

SECTION 8

8 LANDSCAPE AND VISUAL ASSESSMENT

8.1 Introduction

8.1.1 The WCR has been proposed to provide trunk road access between Tseung Kwan O (TKO) New Town and South East Kowloon (SEK). The proposed development covered by this Study will run from the northern side of Yau Tong Bay, south around the headland, adjacent to the coast, and then north towards TKO New Town.

8.1.2 The original 34 options proposed were reduced during the initial screening process in the *Selected Options Report* to four options. These four options were further investigated in the *Alignment Options Report* stage to identify a single preferred alignment option, previously referred to as Option 2D2. This EIA Study provides the detailed assessment for the landscape and visual elements of this preferred alignment option which have been undertaken by Hassell and have been incorporated into this EIA.

8.1.3 All figures in this section are provided in *Annex H* of this report.

8.2 Methodology

8.2.1 The criteria for evaluating Landscape and Visual Impacts are laid out in the *Technical Memorandum on Environmental Impact Assessment Process* (EIAOTM). The relevant criteria for Landscape and Visual Impacts are defined in *Annex 10 : Criteria for Evaluating Visual and Landscape Impact, and Impacts on Sites of Cultural Heritage* of the EIAO-TM. The Landscape and Visual Impacts have been considered separately as follows:

- the landscape impact assessment shall assess 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,
- the 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.

Landscape Impact

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

- baseline survey; and,
- potential landscape impacts assessment.

Baseline Survey

8.2.3 A baseline survey of the existing landscape character and quality has been undertaken from site and desktop 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.

8.2.4 Proposed developments either within the Study Area or adjacent to it are also considered. The baseline survey has formed the basis of the landscape context by describing broadly homogenous units of character. The landscape is rated into low, medium or high depending not only on 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.

Landscape Assessment Methodology

8.2.5 The assessment of the potential landscape impacts of the proposal 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.

8.2.6 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.

8.2.7 The degree of landscape impact is rated into highly significant, significant, moderate, slight and insignificant. The impacts may be beneficial or adverse.

Visual Impacts

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

- baseline survey; and,
- visual impact assessment.

Baseline Survey

8.2.9 The baseline survey of all views towards the proposal 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 affected by the scheme. The potential receivers are considered as three groups:
 - (i) views from residences the most sensitive of receivers due to the high potential of intrusion on the visual amenity and quality of life;
 - (ii) view from workplaces less sensitive than above due to visual amenity being less important within the work environment; and,
 - (iii) 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.

Visual Impact Assessment Methodology

8.2.10 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 have been considered.

8.2.11 The baseline survey will form of 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 impacts, 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.

8.2.12 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 view;
- quality of existing view;
- context and location of the visually sensitive receiver;
- visual receiver group sensitivity;
- degree of change to existing views;
- other views available to visual receiver group; and,
- the cumulative effects on views of this and other neighbouring developments.

8.2.13 The degree of visual impact is rated as highly significant, significant, moderate, slight and insignificant. The impacts may be beneficial or adverse.

Development of Mitigation Measures

8.2.14 The identification of the visual and landscape 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 reservations and adjacent to any new structures;
- earth mounding and screening, structural or vegetated;
- highlighting unacceptable impacts and considering alternative scheme proposal;
- treatment of structural forms;
- hard landscape, furniture and other landscape; and,
- significant landscape elements.

8.2.15 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.

8.3 Existing Landscape Baseline Conditions

Landscape Context

8.3.1 The Landscape Context of the Study Area varies, from the hard urbanised areas of Yau Tong to the natural slopes of Devil's Peak (shown in *Figures 8.1 to 8.7*). For the purposes of this Study 13 existing character units have been identified, together with one of planned development (shown in *Figure 8.2*). The 13 existing character units are listed as follows:

- Industrial District;
- Medium rise Residential District;

- Lowrise (between 14 storeys) Residential District;
- Park and Recreation Areas;
- Eastern Harbour Crossing Toll Plaza;
- Open Car Park;
- Woodland;
- Scrubland;
- Grassland;
- Lei Yue Mun Headland and Tseung Kwan O Area 131 Port Development;
- Quarry;
- Residential Development Areas;
- Planned Development Areas; and
- Tseung Kwan O Permanent Cemetery.

Industrial District

- 8.3.2 Yau Tong Bay Harbour Industrial District comprises medium rise warehouses, godowns and factories (shown in *Figure 8.4*, photographs a and b). Buildings are generally seven storeys high, of concrete construction and utilitarian design. Along the waterfront are a number of open sided boat yards. A number of areas contained within this district are derelict with dilapidated buildings, temporary huts and truck parking. The general landscape character is typical of warehouse areas with an emphasis on hard elements. General quality of landscape character is low.

Medium rise Residential District

- 8.3.3 Medium rise residential developments lie immediately east of the industrial district in Yau Tong (shown in *Figure 8.4*, Photograph c). They are of concrete construction and typify public housing areas in Hong Kong. They contain communal sitting and ball sports facilities. Many have shopping and commercial centres on the ground and first floors. The Bishop of the Roman Catholic Church is located on the corner of Cha Kwo Ling Road and Yan Wing Street, adjacent to the Yau Tong Shopping Centre. The general streetscape of this area is hard but does contain a number of semi-mature street trees and wooded embankments in reasonable condition. Hard elements are of simple design and materials, e.g. concrete and tubular metal. General quality of the landscape is medium.

Lowrise (between 14 storeys) Residential District

- 8.3.4 Two lowrise residential areas exist in the Study Area (shown in *Figure 8.4*, Photographs d to f). These are:
- the main area of lowrise housing is located south of the Sam Ka Tsuen Typhoon Shelter on the headland and comprises the joined villages of Sam Ka Tsuen, Lei Yue Mun and Ma San Tsuen. They are mixed construction comprising both permanent concrete and semi-permanent metal and timber structures. The settlement is densely populated with access consisting primarily of narrow covered alleyways. Renowned seafood restaurants found on the southern tip the district are of some cultural importance. A Tin Hau

Temple is located on the coast in Ma San Tsuen; and,

- a small part of Cha Kwo Ling Village to the north is also included in the Study Area. It comprises mainly a derelict school but is otherwise a typical mix of permanent and semi-permanent structures. A Tin Hau Temple is located in the south.

