# 10 LANDSCAPE AND VISUAL IMPACT ASSESSMENT

## 10.1 Introduction and Background

The landscape and visual impact assessment has been carried out on a comparative basis using the information given in Chapter 9 of Volume 1 for the Housing Development. Further assessment on the Cyber Port Development and comparison between the two schemes have been carried out.

This section assesses the likely landscape and visual impacts of the future development and proposes strategic mitigation measures to alleviate the impacts caused. The nature and scale of the project will create a new landscape and visual environment within the proposed Hong Kong Cyber Port development

The proposed development lies on the west coast of Hong Kong Island to the south of Pok Fu Lam and comprises an area of existing flat reclamation bordered to the north, east and south by densely wooded slopes, and some residential development, and to the west by the open waters of the East Lamma Channel between Lamma Island and Hong Kong Island. It is overlooked by a number of residential developments, notably Baguio Villa, Kong Sin Wan Tsuen village, Wah Fu Estate, Pok Fu Lam Gardens and houses along Sassoon Road. These currently have open views over the channel. Development of Hong Kong Cyber Port will affect the local landscape and views from these residential properties.

## 10.2 Methodology

### 10.2.1 Definitions

The methodology for undertaking the landscape and visual impact assessment is in general accordance with Annex 18 of the Technical Memorandum to the Environmental Impact Assessment Ordinance (EIAO). The assessment of impacts is based on the criteria in Annex 10 of the EIAO. The main elements are given below.

The Landscape and Visual Impacts are considered as follows:

- Landscape impact assessment shall access the source and magnitude of developmental effects on the existing landscape elements, character and quality in the context of the site and its environs; and,
- Visual impact assessment shall assess the source and magnitude of effects caused by the proposed development on the existing views, visual amenity, character and quality of the visually sensitive receivers within the context of the site and its environs.

### 10.2.2 Landscape Impacts

The assessment of the potential impacts of a proposed scheme on the existing landscape comprises two distinct sections:

- Baseline survey; and,
- Potential landscape impact assessment.

A baseline survey of the existing landscape and character and quality will be undertaken from site and desk-top surveys. Landscape elements considered include:

- Local topography;
- Woodland extent and type;
- Other vegetation types;
- Built form;
- Patterns of settlement;
- Land use;
- Details of local materials, styles, streetscapes etc.;
- Prominent watercourses; and,
- Cultural and religious identity.

Proposed developments either within the study area or adjacent to it are also considered. The baseline survey will form the basis of the landscape context by describing broadly homogenous units of character. The landscape is rated into low, medium or high depending on not only the quality of elements, present but also their sensitivity to change and local or regional importance. The quality of the landscape is not only related to its visual amenity.

The assessment of the potential landscape impacts of the proposals will result from:

- Identification of the sources of impact, and their magnitude, that would be generated during construction and operation of the scheme; and,
- Identification of the principal landscape impacts, primarily in consideration of the degree of change to the baseline conditions. The impacts are considered systematically in terms of the landscape elements, the site and its context.

The overall landscape impact is a product of the following factors:

- The landscape character and its quality;
- Source, nature and magnitude of potential impacts;
- The degree of change caused by each of the impacts to the existing landscape;
- Tolerance of the landscape to absorb the change;
- Significance of this change in consideration of the local and regional areas and other developments;
- Cumulative effects on the landscape of this and neighbouring proposals; and ,
- Identification of plant species of significant value which should be conserved.

The degree of impact is considered as follows:

| **Adverse / Beneficial Impacts** | | | |
|---|---|---|---|
| Significant adverse/ beneficial impact: where the proposal would cause significant deterioration/ improvement in existing landscape quality | Moderate adverse/ beneficial impact: where the proposal would cause a noticeable deterioration / improvement in existing landscape quality | Slight adverse / Beneficial impact: where the proposal would cause a barely perceptible deterioration in the existing landscape quality | Negligible impact: no discernible change in the existing landscape quality. |

10.2.3 Visual Impacts

The assessment of the potential visual impact of the scheme comprises two distinct parts:

- Baseline survey; and,
- Visual impact assessment.

The baseline survey of all views towards the proposals is undertaken by identifying:

- The visual envelope or visual zone within which the proposed development may be contained either wholly or partially within views. This must also include indirect effects such as offsite construction activities; and,
- The visually sensitive receivers within the visual envelope whose views will be effected by the scheme. The potential receivers are considered as three groups:

  a) views from residences – the most sensitive of receivers due to the high potential of intrusion on the visual amenity and quality of life;
  b) view from workplaces – less sensitive than above due to visual amenity being less important within the work environment, and;
  c) views from public areas – including all areas apart from the above, e.g., public parks, recreation grounds, footpaths, roads, etc. Sensitivity of this group depends on the transitory nature of the receiver, e.g. sitting in a park or travelling on a highway. Also considered is the degree of view or glimpsed views.

The sensitivity of each group is also influenced by its location and direction of view relative to the scheme. Typical viewpoints from within each of the visually sensitive groups are identified and their views described. Both present and future visually sensitive receivers will be considered.

The baseline survey will form the basis of the visual character and quality of the site. The assessment of the potential visual impacts will result from:

- Identification of the sources of visual impact, and their magnitude, that would be generated during construction and operation of the scheme; and,
- Identification of the principal visual impacts primarily in consideration of the degree of change to the baseline conditions.

The impact assessment will relate to the typical viewpoints within the visual receiver group, as identified previously, and their existing and potential views subsequent to the scheme development. The visual impact will result from consideration of the following:

- Character of existing views;
- Quality of existing view;
- Context and location of the visually sensitive receiver;
- Visual receiver group sensitivity;
- Degree of change of existing views;
- Other views available to visual receiver group; and,
- The cumulative effects on views of this and to other neighbouring developments.

The degree of visual impact is rated in a similar fashion to the landscape impact, i.e. substantial, moderate, slight and no change. The impacts may be beneficial or adverse.

