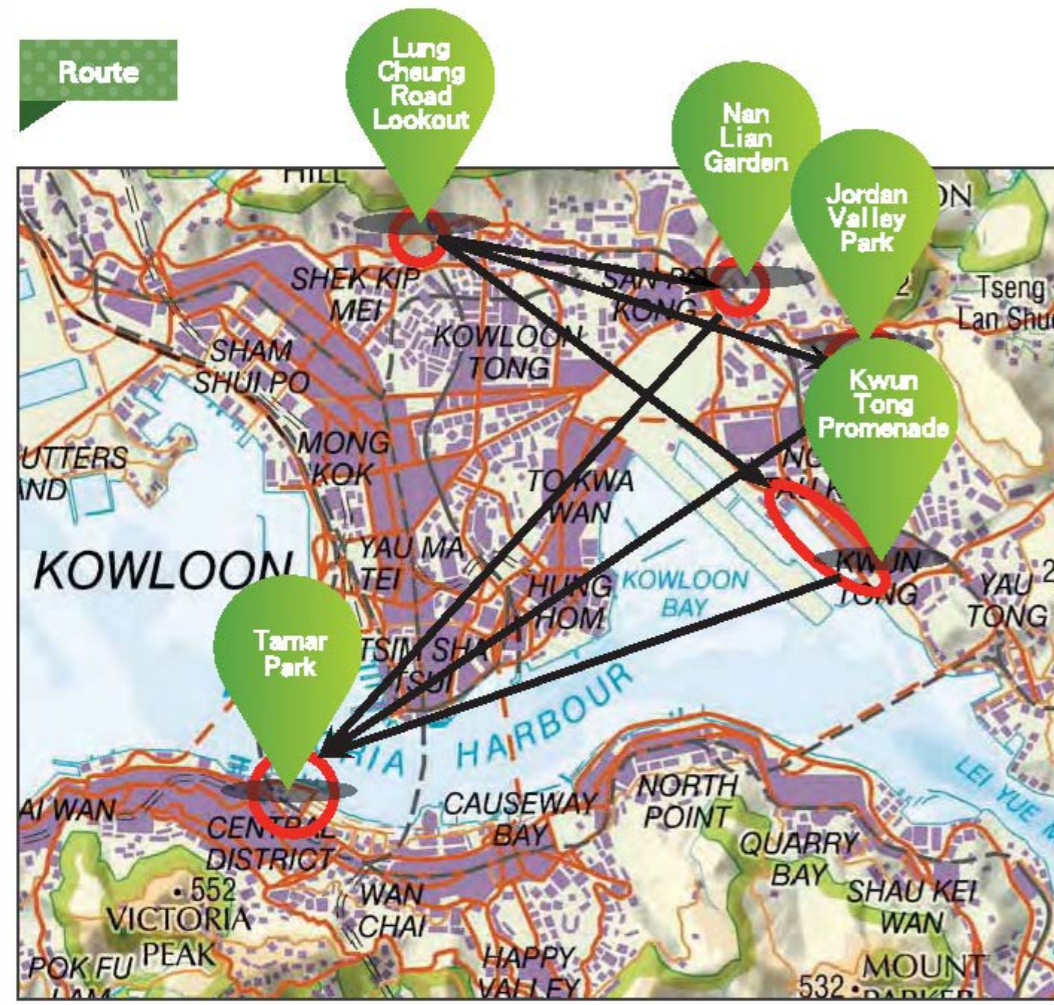
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## 7.5 Itinerary 2

Example: To explore the issue of greening in the urban areas  
Method: Street Interview and on-site observation



Source: Lands Department



### Half-day trip

	Destination	Research focus	Related LS module
First stop: A Bird's-eye view (0.5 hour)	Lung Cheung Road Lookout: To get a general picture of greening in the Kowloon Peninsula	<ul style="list-style-type: none"> <li>Importance of greening</li> </ul>	<b>Module 2: Hong Kong Today</b> <ul style="list-style-type: none"> <li>Which aspects of the quality of life are considered more important? Which of them are regarded as immediate needs?</li> </ul>
Second stop: Urban district (0.5 hour)	Kwun Tong Promenade (Greening in an old district), Jordan Valley Park (Four Season Garden, Bougainvillea Garden) or Nan Lian Garden (Chinese-style garden)	<ul style="list-style-type: none"> <li>Relevance of a green environment to the quality of life</li> </ul>	<b>Module 2: Hong Kong Today</b> <ul style="list-style-type: none"> <li>How do Hong Kong residents prioritise the various aspects of the quality of life?</li> </ul>
Third stop: Building in the urban district (1 hour)	Tamar Park outside the Central Government Offices	<ul style="list-style-type: none"> <li>Effectiveness and possibilities of urban greening</li> <li>Roles of the Government and the public in greening</li> </ul>	<b>Module 6: Energy Technology and the Environment</b> <ul style="list-style-type: none"> <li>What can be done by the public, the various organisations and the Government to sustain development?</li> </ul>

## 7.6 Preparation of the report

The report carries considerable weight in the IES. Students should take note of the following:

- The large amount of information collected may not be all useful. It is very important to select the relevant information for the project
- Categorise the information collected and check if it is consistent with your hypotheses
- Interviews, on-site observations and questionnaire surveys are all complementary methods in research and deal with different aspects of the same issue





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