8.3.5 The landscape quality of these areas is considered to be medium.

Park and Recreation Areas

8.3.6 There are primarily three areas which are centrally located in Yau Tong (shown in *Figure 8.5*, photograph g):

- Sam Ka Tsuen Recreation Ground on Cha Kwo Ling Road. A recently developed area located between the industrial and highrise housing districts. It comprises sitting-out areas within young tree and shrub planting and also provides children's play space. It is one of the largest public open spaces within the urbanised areas and, as such, provides relief from the enclosed buildup areas;
- Sam Ka Tsuen Typhoon Shelter Promenade Sitting-out area. Primarily a pedestrian link from Yau Tong to Sam Ka Tsuen in the low rise Lei Yue Mun fishing village settlements, it also serves as a tree lined paved sitting-out area on the northern edge of the Typhoon Shelter. It again provides relief from the urbanised areas as well as providing the Shelter with a promenade; and,
- Sam Ka Tsuen Typhoon Shelter Entrance Sitting-out area. A recently developed sitting-out area at the end of the entrance wall to the shelter. It is paved with seating, shade structures and semi-mature trees. It is, however, poorly used due to being isolated from local users.

8.3.7 The landscape quality of the first two of these areas is considered high, primarily due to their important role in providing relief from the hard urbanised areas of Yau Tong. The quality of the third one is low, being isolated from use.

Eastern Harbour Crossing Toll Plaza

8.3.8 Located to the north of the site it provides the facilities for vehicular entry / exit to the Eastern Harbour Crossing (shown in *Figure 8.5*, photograph h). Primarily consisting of large expanses of tarmac, toll booths and the tunnel entrance portal, it is enclosed by cut rock faces and is of low landscape quality, although its location is critical.

Open Car Park

8.3.9 Located centrally to the Study Area, the car park is an open expanse of tarmac partially enclosed by tree belts but open to the Typhoon Shelter (shown in *Figure 8.5*, photograph i). It is of low landscape quality.

Woodland

8.3.10 A number of woodland blocks exist within the Study Area (shown in *Figure 8.5*, photograph j), namely:

- amenity woodland planting on the formed slopes adjacent to the toll plaza comprising young trees of general amenity species. This woodland block is a buffer zone to the toll plaza;
- amenity woodland planting of semi-mature general amenity species, acting as a buffer zone between industrial and residential areas;
- natural woodland on the hillside acting as a buffer between the industrial and parts of the highrise residential districts. Trees are of mixed age and in fair condition;
- natural woodland pockets within the urbanised areas, which, together with the public park, provides relief from the hard elements as well as serving as a point at which the Devil's Peak vegetation interfaces with the centre of Yau Tong; and,
- mainly natural woodland areas on Devil's Peak. A mix of secondary and disturbed woodlands. A number of areas are dominated by *Acacia confusa* plantation though much is natural or contains fruit trees. Large rocky outcrops and erratics are common.

8.3.11 The quality of the first and second of these is moderate. The remaining three areas are of high quality due to providing or acting as relief or buffer zones in the urbanised areas, or as being a dominant part of the hillside mosaic and village life.

Scrubland

8.3.12 Mixed scrubland and grassland are present in large areas on Devil's Peak (shown in *Figure 8.5*, photograph k). It forms dense vegetated cover up to 2 m high and is an integral part of the hillside mosaic of vegetation and rock outcrops. The landscape quality is medium.

Grassland

8.3.13 Two areas of grassland exist (shown in *Figure 8.5*, photograph l). These are:

- in the north of the Study Area on the crest of the cut slopes adjacent to Cha Kwo Ling Road. It is probably sown and provides low vegetative cover to the hillside; and,
- on the hillside of Devil's Peak existing on both fire maintained and disturbed land. It also contains some areas of banana trees particularly on the lower parts near the shoreline. It is an integral part of the hillside mosaic of vegetation.

8.3.14 The landscape quality of these areas is medium.

Lei Yue Mun Headland and Tseung Kwan O Area 131 Port Development

8.3.15 Tseung Kwan O (TKO) Area 131, to the east of Lei Yue Mun Gap in Tseung Kwan O Bay, is proposed to be developed as a cargo working area within this area (shown in *Figure 8.6*, photograph m). It is programmed for construction consecutively with the WCR. It includes the following proposals which are relevant to this Study:

- reclamation and ancillary port development of an approximate 125 m strip along the existing rocky coastline from Lei Yue Mun Point towards the TKO New Town Reclamation, including an approximate 150 m seawall at Lei Yue Mun Point itself;
- two breakwaters running parallel to the reclamation 75 m from the edge;
- a cargo working area;
- a typhoon shelter; and
- a barging point for public dumping.

8.3.16 It is projected that it will be of low landscape quality.

Quarry

8.3.17 A substantial area is located of the southern headland of Lei Yue Mun Point (shown in *Figure 8.6*, photograph n). It is of open cast workings and cut slopes which have now become naturally vegetated with rough scrubland. The landscape quality is medium.

Residential Development Areas

8.3.18 This includes one large residential development that is undergoing construction (shown in *Figure 8.6*, photograph o). It is located adjacent to Lei Yue Mun Road, Ko Chiu Road and Yan Wing Street. The redevelopment of Ko Chiu Road Estate and Yau Tong Estate, together with the planned public housing development at the Lei Yue Mun Supplementary Housing Site will be comprehensively redeveloped / developed as one integrated development. In the context that this will be a newly developed residential area the landscape quality is medium.

Planned Development Areas

8.3.19 These areas include sites of development that are currently at the planning phase only (shown in *Figure 8.6*, photograph p and *Figure 8.7*, photograph q provided in *Annex H*). The Central and East Kowloon Development Statement recommended urban restructuring of the entire Yau Tong area. The latest planning intention is that the CDA zone at Yau Tong Bay is proposed to be extended onto the planned reclamation of Yau Tong Bay to the proposed WCR. Currently, it is proposed that these areas will be developed as primarily highrise residential units, together with some G/IC and commercial developments. This type of development is also planned for the areas east of the Eastern Harbour

Crossing, the site of the Kaolin Mine at Cha Kwo Ling and to replace much of the Yau Tong Industrial Areas. The proposed Yau Tong Urban Fringe Park and waterfront promenade, and Lei Yue Mun area upgrading proposals recommended include retaining traditional village area, improving the living conditions for local residents as well as introducing specialist attractions such as waterfront promenade and theme park. It is envisaged that the existing environment would be upgraded upon completion of the proposals. These planned developments would alter the existing landscape character of Yau Tong Bay and adjacent areas to one of highrise residential/commercial development area resulting in a medium landscape quality.

Tseung Kwan O Permanent Cemetery

- 8.3.20 Located on Devil's Peak this is an area of significant religious and cultural value (shown in *Figure 8.7*, photographs r and s). It comprises tiered rows of grave sites with headstones and includes a columbarium which is a medium rise rendered concrete complex. A number of pagodas are also present. The landscape quality is medium.