### 10.2.4 Mitigation Measures

The identification of the landscape and visual impacts will highlight those sources of conflict requiring landscape design solutions to reduce the impacts, and, if possible, blend the development and associated activities, in with the surrounding landscape. These mitigation measures should take into account factors including:

- Woodland, tree and shrub planting of new or disturbed slopes, amenity strips and areas central reservation and adjacent to any new structures;
- Consideration of the contouring of new slopes in order to blend them within the existing topography;
- Earth mounding and screening, structural or vegetated;
- Highlighting unacceptable impacts and considering alternative scheme proposals;
- Treatment of structural forms;
- Hard landscape, furniture and other landscape ; and,
- Significant landscape elements.

This will result in the formation of landscape mitigation measure proposals which will alleviate the previously identified landscape and visual impacts as far as possible. Strategic mitigation measures will be recommended where a development will result in the formation of new landscape and visual characters.

## 10.3 Review of the Planning and Development Control Framework

The development control context of the proposed Hong Kong Cyber Port is governed by Hong Kong Planning Area No. 10 – Pok Fu Lam Outline Zoning Plan (OZP), Plan No. S/H10/6. The site is primarily zoned as Residential (Classes B and C), together with an area of G/IC towards the northern end (Refer to Figure 10.1)

There are two proposed land use zones adjacent to the site which are of particular relevance to landscape planning. These are the provision of Open Space, for active and passive recreational uses, and Green Belt, to prevent encroachment of urban development on the natural environment. Within the Study Area, the OZP identifies Open Space along the waterfront of the Telegraph Bay Reclamation, adjacent to the proposed Route 7 and to the west of Baguio Villa, and above Waterfall Bay, to the south. Green Belt zones are proposed on the steep slopes above and below Victoria Road and in Telegraph Bay (Kong Sin Wan Tsuen) Valley.

Additional to the above, there are a number of other zoned uses within the vicinity, namely Residential (primarily Class C, such as Baguio Villa, but also including some Class A, such as Wah Fu Estate) development, together with some areas of G/IC zoning, within the surrounding vicinity. Only two small areas of G/IC zoning in the south border the site, while all the residential zones are remote. These land uses are all reviewed as part of this study.

## 10.4 Baseline Study of Existing Landscape and Visual Resources

### 10.4.1 Existing Landscape Resources

This section examines the existing landscape resources of the Study Area.

The context of the Study Area is the western coast of Hong Kong Island between Pok Fu Lam and Wah Fu. It is defined by Victoria Road to the east at about 60 to 70 mPD and is contained between two headlands to the north and south, which rise to about 90 mPD. To the east, the Study Area is bounded by the East Lamma Channel. The majority of the Study Area of flat reclamation located between these two headlands, at a height of approximately 3 mPD. A small section of it comprises an undeveloped platform on top of the southern headland at approximately 90 mPD. To the north, between Victoria Road and the reclamation, are steep slopes which form a narrow valley, namely Telegraph Bay Valley, running north-south. To the south, there is a small bay with waterfall called Pok Po Wan (Waterfall Bay). This waterfall is fed by a stream contained within a small valley. The Study Area context is illustrated on Figure 10.2.

The steep slopes below Victoria Road and Sassoon Road are densely wooded with continuous band of secondary woodland approximately 20 hectares in area. The small valley feeding the waterfall at Waterfall Bay is heavily wooded with trees and shrubs

associated with natural watercourses. Telegraph Bay is also very densely wooded. The reclamation area has regenerated naturally colonised pioneer tree and shrub species. There are areas of scrub and woodland near the steep slopes below Sassoon and Victoria Roads, however this gives way to grass and low-level scrub nearer the coastline.

The large areas of woodland on the slopes within the Study Area are a major landscape resource for the following reasons:

- As a major source of ecological habitat and wildlife corridors;
- Stabilisation of steep slopes; and,
- Potential areas of Fung Shui significance.

The existing landscape context of the site and its surrounding environment are classified into homogenous units of landscape character. These Landscape Character Zones are shown on Figures 10.3 and 10.4 and summarised in Table 10.1. The landscape character zones of the Study Area form the elements of the local visual context and hence their quality also reflects, to a degree, its visual amenity. All the landscape character zones are identified as follows:

- *Primary Green Backdrop*
  Secondary woodland on steep slopes provides an interesting green backdrop to flat reclamation and links visually with the green slopes of Mt Davis, Sai Ko Shan (High West) and Mt Kellet behind when viewed from East Lamma Channel. It acts as a buffer and transition zone between reclamation area and adjacent areas. The quality / sensitivity is considered to be high.

- *Reclamation with Naturally Colonising Woodland and Scrub*
  Flat in profile with naturally regenerated vegetation. Boundary between Primary Green Backdrop and Reclamation with Naturally Colonising Woodland Scrub is the original coastline. It is overlooked by properties in Wah Fu, Baguio Villa and Sassoon Road and has an open engineered visual quality. The quality / sensitivity is considered to be low.

- *Enclosed Valley and Stream*
  Natural watercourse feeding Waterfall Bay are characterised by rocky streams and small waterfalls lined by natural woodland on steep slopes. It provides visual relief adjacent to Wah Fu Estate and is a physical barrier between Wah Fu and Telegraph Bay. The quality / sensitivity is considered to be high.

- *Existing Village*
  Kong Sin Wan Tsuen (Telegraph Bay) Village lies in an enclosed valley with densely wooded slopes. The village is orientated north to south with views out over reclamation with naturally colonising woodlands and scrub. The quality / sensitivity is considered to be high.

- *Waterfall Bay*
  It is a small bay characterised by high rocky cliffs and waterfall and is accessible from Waterfall Bay Park along Wah Fu Road. It provides a visual feature of the waterfall. The quality / sensitivity is considered to be high.

10.4.2 Existing Visual Resources

The existing visual resources within the Study Area are based on the type of landscape character zones. They vary from the visually soft and attractive steep naturally wooded hillsides and valleys, including the Kong Sin Wan Tsuen village, adjacent to the site, to the barren open engineered expanse of the reclamation. The existing visual resources, which are also represented by the existing landscape character zones as mentioned above, and the extent of visual envelope or catchment, are summarised on Figures 10.5 to 10.6.