Summary

- 8.3.21 The landscape character of the Study Area is varied from the hard urbanised areas to the north and Devil's Peak to the south.
- 8.3.22 The urbanised areas are generally low / medium quality industrial and residential areas but do contain some relatively small areas of high quality which are of considerable importance, providing relief in the predominantly harsh environment. These are:
- Sam Ka Tsuen Recreation Ground on Cha Kwo Ling Road,
 - Sam Ka Tsuen Typhoon Shelter Promenade Sitting-out area; and
 - the woodland pockets within the urban areas.
- 8.3.23 The southern part of the Study Area comprises mainly of the Devil's Peak and the lowrise waterfront villages. Overall it is of medium landscape quality but does contain an area of high quality woodland.

Planning and Development Control Framework

Impact on Statutory and Non-Statutory Landscape Designations.

- 8.3.24 The following is a brief description of impacts associated with the alignment on statutory and non-statutory landscape planning designations. Designations are based upon the current town plans covering the Study Area comprising the draft Cha Kwo Ling, Yau Tong, Lei Yue Mun Outline Zoning Plan No. S/K15/10, Tseung Kwan O Outline Zoning Plan No S/TKO/6, and the Metroplan.

Lei Yue Mun Headland and Tseung Kwan O Area 131 Port Development

- 8.3.25 The road alignment will impact on statutory "Green Belt" and "Landscape Protection Area" along the Lei Yue Mun Headland and the Tseung Kwan O Area 131 Port Development.

Lei Yue Mun and Sam Ka Tsuen Villages

- 8.3.26 The proposal will impact these "Village Type Development".

Open Space

- 8.3.27 The road will not directly impact on any areas designated as open space.

Planning Intentions for the Study Area

- 8.3.28 The proposed WCR is a major trunk road linking Road P2 in Tseung Kwan O New Town and Trunk Road T2 in the proposed South East Kowloon Development via Tseung Kwan O Area 131, Lei Yue Mun and Yau Tong. The planning intention for Tseung Kwan O Area 131 is for port development. Its future development is, however, subject to the findings of an on-going study (ie. *Feasibility Study for Tseung Kwan O Port Development at Area 131*). The planning intention of the designation of "Village Type Development" in Lei Yue Mun is to conserve the traditional character of the existing Lei Yue Mun Villages. Its future planning is subject to the on-going study, the *Study on Village Improvement and Upgrading of Lei Yue Mun Area* which includes the recommend alignment of WCR as a constraint. In order to minimize the possible adverse impacts of the proposed WCR to the Lei Yue Mun Villages, a 6-month focused study, *Study on Minimisation of the Impact of Western Coast Road on Lei Yue Mun Villages*, has recently commenced. The planning intention of Yau Tong is primarily for high to medium density residential developments. Such developments have been taken into account in the subject assessment.

8.4 Existing Visual Baseline Conditions

Visual Envelope

- 8.4.1 The visual envelope map defines the extent of visual influence or visual zone within which the proposed development may be contained either wholly or partially within views (shown in *Figure 8.9*).

Chiu Keng Wan to Lei Yue Mun Point

- 8.4.2 To the north views contained by the two peaks of Chiu Keng Wan Shan and Devil's Peak. To the south the visual envelope extends across the bay to Fat Tong Chau, Tin Ha Shan and up to the crests of Clear Water Bay Country Park.

However, in the context of the completion of the proposed TKO Area 131 Port Development, the views from across Tseung Kwan O Bay will be restricted and screened by the cargo working area and ancillary facilities.

Lei Yue Mun Point to Lei Yue Mun Road

- 8.4.3 To the east views to this section of the road are contained by Devil's Peak and Chiu Keng Wan Shan. Views from the west are contained by the industrial areas and the residential areas of the Yau Tong Centre.

Lei Yue Mun Point to Cha Kwo Ling Road adjacent to the Toll Plaza

- 8.4.4 To the east views will generally be contained by the waterfront buildings allowing only glimpsed views through. As the road passes Yau Tong Bay the views then extend to the highrise housing areas of the Yau Tong Estate. To the west views extend over to Hong Kong Island and in particular the districts of Heng Fa Chuen, Shau Kei Wan, Taikoo Shing and Quarry Bay. They partially extend to the ridgelines of Mount Collinson and Mount Parker.

Visual Context

- 8.4.5 The visually sensitive receivers (VSRs) have been considered as groups which reflect their sensitivity, similarity of views and the impracticality of visiting every property. Viewpoints (VP) have been selected which demonstrate the typical views experienced within each of these VSR groups and are shown in *Figures 8.10* and *8.11*.

Eastern Tseung Kwan O

- 8.4.6 Views towards the site originate from Fat Tong Chau, Clear Water Bay Country Park and the reclaimed waterfront areas. Typical views arise from the edge of the Tseung Kwan O reclamation Area 86 (VP1, shown in *Figure 8.12*, Viewpoint 1) and Area 87 (VP2, shown in *Figure 8.12*, Viewpoint 2). Currently, they comprise Tseung Kwan O Bay with a background of Devil's Peak and its natural rocky coastline. However, in the context of the proposed TKO Area 131 Port Development, the future views would be replaced by freight shipping, the cargo working area and ancillary facilities. Although the views are good, comprising of the bay against a background of the hillside, the visual quality is medium due to their remoteness.

Hong Kong Island

- 8.4.7 In general, the views from Hong Kong Island variously comprise:

- Tseung Kwan O Bay;
- Lei Yue Mun Gap;
- inshore service vessels;
- the Yau Tong industrial harbour frontage;
- Lei Yue Mun and Ma San Tsuen fishing village settlements; and

- the vegetated slopes of Devil's Peak in the background.
- 8.4.8 Typical views towards the Study Area arise from Heng Fa Cheun (VP3, shown in *Figure 8.13*, Viewpoint 3), Lei Yue Mun Fort (VP4, shown in *Figure 8.13*, Viewpoint 4) and Quarry Bay (VP5, shown in *Figure 8.14*, Viewpoint 5).
- 8.4.9 The views arising from Heng Fa Chuen (VP3) are directly towards the quarry and Ma San Tsuen at the tip of Lei Yue Mun Point, and obliquely along the eastern coastline of Devil's Peak and the coastline of Yau Tong. The views are direct and remote. The proposed TKO Area 131 Port Development will be a major feature in the future views from this viewpoint and will restrict the openness experienced along the Devil's Peak coastline.
- 8.4.10 Lei Yue Mun Fort (VP4) experiences similar views, although they are from the elevated hillside. The highrise areas of Yau Tong are visible in the western part of the views, however, the local topography and vegetation restricts their openness.
- 8.4.11 The views from Quarry Bay (VP5) are partly industrial and urban in nature but improved by the waterfront villages and background of Devil's Peak. The proposed TKO Area 131 Port Development will be visible but will not detract severely from the existing views due to their remoteness and degree of view. The visual quality of these views is medium.
- 8.4.12 Views also arise from the nonresidential public areas of Mount Collinson, Mount Parker and Lei Yue Mun Country Park. Those arising from the upper peaks of the hills the local vegetation and topography generally screens views across to the Study Area. At those points where open views are possible the remoteness of the views reduces their sensitivity to impact to a low level.