There is one visual resource not included within the landscape character zones. This is the open view of the East Lamma Channel across to Lamma Island itself.

10.4.3 Existing Landscape and Visual Resources Analysis

This section analyses the landscape and visual resources of the Study Area to identify those areas of significance and those of less importance.

The Study Area comprises an interesting mix of landscape and visual resources within a setting of major landscape features such as Mt Davis, Mt Kellet and Sai Ko Shan (High West), and includes the Pok Fu Lam Country Park and Lung Fu Shan Country Park. The combination of this setting with the local primary green backdrop character zone accords the Study Area a high level of visual amenity and landscape character and this is reflected in the local OZP zoning of the majority of this area as a Green Belt. The presence of an enclosed valley and stream, an existing village of Kong Sin Wan Tsuen and the Waterfall Bay complements and strengthens the intrinsic landscape value of the Study Area. These landscape character zones are considered to be landscape of high value and are very sensitive to change. The reclamation with naturally colonising woodland and scrub is considered to be of low local landscape value and not sensitive to change.

These sensitive landscapes are overlooked by a number of residential properties which take maximum advantage of the views over the Study Area and East Lamma Channel. The main properties affected are Baguio Villa, Wah Fu Estate, and residences along Sassoon Road and Kong Sin Wan Tsuen. Of these, views from Baguio Villa and Kong Sin Wan Tsuen are considered sensitive to change as they are in proximity to the reclamation and low in elevation, therefore development in front of these locations would be highly disruptive. Wah Fu Estate and Pok Fu Lam Gardens are also considered sensitive to change due to the large number of residential units within the developments

The above landscape character zones form the basis and features of the views and their character for the visually sensitive receivers (VSRs). These VSRs (which are divided into

two groups namely the Primary Visually Sensitive Receivers and Secondary Visually Sensitive Receivers) and together with their typical views and an assessment of their quality, are outlined below, and summarised in Table 10.2.

Primary Visually Sensitive Receivers

- *Baguio Villa (VSR1)*

This development overlooks the existing reclamation site (reclamation with naturally colonising woodland scrub) towards the open water of the East Lamma Channel. They are high-rise residential properties with high sensitivity. The quality / sensitivity is considered to be high.

- *Kong Sin Wan Tsuen (VSR2)*

Their existing views are enclosed by the steep wooded valley sides. However the village has important open views over the reclamation (reclamation with naturally colonising woodland scrub) towards East Lamma Channel. They are (predominantly village houses with some buildings of historical interest) with limited open views. The quality / sensitivity is considered to be high.

- *Aegean Terrace (VSR3)*

They have elevated views from the headland to the north over the site and south towards East Lamma Channel and Lamma Island. The quality / sensitivity is considered to be high

- *Ellenbud Court (VSR4)*

They have elevated views from the headland to the north. Views are primarily west over the channel but those towards the site are partially screened by Aegean Terrace reducing their sensitivity. The quality / sensitivity is considered to be moderate.

- *Crane Court (VSR5)*

They have elevated views from the headland to the north. Views are primarily south-west over the Lamma Channel but those towards the site are partially screened by Aegean Terrace reducing their sensitivity. The quality / sensitivity is considered to be moderate.

- *Wah Fu Estate (VSR6)*

They have open views over the southern Waterfall Bay headland with development platform, the reclamation site (reclamation with naturally colonising woodland scrub)towards the East Lamma Channel. They are high-rise residential with high sensitivity. The quality / sensitivity is considered to be high.

- *Pok Fu Lam Gardens & Chi Fu Fa Yuen (VSR7)*

Western blocks of Pok Fu Lam Gardens are having open views over the wooded hillsides (primary green backdrop) adjacent to Victoria Road, beyond which is the reclamation (reclamation with naturally colonising woodland scrub) and the East Lamma Channel. They are high-rise residential with sensitivity reduced due to distance. The quality / sensitivity is considered to be moderate.

- *Waterfall Bay Park (VSR8)*

They have open views toward the Waterfall Bay headland and the natural Waterfall down the high rocky cliffs. The quality / sensitivity is considered to be high due to its close proximity to the proposed development.

- *East Lamma Channel (VSR9)*

People viewing from the sea have remote views with mixed character of high-rise housing estates with a natural wooded hillside setting. Low lying reclamation indistinct from lower levels, reduced sensitivity due to distance and availability of alternative views. The quality / sensitivity is considered to be moderate to high.

Secondary Visually Sensitive Receivers

- *Vocational Training Centre (VSR10)*

A number of open views are possible over the wooded hillsides (primary green backdrop) adjacent to Victoria Road, beyond which is the reclamation (reclamation with naturally colonising woodland scrub) and the East Lamma Channel. It is a medium-rise institutional facility with sensitivity reduced due to distance and non-residential status. The quality / sensitivity is considered to be low.

- *Sassoon Road Residences (VSR11)*

They have open views from Aegean Terrace area over the reclamation (reclamation with naturally colonising woodland scrub) south along the East Lamma Channel to Lamma Island. Their visual sensitivity to the development is reduced due to alternative views west, distance and elevation in relation to reclamation. The quality / sensitivity is considered to be moderate.

- *Victoria Road (VSR12)*

Many pedestrian and motorists along Victoria Road have existing views, partially screened due to roadside vegetation, down the wooded hillside (primary green backdrop), over the reclamation (reclamation with naturally colonising woodland scrub) to the East Lamma Channel. Visual sensitivity is reduced due to transitory nature, distance and partial screening. The quality / sensitivity is considered moderate.

## 10.5 Landscape and Visual Impact Assessment

### 10.5.1 Introduction

This section considers key landscape and visual impacts due to the development of the proposed scheme. This scheme has been designed to avoid as many of the major potential impacts as possible.

### 10.5.2 Approach to Development Layout

The following development approach has been adopted for the proposed layout of the Cyber Port. Every effort has been made in the positioning and massing of buildings to minimise potential impacts from both the visual and landscape aspects.

Lower buildings are positioned at the northern portion of the site to allow a generous unobstructed view corridor from Baguio Villa and Kong Sin Wan Village area. Individual houses and low rise residential buildings are located in the central area to extend and establish the low density 'science park' feel to the core of the development.

The higher residential towers are located towards the southern part of the site and the headland area and step down from the sea shore towards the centre of the site. This arrangement will create a dynamic composition which purposely detaches the building form, from the natural landscape resulting a strong compositional statement. It will also allow better view corridors for the adjacent developments of Pok Fu Lam Gardens and Chi Fu Fa Yuen. Lower towers are located on the more elevated platforms of the headland in order for them to be less imposing to the Southern Access Road.

The proposed development is set against the green backdrop of Pok Fu Lam Country Park. The various landscaped areas adjacent to and within the study area have been taken into account and are considered as integral to developing a strong landscape concept which will minimise landscape and visual impacts.

The scheme will cause a substantial change in the existing landscape and visual character of the site from a barren, open, scrubby reclamation into a mixed use development. The existing site of primarily open reclamation contrasts distinctly with the high quality surrounding wooded hillsides with its existing residential development.

### 10.5.3 Landscape Impact Assessment

The reclamation is of low landscape quality contrasting with a surrounding area of high quality. This factor was incorporated into the design of the master layout and has, therefore, avoided much of the potential impact which could arise from such a development. The development is primarily contained within the reclamation and southern headland. The feeder road which surrounds the site on the landward side causes direct impact to the hillside through conflict with the local topography and loss of woodland

The site will change from an open expanse of reclaimed land to a low to medium density mixed use development set in extensive landscaped open space containing passive and active areas for the community. This will result in a positive change from the existing landscape character fulfilling its intended use. (Refer to Table 10.1)

All the possible landscape impacts to different character zones are identified as follows:

- *Primary green backdrop*

There will be loss of woodland and major earthworks to area in southern headland due to the Southern Access Road. The degree of impact is considered to be significant adverse.

- *Reclamation with naturally colonising woodland scrub*

There will be a change of character from an unused barren reclamation site to a planned mixed use development. The degree of impact is considered to be significant beneficial.

- *Enclosed valley and stream*

Substantial loss of woodland and extensive earthworks to local topography will be expected due to southern access road. The degree of impact is considered to be significant adverse.

- *Existing Village*

The introduction of two new schools, a number of 25 storey residential blocks, and their associated access roads to the existing Kong Sin Wan Tsuen Village means that the village will be demolished and the landscape character, historical value / cultural heritage will be changed from a village type setting to an urban residential and institutional environment. The degree of impact is considered to be significant adverse.

- *Waterfall Bay*

The additional Southern Access Road and the proposed Route 7 together with the residential buildings on the southern side of the headland will encroach on the existing natural waterfall landscape and the area behind the waterfall, which may be developed as a district open space. The landscape impact in the future will be significant adverse. At the detailed design stage, considerations should be given to provide mitigation measures or planting/replanting scheme to minimise the visual and landscape impacts due to the proposed Southern Access Road.

To summarise, the scheme will cause significant adverse landscape impacts. The source of the main impact is the Southern Access Road which, although causing significant impact to the surrounding wooded hillside, will be localised. The construction of Route 7 within this vicinity will cause effects that are far more significant but fall outside the scope of this study. With regard to the proposed schools and residential towers on the Kong Sin Wan Tsuen Village area, their development will be subject to AMO findings. (See Cultural and Heritage Impact Assessment Section 11.)

### 10.5.4 Visual Impact Assessment

The main impacts will be visual rather than landscape due to the high number and sensitivity of the surrounding residential VSRs. The primary sources of the impacts will be the screening of views westwards over the East Lamma Channel from Baguio Villa to Kong Sin Wan Tsuen, together with obstruction of views from Aegean Terrace and Wah Fu. The development has a series of features intrinsically designed into it in order to avoid the unacceptable visual impact of totally screening all views from the existing residential apartments. Additionally, all of the major view corridors have been retained, such as that

from Kong Sin Wan Tsuen area. However, on a development of this scope, scale and location, some visual impacts are inevitable. A summary of these visual impacts to the VSRs is given in Table 10.2 and details are identified as follows:

Primary Visually Sensitive Receivers

- *Baguio Villa (VSR1)*
  There will be screening of views at lower levels and a change of character of views from open reclamation to mixed use in character. Upper level views will remain open. Degree of impact is considered to be high for lower levels.

- *Kong Sin Wan Tsuen Area (VSR2)*
  There will be screening of views at lower levels and a change of character of views from open reclamation to mixed use in character. Upper level views will remain open. Degree of impact is considered to be high for lower levels

- *Aegean Terrace (VSR3)*
  There will be an introduction of new buildings as major elements in views. The degree of impact is considered to be high.

- *Ellenbud Court (VSR4)*
  There will not be any introduction of new buildings in their existing views. The degree of impact is considered to be minimal.

- *Crane Court (VSR5)*
  There will not be any introduction of new buildings in their existing views. The degree of impact is considered to be minimal.

- *Wah Fu Estate (VSR6)*
  West facing blocks will have views screened by buildings on the southern headland. The degree of impact is considered to be high.

- *Pok Fu Lam Gardens & Chi Fu Fa Yuen (VSR7)*
  They are elevated and remote from the site and their views will be partially screened in one direction only. Alternative directions of view are possible. The degree of impact is considered to be medium.

- *Waterfall Bay Park (VSR8)*
  There will be an introduction of new buildings and a new Southern Access Road as major elements in views. Visual character will be changed due to the visual intrusion of the proposed structures to the existing natural landscape setting. The degree of impact is considered to be high.