Views from Lei Yue Mun Gap Boat Traffic

- 8.4.13 Views towards the site from boat traffic (VP6, refer to *Figure 8.14*, Viewpoint 6) are similar to those from Hong Kong Island but are much closer. They will, at varying points, consist of:
- Yau Tong industrial harbour front,
 - Lei Yue Mun fishing village settlements,
 - the quarry at Lei Yue Mun Point,
 - Devil's Peak; and
 - the proposed TKO Area 131 Port Development.
- 8.4.14 Overall they contain mixed developments together with the rural nature of southern Devil's Peak. The views are generally good, particularly those of the southern part of the Study Area and Tseung Kwan O Bay. This, along with the slow nature of boat traffic, their open views and that the Lei Yue Mun Gap is an entry / exit point of Victoria Harbour results in the visual quality of these views being high. The proposed TKO Area 131 Port Development would only detract from certain views with overall sensitivity remaining high.

Yau Tong Industrial District

8.4.15 Views from the Yau Tong industrial areas are possible to many sections of the scheme. Towards the southeast the views comprise the following:

- the Sam Ka Tsuen Typhoon Shelter and semi-permanent fishing boats,
- a single row of semi-mature trees,
- Lei Yue Mun fishing village settlements,
- the vegetated and rocky hillside of Devil's Peak.

8.4.16 These views are partially screened by a sitting-out area with shade structures and young trees. In the context that the VSRs are primarily workers, the visual quality is medium.

8.4.17 The primary views from Yau Tong Industrial District (VP7, shown in *Figure 8.15*, Viewpoint 7) are towards Hong Kong and comprise the following:

- Lei Yue Mun Gap and inshore service vessels;
- waterfront and highrise developments of Shau Kei Wan and Quarry Bay; and,
- Mount Parker in the background.

Although views are good, they are distant. Therefore, visual quality is medium.

8.4.18 Views across Yau Tong Bay (VP8, shown in *Figure 8.15*, Viewpoint 8) are dominated by the freight shipping and inshore service vessels within the bay with views in the background over Lei Yue Mun Gap towards Hong Kong Island in the distance. The visual quality is low.

8.4.19 However, in the context of the planned highrise residential and commercial developments for the Cha Kwo Ling (VP9, shown in *Figure 8.16*, Viewpoint 9) and Yau Tong (VP10, shown in *Figure 8.16*, Viewpoint 10) area including the extension of the CDA on reclamation in Yau Tong Bay (refer to VP7 for approximation of view), the views arising from these areas will be across Lei Yue Mun Gap towards Hong Kong Island. The VSRs in this scenario would be highly sensitive to visual change due to them being primarily highrise residential in nature.

Proposed Area 131 TKO Port Development

8.4.20 In the context of the proposed port development being completed there would be VSRs associated with the ancillary facilities. Views from these areas towards the site would be good comprising the vegetated hillslopes of Devil's Peak. However the visual quality would be medium due to the reduced amenity value of the views arising from industrial areas.

Medium and High Rise Residential Districts

8.4.21 Views from the residential districts (VP11, shown in *Figure 8.17*, Viewpoint 11), including Yau Tong Estate Redevelopment, Ko Chiu Road Estate and Lei Yue Mun Supplementary Housing Site towards the site will primarily be of the

intermediate residential blocks. The views from the lower levels are generally screened by buildings and vegetation. However, some views from the southernmost blocks contain Lei Yue Mun fishing village settlements and the vegetated Devil's Peak hillside. The visual quality of these views is high.

Public Areas

8.4.22 Views from public areas within Yau Tong are generally enclosed but often contain woodland in the background. A number of views are considered particularly important as they arise from nodal points, sitting-out areas or other areas of high public activity. These are:

- Sam Ka Tsuen Recreation Ground (VP12, shown in *Figure 8.17*, Viewpoint 12), a major visual resource within Yau Tong providing relief from the otherwise enclosed views in the locality. Some partially screened views are possible towards the rocky and vegetated hillside of Devil's Peak;
- Shung Shun Sitting-out area (VP13, shown in *Figure 8.18*, Viewpoint 13) has views across the Sam Ka Tsuen Typhoon Shelter towards the waterfront villages with Devil's Peak in the background;
- Sam Ka Tsuen Typhoon Shelter Promenade Sitting-out area (VP14, shown in *Figure 8.18*, Viewpoint 14) has views across the Typhoon Shelter and fishing boats to the background view of Hong Kong Island; and,
- Sam Ka Tsuen Typhoon Shelter Entrance Sitting-out area, views across the Lei Yue Mun Gap to Hong Kong Island, although this area is under used.

8.4.23 The visual quality of these views is high.

Lei Yue Mun Village Settlements

8.4.24 Views to the site from Lei Yue Mun village (VP15, shown in *Figure 8.19*, Viewpoint 15) and Ma San Tsuen are up the steep vegetated slopes of Devil's Peak. Rock formations on the hillside provide much visual stimulus. However, the views from many locations are screened by the local topography and vegetation such as that at the Ma San Tsuen Tin Hau Temple (VP16, shown in *Figure 8.19*, Viewpoint 16) which is set into rock formations at the base of the hillside and has no direct view up the hillside. Additionally, many of the alleyways are covered screening the views from numerous parts of the village at street level. There are also views from Lei Yue Mun Village (VP15) across Sam Ka Tsuen Typhoon Shelter, over Lei Yue Mun Gap and towards Hong Kong Island. Visual quality of those views which are open is high, particularly considering the seafront context of the restaurants.

Tseung Kwan O Permanent Cemetery

8.4.25 Views from the cemetery (VP17, shown in *Figure 8.20*, Viewpoint 17) are over the waters of Tseung Kwan O Bay towards Clear Water Bay Peninsula. The site

of the proposed road itself is partially screened by the local topography and vegetation. However, in the context of the TKO Area 131 Port Development, some views will contain sections of the cargo working area and handling facilities. The quality of the existing views is high.

Devil's Peak Trails

8.4.26 Views towards the site from the trail network (VP18, shown in *Figure 8.20*, Viewpoint 18) are generally screened by vegetation and landform. There are however a number of glimpsed views which vary and include views of the following:

- over Tseung Kwan O Bay;
- over Lei Yue Mun Gap to Hong Kong Island;
- over the Lei Yue Mun waterfront villages to Hong Kong Island; and,
- over Yau Tong Industrial and residential areas.