- *East Lamma Channel (VSR9)*
  Existing views are remote and characterised by the mix of residential with woodland setting. Alternative views exist. The degree of impact is considered to be moderate to high (Refer to Figure 10.7 and 10.8).

Secondary Visually Sensitive Receivers

- *Vocational Training Centre (VSR10)*
  Its elevated location allows open views to be maintained, although downwards they will be overlooking the site. The degree of impact is considered to be low.

- *Sassoon Road (VSR11)*
  Several of the southern views will be partially screened. Alternative views will exist to the east. The degree of impact is considered to be medium.

- *Victoria Road (VSR12)*
  Existing views are partially screened. This together with its elevation, and transitory nature reduce impact. The degree of impact is considered to be low (Refer to Figure 10.9).

The visual impact assessment demonstrates that the major impacts caused are incurred by the short distance viewers concentrated to the north-east, east, and south-east of the site.

10.5.5 Noise Barriers

Southern Access Road
A 5.5 m high with 3.5 m cantilever barrier will be located on the western side of the road and a 5.5 m high with 2.5 m cantilever barrier will be located on the internal radius of the road as it descends to Road D1. Pok Fu Lam Gardens, Chi Fu Fa Yuen and Wah Fu VSRs will be subject to low visual impact in this regard due to their distance

a) Road D1
Two 5.5 m high with 2.5 m cantilever barriers will be located on the west side of the road. Pok Fu Lam Gardens and Chi Fu Fa Yuen VSRs will be subject to a low visual impact due to their elevated position and remote distance.

b) Road D2
There will be a 3 m and 4.5 m high (for depressed Route 7 or 5m for at grade Route 7) barrier located on the southern side of the road. Due to its direction and distance from the nearest VSRs the visual impact will be low.

c) Route 7
Noise barriers ranging in height from 0.5 m to 5.5 m and some with a 3.5 m cantilever will be located on the eastern side and the central divider of Route 7. Again due to their distance

from the various VSRs the visual impact will be low. Most of the barriers will be screened by the new development

d) In summary, the visual impact of the main components of the proposed development will dominate over the impact caused by the noise barriers to the VSRs.

10.5.6 Sewage Treatment Works

The sewage treatment works is proposed as a single storey concrete building enclosing the treatment facilities. The low level of the building, and the fact that the activities are covered, results in no significant additional impacts to existing VSRs on the surrounding hillsides. However it is proposed to have some landscape treatment on and around these utility structures to soften their appearance.

## 10.6 Comparison of the Housing Development and the Cyber Port Development

10.6.1 General

Although there are unavoidable adverse landscape and visual impacts due to the development of Cyber Port, there is a difference in degree of impacts in terms of their magnitude when compared with the landscape and visual impacts arising out of the Housing Development which will be identified as follows:

10.6.2 Comparison of Landscape Impacts

Possible landscape impacts due to the Housing Development and the Cyber Port Development are compared with reference to the different landscape character zones identified

- *Primary green backdrop*

There will be loss of woodland and major earthworks to area in southern headland of similar extent due to the construction of Southern Access Road in both the Housing Development and the Cyber Port Development. The degree of impact is considered to be similarly significant adverse

- *Reclamation with naturally colonising woodland scrub*

There will be a dynamic change in the landscape character from an unused barren reclamation to a high technology science park type of development. This will provide a quality of landscape environment for those who work and live in the area not found in the other urban centres. This is in contrast to the conforming scheme which is purely residential in nature. There will be a variety of use of open space due to the mixed use nature of the development which will result in a much more interesting scheme. The degree of impact due to the Cyber Port Development is therefore considered significant beneficial.

- *Enclosed valley and stream*

Substantial loss of woodland and extensive earthworks to local topography will be expected of a similar extent due to the same location of the Southern Access Road proposed by both the Housing Development and Cyber Port Development. The degree of impact is considered to be similarly significant adverse.

- *Existing Village*

Since there is no construction proposed to Kong Sin Wan Tsuen under the Housing Development its existing landscape character can be preserved. However, an introduction of two new schools and a number of 25 storey residential blocks to the village area in the Cyber Port Development will admittedly have a significantly adverse impact to its existing character.

- *Waterfall Bay*

Waterfall Bay would be affected in a similar manner by the road and residential developments of both the Housing Development and the Cyber Port Development. Therefore, the landscape impact on this natural environment will be similarly significant adverse.

10.6.3 Comparison of Visual Impacts

Visual Impacts caused by both 'Housing' and 'Cyber Port' Schemes can be compared on the same basis with reference to their visual impacts to the different VSRs identified in the Study Area as follows:

Primary Visually Sensitive Receivers

- *Baguio Villa (VSR1)*

There will be screening of views at lower levels and a change of visual character for development of either the Housing Development or the Cyber Port Development. However there are visual corridors between the three commercial buildings (average 12 storeys) in front of Baguio Villa, which allow views towards Telegraph Bay in the Cyber Port Development. The impact of which is further reduced by having houses in front of the three commercial buildings, which also allows Baguio Villa VSR to have views towards the landscape open space in between houses and between the houses and the commercial building and more open view to the sea, instead of having all 12-storey high residential buildings in front of Baguio Villa as a unit of visual blockage to the sea according to the Housing Development.

Although the visual impact to VSR1 caused by the Cyber Port Development is high due to the high visual sensitivity of the area, the impact will be less significant when compared to the Housing Development

- *Kong Sin Wan Tsuen (VSR2)*

There is a visual corridor created for viewing towards East Lamma Channel from Kong Sin Wan Tsuen, based on both the Housing Development and the Cyber Port Development. However, views through the visual corridor created in the northern part of the site in the Housing Development is framed by two high-rise residential building of 36-storey high while the visual corridor of VSR2 shown in the Cyber Port Development towards East Lamma Channel is created by a 13-storey high commercial building and a 10-storey high residential building, making the views less restricted

This less-restricted visual corridor for Kong Sin Wan Tsuen VSR, together with lesser visual intrusion due to building height in the northern part of the Cyber Port Development, reduces the visual impact when compared with the Housing Development.
It is recognised that the group of building (Kong Sin Wan Village) to which this VSR refers will be redeveloped under the Cyber Port Development however the above comments will still apply to this location.

- *Aegean Terrace (VSR3)*

There will be visual intrusion caused by the introduction of new buildings in views of Aegean Terrace VSR due to either the Housing Development or the Cyber Port Development, but the Cyber Mall in a special architectural design makes a higher visual quality to the VSR when compared to the buildings in the GIC zone of the Housing Development

- *Ellenbud Court (VSR4)*

There will not be any introduction of new structure / buildings in their existing view, except the proposed Route 7, due to both Schemes. Therefore, the degree of visual impact will be the same

- *Crane Court (VSR5)*

There will not be any introduction of new structure / building in their existing view, except the proposed Route 7, due to both Schemes. Therefore, the degree of visual impact will be the same.

- *Wah Fu Estate (VSR6)*

West facing blocks of Wah Fu Estate VSR will have views screened by buildings on the southern headland due to either the Housing Development or the Cyber Port Development. The degree of visual impact / intrusion will be high.

- *Pok Fu Lam Gardens & Chi Fu Fa Yuen (VSR7)*

Due to their elevation of remoteness from the site and the partial screening of view in only one direction, the degree of visual impact due to either scheme will be moderate.

- *Waterfall Bay Park (VSR8)*

There will be visual intrusion to the existing views resulted from the new buildings and an access road on the Waterfall Bay headland no matter which development scheme will take place, although the height of buildings on the headland will be higher in the Cyber Port

Development which has been explained already under Section 10.5.2. The degree of visual impact due to either scheme will be similarly high.

- *East Lamma Channel (VSR9)*

Existing views are remote and characterised by the mix of residential with woodland setting and either scheme will change the natural coastline to an area of an urban character. However, when comparing the two schemes as a whole with reference to the photomontage images of Figure 10.10 and 10.11, the height of building elements in the Cyber Port Development is visually lower than the one in the Housing Development, which means a greater exposure of the natural woodland setting can be viewed from the East Lamma Channel. The visual impact is moderate to high.

Secondary Visually Sensitive Receivers

- *Vocational Training Centre (VSR10)*

Similar to Pok Fu Lam Gardens VSR, its elevation and remoteness allows open views to be maintained, although they will still be overlooking the site. The degree of visual impact due to either scheme will be similarly low

- *Sassoon Road (VSR11)*

Several of southern views will be partially screened by the development as a whole, no matter which scheme is launched, and therefore the degree of impact will be similar by moderate adverse

- *Victoria Road (VSR12)*

Existing views through the natural valleys towards the sea will be partially screened and the visual character will be changed from a natural setting to an urban setting no matter which development scheme will take place.

### 10.6.4 Conclusion

Although there is a significantly adverse landscape impact to the Kong Sin Wan Village resulted from the demolition of the village due to the introduction of 2 schools, a number of residential blocks and their associated access roads proposed in the Cyber Port Development when compared to the Housing Development, the significantly beneficial landscape impact resulted from the Cyber Port Development to the reclaimed area will out-weigh the impact to the village area as a whole in term of the extent of area being affected.
The nature of visual impact to each VSR due to the two schemes is very much the same, however, some minor reduction of visual obstruction or slight improvement of visual quality to VSR1, VSR2, VSR3, VSR9 and VSR12 resulted from the Cyber Port Development will bring along a betterment to the development as a whole.

## 10.7 Mitigation Measures and Master Landscape Plan

### 10.7.1 Mitigation

The impact assessment has identified the impacts created by the proposed development. Mitigation measures to impacts, particularly visual ones, have been designed out of the scheme where possible within the context of the planning requirements, populations, GFA and the development brief. However, for any such development of this scale, impacts are inevitable; these are described in the impact analysis.

There are four factors which are fundamental to the type of mitigation proposed. These are:

- The high-rise nature of part of the proposed development limits the opportunity for direct mitigation measures, such as screen tree planting particularly as many of those visually affected are elevated;
- The proposed development has been designed incorporating a number of impact minimisation measures, such as the retention of view corridors;
- The development will change the existing landscape and visual context of the area, creating a totally new character for the area, from one of reclamation to a low to mid-rise commercial and residential centre;
- The development layout has been considered to provide a basis for a quality urban design through the block arrangements creating an interesting spatial arrangement and hierarchy of space. Spatial links have been provided along the boundary to avoid excessive demarcation between the development and surrounding areas.

The mitigation measures proposed, therefore, are strategic measures that will complement the urban design layout and establish a new landscape character and quality. In this respect, these strategic mitigation measures aim to exploit the hierarchy, and visual and spatial linkages with the surrounding environment.

- Generally, the major impacts are the loss of woodland in the various affected areas. For these areas the retention of existing trees and vegetation should be carried out whenever possible. Dense tree and shrub planting for any disturbed slopes should tie in with the existing hillside to create a landscape buffer and visual amenity.

- The Southern Access Road has a significant impact to the character of the surrounding environment. The detail design of this road should pay due respect to the waterfall area as a natural setting within the environment. The design of the roads supporting structure should as far as possible avoid this area. Where columns do impact on this area their placement, design and treatment should be carefully considered.

- Any buildings which may be identified as of historical importance will be considered for retention in situ or for careful dismantling for reconstruction elsewhere.

- It is likely that the pill box at Waterfall Bay would be retained. On the other hand, any buildings which meets the above criteria in Kong Sin Wan Tsuen may be considered for removal and rebuilding elsewhere, subject to AMO final screening results

- Any construction of road infrastructure and associated noise barriers should be designed with consideration of materials and finishes to created elements which are integrated with the new townscape and associated treatments

- The open space areas within the Cyber Port Development should be carefully designed to compliment the development itself as well as the surrounding environment.

- Screen planting of features such as noise barriers in order to ameliorate their landscape and visual impacts

- Compensatory planting proposal should comply with the recommendations in Section 9 and native species will be preferred to re-establish the disturbed woodland.