8.4.27 Although these views are good, walkers are transitory in nature and views are either screened or glimpsed. In the context of the proposed TKO Area 131 Port Development, the cargo working area and associated freight shipping will be a major feature of Tseung Kwan O Bay in a number of views, although many will be screened. Visual quality of these views is medium.

Views from Cha Kwo Ling

8.4.28 Views west towards the site from this low rise settlement are restricted by a boundary wall to the dockland areas. In front of this is the dual carriageway Cha Kwo Ling Road. Views to the south are restricted by vegetated embankments adjacent to the toll plaza. The overall quality of these existing views is low.

Summary

8.4.29 The visual context is varied from the Yau Tong urbanised areas to the natural hillside of Devil's Peak.

8.4.30 Views towards and within the urban areas are generally of low quality being enclosed and comprising the visually harsh industrial and residential areas. However the Sam Ka Tsuen Recreation Ground and views to surrounding woodland and hillsides, provide visual relief to this environment, are of considerable importance, and high visual quality.

8.4.31 Remote views containing Devil's Peak are generally of moderate visually quality, comprising the vegetated hillside, waterfront villages and Sam Ka Tsuen Typhoon Shelter. Some views of particular significance and high visual quality are:

- views south from the housing developments;
- views from Lei Yue Mun and Ma San Tsuen to Devil's Peak;
- views from boat traffic in Lei Yue Mun Gap; and,
- views from the public recreation areas.

8.5 Landscape Impacts Assessment

Scheme Proposals

8.5.1 The scheme, as covered by this Study, arises as a continuation of the proposed road connection to southeast Kowloon. A roundabout is proposed west of the Eastern Harbour Crossing Toll Plaza on Cha Kwo Ling Road with a two sliproad connection to the proposed WCR. The WCR will then run southeast as a low elevated road across Yau Tong Bay and then on reclamation adjacent to the waterfront. Two access sliproads will provide connection from the northern section of the road to Ko Fai Road. The road will be elevated over the entrance to the Sam Ka Tsuen Typhoon Shelter and run through the Lei Yue Mun fishing village settlements and then along the hillside above Ma San Tsuen Village to Lei Yue Mun Point. At this point access sliproads will run north along the hillside joining up with Cha Kwo Ling and Lei Yue Mun Roads. Past Lei Yue Mun Point the road turns and runs northeast, adjacent to the coast on proposed TKO Area 131 Port Development reclamation up to a proposed roundabout at Chiu Keng Wan where it joins other infrastructure proposals for TKO New Town not covered by this Study.

Construction

8.5.2 The construction phase will impact on the landscape character as follows:

- Construction works will increase boating and barging traffic in Yau Tong Bay changing Yau Tong Bay's character into one of an active construction site;
- Lei Yue Mun landscape character will change as it is cut off from its hillside resource by construction activity, and;
- The landscape character of the coastal edge will be disturbed and turned into an active construction site.

Operational

8.5.3 A number of noise mitigation measures have been recommended previously in *Section 3* Noise Assessment in order to alleviate the forecasted traffic noise attributable to the WCR. These are:

- two cantilever barriers at Cha Kwo Ling and a semi-enclosure west of Yau Tong Bay CD side to Sam Ka Tsuen Typhoon Shelter;
- 5 m cantilever barrier along the northbound carriageway of Cha Kwo Ling Road east of the proposed Cha Kwo Ling roundabout;
- 2 m and 3 m plain barriers along section of the southbound access sliproad from the Cha Kwo Ling roundabout;

- 2 m plain barrier along the southbound carriageway over the entrance to Sam Ka Tsuen Typhoon Shelter;
- full enclosure with a section of open sided semi-enclosure of both sliproad carriageways adjacent to Lei Yue Mun Housing Site Phase 1;

8.5.4 The scheme proposals will require substantial reformation of the existing Devil's Peak hillside slopes, particularly the sections of road adjacent to the Lei Yue Mun fishing village settlement from Lei Yue Mun Point to Sam Ka Tsuen Typhoon Shelter and onwards along the sliproads to Lei Yue Mun Road and Cha Kwo Ling Road. These new cut and fill slopes will result in the loss of approximately 1.5 hectares of woodland and 2 hectares of grasslands. These new cut and fill slopes will require a network of concrete channels for the collection and disposal of storm water.

8.5.5 The scheme proposals will result in a number of landscape impacts to the existing landscape context (Refer to *Figure 8.8*). These are:

New Roundabout at Cha Kwo Ling Road

8.5.6 The proposals require a new roundabout, adjacent to the Eastern Harbour Crossing Toll Plaza. This will extend the existing infrastructure of the area and introduce further uniform hard landscape elements resulting in a moderate adverse landscape impact.

Residential Development Areas

8.5.7 The proposals will cause severe intrusion to the redevelopment of the Ko Chiu Road Estate, Yau Tong Estate and Lei Yue Mun Supplementary Housing Site due to the introduction of a major road within their environs, even though the development is being designed in the context of the proposed road. The requirement for the full enclosure, semi-enclosure noise barriers will introduce further hard landscape elements into the already generally hard environment. The landscape impact is significant adverse.

Sam Ka Tsuen Typhoon Shelter, Yau Tong Bay and Harbour Front

8.5.8 The existing Yau Tong Bay and Typhoon Shelter are open to Victoria Harbour along one side. The proposals will require reclamation (6.4 ha) of the harbour front as a base for the road and elevated road sections, with semi-enclosure noise barrier, over the Sam Ka Tsuen Typhoon Shelter and Yau Tong Bay. The WCR will be a dominating feature across these openings causing a high degree of change in their landscape character. Although the existing character is of low quality this is an extreme change resulting in significant adverse landscape impact to all three areas, particularly considering the proximity of the road to the Typhoon Shelter.

Planned Development to Yau Tong Bay Area

- 8.5.9 The proposed WCR will be a major element along the western edge of the planned development in Yau Tong Bay. In the context of the current available planning proposals outlining the layout for the residential and commercial developments, the WCR, including semi-enclosure of the southbound carriageway, will be adjacent to the proposed waterfront promenade. This will result in the scheme being a major element along the development edge, in particular detracting from the proposed waterfront promenade resulting in a significant adverse landscape impact.

Park / Recreation Areas

- 8.5.10 There are no direct impacts involving loss of park or recreation areas. However the proposals require the reclamation and construction of the road adjacent to the Sam Ka Tsuen Typhoon Shelter Entrance Sitting-out area. This will change the character of the sitting-out area and its waterfront context, particularly considering the tall nature of the structure which will have an additional plain noise barrier. The landscape impact on this sitting-out area is moderate adverse.
- 8.5.11 Impacts to the Shung Shun Street sitting-out area and the Sam Ka Tsuen Typhoon Shelter Promenade sitting-out area are only minor due to the relative remoteness of the proposals to the sitting-out areas. The landscape impact to both of these is slight adverse.

Open Air Car Park

- 8.5.12 The proposals will require loss of a section of the car park. It is, however, of low landscape value and is already an integral part of the infrastructure. As such it will suffer only slight adverse landscape impact.

Lei Yue Mun Fishing Village Settlements

- 8.5.13 The proposals will require demolition of some houses in the Lei Yue Mun fishing village settlements. Apart from the loss of houses the elevated roads will also remove part of the village seafront, become the dominant landscape element and bisect the current settlement pattern. The required plain noise barriers will increase the dominance of the proposals within the environment. The landscape impact is significant adverse.

Devil's Peak Hillside

- 8.5.14 The scheme proposals will incur the loss of 1.5 ha of woodland and 2 ha of grassland vegetation, together with the requirement for some demolition of housing and modification to the local topography. The new cut and fill slopes, together with the required concrete drainage channels, will become major landscape elements on this southern side of Devil's Peak. The proximity of the proposals to Ma San Tsuen will result in it being separated from its important landscape resources of the hillside and woodland. The landscape impact is

significant adverse.

Lei Yue Mun Headland and Tseung Kwan O Area 131 Port Development

- 8.5.15 The WCR may be within the context of the proposed Tseung Kwan O Area 131 Port Development with the WCR area of reclamation encompassing 7.5 ha. The impact of these combined works will result in the loss of approximately 1.2 km of natural coastline and landform in the vicinity of Lei Yue Mun Headland and Tseung Kwan O Area 131 Port Development resulting in significant adverse impact.

Summary

- 8.5.16 The proposals will result in differing degrees of impact to the landscape character between the Yau Tong and Devil's Peak parts of the Study Area. These are:

Construction

The construction phase will impact on the landscape character as follows:

- Construction works will increase boating and barging traffic in Yau Tong Bay changing Yau Tong Bay's character into one of an active construction site;
- Lei Yue Mun landscape character will change as it is cut off from its hillside resource by construction activity, and;
- The landscape character of the coastal edge will be disturbed and turned into an active construction site.

Operational

- Cha Kwo Ling will suffer moderate adverse landscape impact due to the extension of the local infrastructure and the introduction of noise mitigation measures;
- Yau Tong will suffer significant adverse landscape impact through the degree of change to the harbour frontage. There will also be significant adverse landscape impact due to the severe intrusion to the future housing at Ko Chiu Road and Lei Yue Mun Supplementary Housing Site;
- one of the Sam Ka Tsuen Typhoon Shelter sitting-out areas will be greatly affected. The waterfront sitting-out area will suffer moderate adverse impact; and,
- Lei Yue Mun will suffer significant adverse landscape impact due to :
 - demolition of housing;
 - disturbance to patterns of settlement in the Lei Yue Mun fishing village

- settlements;
- loss of natural coastline and landform in the vicinity of the Lei Yue Mun Headland
- segregation of Ma San Tsuen and its hillside resource; and,
- loss of hillside vegetation.

8.5.17 In accordance with *Annex 10* of the EIAO Technical Memorandum, the overall level of impact is considered acceptable with mitigation measures.

8.6 Visual Impact Assessment

Construction

8.6.1 The Construction phase will impact on the VSR's as follows:

- Yau Tong and Hong Kong Island VSR's will have clear views of the construction of the bridge and elevated slip roads in Yau Tong Bay this will include increased boating and barge activity associated with the works;
- Lei Yue Mun VSR's will have views of the hillside interrupted by construction activity; and
- Construction of the road along the coastline and at the base of Devil's Peak including increased barge and boat traffic will impact on Hong Kong Island VSR's.

Operational Impacts to Existing Views

8.6.2 The proposed scheme will result in a number of impacts to visually sensitive receivers and their existing views (refer to *Figure 8.21 and 8.22*). These are:

Impacts to Eastern Tseung Kwan O

8.6.3 The construction of TKO Area 131 Port Development in 2006 will screen the section WCR as covered by this Study. This will result in no visual impacts attributable to the proposed scheme on the VSRs in eastern Tseung Kwan O.

Impacts to Hong Kong Island

8.6.4 The proposals will require a change in character of the existing views currently experienced by VSRs in Hong Kong Island. In the views from the west the harbour front will be partially replaced by a zone of reclamation and be visually dominated by the high level overbridge of the Sam Ka Tsuen Typhoon Shelter and the lower level elevated road across Yau Tong Bay. The hillside section of road and sliproads will detract severely from the existing waterfront villages with Devil's Peak background. The extent of new slopes, with associated concrete drainage channels will cause major intrusion to the existing visual quality of the hillside.

- 8.6.5 Views from the eastern parts, such as Heng Fa Chuen and Chai Wan, will suffer intrusion due to the introduction of a major feature across the mid-levels of Devil's Peak together with the substantial new slopes and drainage channels required. The TKO Area 131 Port Development along the eastern side of Devil's Peak will screen the proposed road from Lei Yue Mun Point towards Tseung Kwan O New Town.
- 8.6.6 Views arising from Mount Parker, Mount Collinson and Lei Yue Mun Park are of very low sensitivity due to intermediate screen planting, remoteness of views and the low number of actual viewers at the source. Therefore the visual impact to these VSRs will be very low. However, the overall visual impact to all Hong Kong VSRs will be significant adverse.

Lei Yue Mun Headland and Tseung Kwan O Bay Coastline

- 8.6.7 The views from this area would suffer detrimentally due to the proposed road screening the lower views of Devil's Peak. The road would also become the major element of these views. However, in the context that the views would be primarily from industrial areas the visual impact is moderate adverse.

Impacts to Lei Yue Mun Gap Boat Traffic

- 8.6.8 The proposals will form an integral part of the coastline from Yau Tong to Tseung Kwan O Bay and will be a dominating element, despite the presence of a tunnel section. They will cause a high degree of change to the existing views with the introduction of the elevated road, new slopes and drainage channels resulting in significant adverse impacts. In the context of the proposed TKO Area 131 Port Development the visual impact of the WCR along the Tseung Kwan O Section will be reduced as it will be primarily screened by the port itself.