- Well-screen the site with hoarding during construction phase.

- Conserve topsoil of disturbed area during operation phase if applicable.

10.7.2 Master Landscape Plan

The Master Layout Plan incorporates a number of design principles within the landscape framework which have been described above. These principles have avoided many of the potential visual impacts to create a layout which responds to both the development brief and the surrounding sensitive receivers. It also forms the basis for the Master Landscape Plan which aims to provide a quality setting for the development and future residents, catering for their recreational, amenity and access needs, as well as providing green corridors and structure landscape along roads.

The landscape design responds to this layout and creates a series of free spaces between the buildings, reinforced and defined by tree and shrub planting, and connected by the Northern and Southern Access Road and their distributor roads within the development. These spaces will be designated as open spaces as highlighted in Figure 10.13 and various facilities will be provided. The Master Landscape Plan (Figure 10.14) comprises a series of elements that respond to the future requirements of the users, namely

- *Public Recreation Open Space*

Public Open Space within the development consists of the promenade designated to the seaward side of Route 7 and the open space on the podium level of the Cyber Mall and the roof garden of Sewage Treatment Plant (STP) and (CEPT) to the south of the Northern Access Road proposed.

There are both active and passive recreation facilities provided in the promenade open space for the access of the public. Feature landscaped gardens and sitting out areas will be located adjacent to the Route 7 portion while ball courts and children's play area will be proposed on the reclaimed portion of Route 7 embankment.

A plaza of a high-tech design, entrance landscape, seating area, water feature, etc. will be located on the podium level of the Cyber Mall which provides passive recreation activities to the public.

A roof garden will be located on the roof of Sewage Treatment Plant (STP) and (CEPT) where ornamental planting will provide a pleasant environment within the seating area on the roof.

These public open spaces will be well-connected within the Cyber Port development and will reserve opportunities to link up with the adjacent recreation area in Sandy Bay and the proposed Waterfall Bay Park in Wah Fu, creating an open space system within the district.

Funding of the construction of these public open spaces by the future Cyber Port Development Authority during the implementation stage is to be agreed. Management and maintenance authority will probably be the relevant government department such as Urban Services Department subject to further confirmation. Adequate access will be provided to these public open spaces such as the roof garden on Sewage Treatment Plant (STP) and (CEPT) for future maintenance.

- *Private Recreation Open Space*

Private Recreation Open Spaces are those open spaces designated in between the residential or commercial buildings. Feature landscape together with active and passive recreation facilities will be designed to a high quality. Active recreation facilities such as ball courts, swimming pool and play areas will be proposed together with feature landscape planting within the whole development in the detail design stage. Lookout points will be proposed at critical locations to capture the views towards the Waterfall Bay and East Lamma Channel.

The funding in implementation of the private recreation open spaces construction and the management and maintenance of these open spaces in future by the future Cyber Port Development Authority is to be agreed.

- *Green Open Space - Amenity Areas*

Amenity areas are landscaped or natural areas too small or inaccessible for recreational use, but providing visual relief from buildings and roads. They will include inaccessible roadside areas and slopes within the development. The amenity landscape will form an integral part of the landscape framework on this site and contribute to the upgrading of the landscape within the development. Shade trees should be planted along the roads for shade and to create a green corridor through the development. The funding for the implementation, management and maintenance is to be agreed.

- *Green Open Space - Green Belt*

The existing green belt designated under the Outline Zoning Plan (OZP), Plan No. S/H10/6 within the Study Area will remain unchanged in the proposed Cyber Port Development to

define the limits of urban development area by conserving its landscape character as a green buffer within the Landscape Master Plan.

- *Roadside Landscape Design*

Tree and shrub planting is proposed in the amenity strips along both sides of all roads. This will create well defined green corridors, softening the their visual harshness. The use of large shade trees will provide a comfortable walking environment. These green corridors will also form a landscape structure to the development. Funding for its implementation, as well as manage and maintain this roadside landscape is to be agreed.

- *Screen and Buffer Area*

To partially mitigate several of the impacts of Route 7, a wide landscape buffer within the private open space is proposed between the road and the houses of the Cyber Port development. This area will comprise of dense tree and shrub planting with a footpath running through. It will also act as a visual buffer and amenity for people who live close to the Route 7. Funding for its implementation, as well as manage and maintain this area is to be agreed.

- *Pedestrian Access*

Pedestrian links throughout the development are critical to provide free and easy access to all commercial and residential building / facilities within the Cyber Port Development. Pedestrian access will primarily follow the road network.

Pedestrian circulation throughout the open spaces is also very important. Pedestrian links between public open space, between private open space, and between public and private open space are proposed to be well-designed and landscape to a high quality.

Pedestrian links are also important to integrate the Cyber Port Development with the surrounding areas. Pedestrian access will also follow the road network and will link to the surrounding areas such as Victoria Road.

- *Cycle Track*

An internal cycle track is proposed through the development to provide active recreational opportunities in open space areas.

- *Noise Barrier*

The barriers should be designed with consideration of their materials and finishes to create elements which are integrated with the new townscape and associated landscape treatment.

## 10.8 Summary

The landscape and visual impact assessments describe a number of impacts likely to occur. The major ones are the loss of local woodland at the base of the existing surrounding hill and the visual impacts to the residents in close proximity to the site.

The development will create a new landscape and visual character to the area. The landscape master plan aims to complement the urban layout and arrangement of the blocks and create a quality urban and landscape design.

We conclude that the landscape and visual impact caused by the proposed Cyber Port Development will be considered as acceptable with mitigation measures should there be some adverse effects which can be eliminated, reduced or offset to an extent by specific measures proposed under our mitigation measures section.