Impacts to Yau Tong Industrial District

- 8.6.9 Views from the harbour front towards Hong Kong will experience severe intrusion due to the loss of open views across Yau Tong Bay and Lei Yue Mun Gap to Hong Kong Island. Views towards Lei Yue Mun and Devil's Peak will suffer intrusion with the introduction of the dominating road and noise barrier elements to the scenic waterfront village and hillside. However, the VSRs are primarily factory and godown workers resulting in a moderate adverse visual impact.
- 8.6.10 In the context of the planned redevelopment of the Cha Kwo Ling and Yau Tong area there will be a concentration of primarily highrise residential development, with some commercial, adjacent to the waterfront. These developments will suffer severe intrusion at the lower and midlevels due to the loss of views over Lei Yue Mun Gap to Hong Kong Island. The elevated road structure, together with the semi-enclosure noise mitigation of the southbound carriageway, will screen these views resulting in them being dominated by the proposals and suffering a significant adverse visual impact.

Impacts to Medium and High Rise Residential Developments

- 8.6.11 The proposals will result in severe intrusion to views from the southern parts of Yau Tong Centre, Yau Tong Estate Redevelopment, Ko Chiu Road Estate and Lei Yue Mun Supplementary Housing Site due to the introduction of dominant visual elements along Devil's Peak hillside, in particular the scale of structures involved in the construction of split level sliproads, together with their noise mitigation measures. The impacts will be exacerbated by the extent of slope cutting required together with the introduction of concrete drainage channels on the hillside. The highlevel overbridge and noise barriers at the Sam Ka Tsuen Typhoon Shelter will severely disrupt and dominate views towards Hong Kong Island. The visual impact will be significant adverse.
- 8.6.12 Views over Yau Tong Bay will also suffer intrusion due to the elevated road being a dominant element in the middle ground of views to Hong Kong Island. The section adjacent to the harbour front will generally be screened by existing buildings. However, in the context of the planned redevelopment of the Cha Kwo Ling and Yau Tong area to an area of primarily highrise residential, with some commercial, development many of the views from the more inland residential estates will be screened from the WCR.

Impacts to Public Areas

- 8.6.13 The proposals will generally not affect the visual amenity of public areas with views towards the scheme being screened or only glimpsed. There will, however, be visual intrusion to views from Sam Ka Tsuen Recreation Ground towards Devil's Peak which will now be dominated by the split level slip roads and noise barriers on the hillside, resulting in significant adverse visual impact. Visual amenity of each of the sitting-out areas adjacent to Sam Ka Tsuen Typhoon Shelter will be severely disrupted by the sliproads and highlevel overbridge becoming dominant elements in views to Devil's Peak and Hong Kong Island. These views will also suffer intrusion due to the requirement for new cut slopes and concrete drainage channels between and behind the access sliproads. The Typhoon Shelter Entrance sitting-out area will be greatly affected by the imposition of the high level road structures within many views from the area. The shade effects will also reduce the visual amenity causing a highly significant visual impact. The seating in Shung Shun Street is sited to allow views to the south over the Typhoon Shelter. These views will now be severely disrupted by the high level roads and slopes on the hillside in the background. The shade effects will further reduce the visual amenity resulting in a highly significant adverse visual impact.
- 8.6.14 The Promenade sitting-out area will have its views across the Typhoon Shelter and towards Hong Kong Island severely disrupted by the proposed road, which will result in a highly significant adverse visual impact.

Impacts to Lei Yue Mun Village

- 8.6.15 The proposals will introduce a dominant element and visual barrier to the high quality views up Devil's Peak hillside, particularly those sections with split level

sliproads, noise barriers and new cut slopes with concrete drainage channels. The Typhoon Shelter will become visually dominated by the high level overbridge, together with noise barriers, and views towards Hong Kong will be severely disrupted. Visual impact will be significant adverse.

Impacts to Tseung Kwan O Permanent Cemetery

- 8.6.16 The proposals will general be screened by the local topography and vegetation, although some sections will be visible. The construction of the TKO Area 131 Port Development will be dominant in views across the bay reducing the relative intrusion caused by the road. Hence, there will only be slight adverse impact to the Cemetery.

Impacts to Devil's Peak Trails

- 8.6.17 The proposals will generally be screened by landform and vegetation. This, together with the transitory nature of walkers, will result in slight adverse visual impact.

Impacts to Cha Kwo Ling

- 8.6.18 The introduction of the noise mitigation measures adjacent to the southern part of the village will not greatly affect the existing views, particularly in the context that the school is derelict. The roundabout is screened from the settlement by the vegetated embankment and will only affect the low number of local pedestrians. The visual impact is slight adverse.

Summary

- 8.6.19 The proposals will cause a number of major adverse visual impacts. These are:

Construction

- 8.6.20 The Construction phase will impact on the VSR's as follows:
- Yau Tong and Hong Kong Island VSR's will have clear views of the construction of the bridge and elevated slip roads in Yau Tong Bay this will include increased boating and barge activity associated with the works;
 - Lei Yue Mun VSR's will have views of the hillside interrupted by construction activity; and
 - Construction of the road along the coastline and at the base of Devil's Peak including increased barge and boat traffic will impact on Hong Kong Island VSR's.

Operational

- views from the Lei Yue Mun fishing village settlements both up Devil's Peak and towards Hong Kong;

- views from highrise residential developments towards Devil's Peak and towards Hong Kong Island;
- views from Sam Ka Tsuen Recreation Ground and Typhoon Shelter Sitting-out areas towards Devil's Peak and the overbridge;
- views from Lei Yue Mun Gap Boat Traffic towards the whole of the site area; and,
- views south from the future housing developments Ko Chiu Road Housing Estate and Lei Yue Mun Supplementary Housing Site.

8.6.21 In accordance with *Annex 10* of the EIAO Technical Memorandum, the overall level of impact is considered acceptable with mitigation measures.

8.7 Mitigation Measures

Construction

8.7.1 The existing landscape character and the visually dominant location of the site particularly for those VSR's on Hong Kong Island, Yau Tong and Lei Yue Mun means that the impact of construction works associated with the Project will need to be mitigated where possible. In areas where bridge construction and elevated flyovers will be constructed, there is little opportunity to mitigate their visual impact, however, where works are at grade and are contained within residential areas the use of decorative hoarding should be employed. In areas where works will be carried out adjacent to vegetated slopes soil erosion preventive measures should be employed to prevent unsightly soil slips on the hill face. Further to this the programming of works should be organised so that proposed screen planting works are carried out as early as possible within the contract period. Advanced screen planting will not only help screen the construction phase of the works but also ensure the planting has the maximum amount of time to establish before contract completion and therefore provide a more effective visual screen once the construction works are complete. With implementation of recommended mitigation measures, residual impacts are considered acceptable.

- Provision of decorative hoarding where works are at grade and within residential areas.
- Use of erosion preventive measures to prevent unsightly soil slips.
- Organisation of works programme to ensure advance tree planting is carried out within the construction phase.

Operational

8.7.2 There is limited scope for mitigation measures for the elevated sections of road, particularly those across stretches of water. As such, all measures must be

considered within the context that these structures will be major landscape and visual elements.