## Table 10.1 Summary of Existing Landscape Character Zones and Landscape Impact Assessment

| Existing Landscape Character Zones | Quality / Sensitivity | Source of Impact due to the Development | Degree of Impact |
|---|---|---|---|
| | | | |
| *Primary Green Backdrop*<br><br>Secondary woodland on steep slopes provides an interesting green backdrop to flat reclamation and links visually with the green slopes of Mt Davis, Sai Ko Shan (High West) and Mt Kellet behind when viewed from East Lamma Channel. Acts as a buffer and transition zone between reclamation area and adjacent areas | High | Loss of woodland and major earthworks to area in southern headland due to feeder road. | Significant Adverse |
| *Reclamation with Naturally Colonising Woodland and Scrub*<br><br>Flat in profile with naturally regenerated vegetation. Boundary between the primary green backdrop and this zone is the original coastline. Overlooked by properties in Wah Fu, Baguio Villas and Sassoon Road and has an open engineered visual quality. | Low | Impact of change of character from an unused barren reclamation site to a mixed use area. | Significant Beneficial |
| *Enclosed Valley and Stream*<br><br>Natural watercourse feeding Waterfall Bay are characterised by rocky streams and small waterfalls lined by natural woodland on steep slopes. Provides visual relief adjacent to Wah Fu Estate and is a physical barrier between Wah Fu and Telegraph Bay. | High | Substantial loss of woodland and extensive earthworks to local topography due to southern access road. | Significant Adverse |
| *Existing Village*<br><br>Kong Sin Wan Tsuen (Telegraph Bay) Village lies in an enclosed valley with densely wooded slopes. Village orientated north to south with views out over the reclamation. | High | Demolition of the village and the construction of 2 schools, a number of mid rise residential blocks of 25-storey high, and their associated access road in the Kong Sin Wan Tsuen Village. | Significant Adverse |
| *Waterfall Bay*<br><br>A small bay characterised by high rocky cliffs and waterfall.<br>Accessible from Waterfall Bay Park along Wah Fu Road. Provides a visual feature of the waterfall. | High | Impact from Southern Access Road and Route 7. | Significant Adverse |

## Table 10.2 Summary of Existing Visual Character and Visual Impact Assessment

| VSRs | Existing Visual Character | Quality / Sensitivity | Impact due to the Development | Degree of Impact |
|---|---|---|---|---|
| Primary VSRs | | | | |
| *Baguio Villa (VSR1)* | Overlook the existing reclamation site towards the open water of the East Lamma Channel. High-rise residential properties with high sensitivity. | High | Screening of views at lower levels. Change of character of views from open reclamation to commercial and residential. Upper level views remain open. | Moderate Adverse |
| *Kong Sin Wan Tsuen (VSR2)* | Many views enclosed by the steep wooded valley sides. However the village has important open views over the reclamation towards East Lamma Channel.<br>Village houses with limited open views. | High | Narrowing of visual corridor towards East Lamma Channel and introduction of low-rise to mid-rise buildings as major elements in views. | Significant Adverse |
| *Aegean Terrace (VSR3)* | Elevated views from the headland to the north over the site and south towards East Lamma Channel and Lamma Island. | High | Introduction of new buildings as major elements in views. | Significant Adverse |
| *Ellenbud Court (VSR4)* | Elevated views from the headland to the north. Views are primarily west over the channel but those towards the site are partially screened by Aegean Terrace reducing their sensitivity. | Moderate | None (except proposed Route 7). | Insignificant |
| *Crane Court (VSR5)* | Elevated views from the headland to the north. Views are primarily south-west over the Lamma Channel but those towards the site are partially screened by Aegean Terrace reducing their sensitivity. | Moderate | None (except proposed Route 7). | Insignificant |
| *Wah Fu Estate (VSR6)* | Open views over the southern Waterfall Bay headland with development platform, the reclamation site towards the East Lamma Channel. High-rise residential with high sensitivity. | High | East facing blocks will have views screened by buildings on the southern headland. | Significant Adverse |
| *Pok Fu Lam Gardens & Chi Fu Fa Yuen (VSR7)* | Western blocks with open views over the wooded hillsides i.e. the primary green backdrop adjacent to Victoria Road, beyond which is the reclamation and the East Lamma Channel. High-rise residential with sensitivity | Moderate | Being elevated and remote from the site their views will only be partially screened in one direction only.<br>Alternative directions of view are possible. | Moderate Adverse |

| VSRs | Existing Visual Character | Quality / Sensitivity | Impact due to the Development | Degree of Impact |
|---|---|---|---|---|
| | reduced due to distance. | | | |
| *Waterfall Bay Park (VSR8)* | Open views towards Waterfall Bay headland and the natural waterfall down the high rocky cliffs. | High | Visual intrusion due to the introduction of new buildings and a new Southern Access Road. | Significant Adverse |
| *East Lamma Channel (VSR9)* | Remote views with mixed character of high-rise housing estates with a natural wooded hillside setting. Low lying reclamation indistinct from lower levels, reduced sensitivity due to distance and availability of alternative views. | Moderate to high | Existing views are remote and characterised by the mix of residential with woodland setting. Alternative views exist. | Moderate to high Adverse |
| Secondary VSRs | | | | |
| *Vocational Training Centre (VSR10)* | A number of open views are possible over the wooded hillsides adjacent to Victoria Road, beyond which is the reclamation and the East Lamma Channel. Medium-rise institutional facility with sensitivity reduced due to distance and non-residential status. | Low | The elevated location allows open views to be maintained, although downwards they will be overlooking the site. | Slight Adverse |
| *Sassoon Road Residences (VSR11)* | Open views from Aegean Terrace area over the reclamation south along the East Lamma Channel to Lamma Island. Reduced sensitivity due to alternative views west, distance and elevation in relation to reclamation. | Moderate | Several of the southern views will be partially screened. Alternative views exist to the east. | Moderate Adverse |
| *Victoria Road (VSR12)* | Views, partially screened due to roadside vegetation, down the wooded hillside, over the reclamation to the East Lamma Channel. Reduced sensitivity due to transitory nature, distance and partial screening. | Moderate | Existing views are partially screened. This together with its elevation, and transitory nature reduce impact. | Slight Adverse |