8.7.3 In general, mitigation measures for of the WCR are (refer to *Figure 8.23*):

- co-ordination of the design of hard materials finishes to all elevated road structures, particularly those with semi or fully enclosed noise mitigation barriers, to create landscape and visual elements that are integrated with, and features of, the surrounding environment, co-ordination of the slip road column design layout should ensure that they are kept in line for enhanced visual impact;
- provision and implementation of dense screen buffer tree and shrub planting on both sides of the road on the reclaimed areas adjacent to Yau Tong. This will screen the proposed road and noise barriers from Hong Kong Island and the boat traffic. The reclamation base itself will not be able to be screened, however in the context that the existing views are of industrial frontage this area will be a visual improvement;
- co-ordination of the design of noise barriers, including those on elevated structures, to create elements integrated within the scheme and surrounding landscape, care should be taken to avoid any abrupt changes in height of the noise barriers;
- co-ordination of the design of all new formed slopes to have natural looking contours within the context of the existing surrounding topography, particularly in regards to any sections on Devil's Peak;
- provision and implementation of tree and shrub planting to all new formed slopes to replace vegetation removed during works, and to provide a natural visual screen. Species sympathetic to the surrounding vegetation will be used. Shotcrete and chunam to be avoided wherever possible;
- co-ordination of the finished colour to concrete drainage channels on new engineered slopes to reflect the tonal qualities of the adjacent vegetation;
- co-ordination of the design of hard materials finishes and associated soft landscape to the tunnel portals at Lei Yue Mun Point to fully integrated them into the surrounding landscape, it should be ensured that planting areas are provided for screening purposes;
- the implementation of screening by use of tree and shrub planting along both sides of the road, on all new slopes and within any available amenity areas in the section between Lei Yue Mun Point and Chiu Keng Wan;
- screening and use of tree and shrub planting to all amenity strips, central medians and the roundabout island adjacent to Cha Kwo Ling; and
- vetting of the design of the bridge structure, including noise barriers, by the Advisory Committee on the Appearance of Bridges and Associated Structures

during the detailed design.

8.7.4 In accordance with *Annex 10* of the EIAO Technical Memorandum the overall level of impact is considered acceptable with mitigation measures.

8.7.5 All proposed mitigation measures should be developed at the detail design stage and a landscape architect should be employed to ensure the appropriate required quality is achieved for both hard and soft proposals. The planting design should ensure that all areas where mitigation planting is proposed is addressed with appropriate plant selection and specification. As the proposed alignment will be coastal and for a large section located on marine sand fill, species selection and soil amelioration should be carefully considered to ensure rapid and successful plant establishment. Typical plant species should include:-

<i>Botanical Name</i>	<i>Size (mm)</i>	<i>Spacing (mm)</i>	<i>Quantity %</i>
<u>Whips</u>			
<i>Acacia auriculiformis</i>	900 (min)	1000	10%
<i>Casuarina stricta</i>	900 (min)	1000	10%
<i>Eucalyptus citriodora</i>	900 (min)	1000	10%
<i>Albizia lebbek</i>	900 (min)	1000	10%
<i>Bischofia trifoliata</i>	900 (min)	1000	10%
<i>Cerbera manghas</i>	900 (min)	1000	5%
<i>Cinnamomum camphora</i>	900 (min)	1000	5%
<i>Ficus microcarpa</i>	900 (min)	1000	5%
<i>Hibiscus tiliaceus</i>	900 (min)	1000	5%
<i>Schefflera octophylla</i>	900 (min)	1000	5%
<i>Thespesia populnea</i>	900 (min)	1000	5%
<u>Large Shrubs</u>			
<i>Gordonia axillaris</i>	900 (min)	1000	5%
<i>Ligustrum sinense</i>	500 x 500	1000	5%
	500 x 500	1000	5%
	500 x 500	1000	5%

8.7.6 These planting works would be undertaken by TDD and maintained by RSD. It is therefore important that all proposed plant species are approved by the maintenance authority before works are commenced.

8.7.7 Photomontages from five locations are given to demonstrate the visual impacts and mitigation measures on Day 1 and Year 10 (shown in *Figure 8.23* to *8.34* of *Annex H*).

8.7.8 It should be noted that no off-site mitigation measures are proposed.

8.8 Conclusions

Landscape Impacts

8.8.1 The potential landscape impacts are summarised in *Table 8.8a*.

Table 8.8a Landscape Impact Table

Area	Existing Landscape Quality	Impact of Construction And Operation Phase of Development	Residual Impact After Implementation of Mitigation Measures
New roundabout at Cha Kwo Ling Road	Low	Moderate Adverse	Slight Adverse
Residential Development Areas	Medium	Significant Adverse	Significant Adverse
Sam Ka Tsuen Typhoon Shelter, Yau Tong Bay and Harbour Front	Low	Significant Adverse	Significant Adverse
Yau Tong Bay Area	Low	Significant Adverse	Moderate Adverse
Parklands/Recreation Areas			
• Sam Ka Tsuen Sitting-out area	Low	Moderate Adverse	Moderate Adverse
• Shung Shun and Sam Ka Tsuen Sitting-out areas	High	Slight Adverse	Slight Adverse
Open Air Carpark	Low	Slight Adverse	Slight Adverse
Lei Yue Mun Fishing Village Settlement	Medium	Significant Adverse	Moderate Adverse
Devil's Peak Hillside	High to Medium	Significant Adverse	Moderate Adverse
Lei Yue Mun Headland and Tseung Kwan O Bay coastline	High	Significant Adverse	Significant Adverse

8.8.2 The proposed WCR is expected to result in differing degrees of impact to the landscape character between the Yau Tong and Devil's Peak parts of the Study Area. These impacts are summarised as follows:

- the loss of Lei Yue Mun Headland and Tseung Kwan O Area 131 Port Development coastline is considered significant adverse.
- Cha Kwo Ling will suffer moderate adverse landscape impact due to the extension of the local infrastructure and the introduction of the noise mitigation measures;
- Yau Tong will suffer significant adverse landscape impact through the degree of change to the harbour frontage. There will also be significant adverse landscape impact due to the severe intrusion to the future housing at Ko Chiu Road and Lei Yue Mun Supplementary Housing Site;
- one of the Sam Ka Tsuen Typhoon Shelter sitting-out areas will be greatly affected. The waterfront sitting-out area will suffer moderate adverse impact; and,

- Lei Yue Mun will suffer significant adverse landscape impact due to:
 - demolition of housing;
 - disturbance to patterns of settlement in the Lei Yue Mun fishing village settlements;
 - segregation of Ma San Tsuen and its hillside resource; and,
 - loss of hillside vegetation.

Visual Impacts

8.8.3 The potential visual impacts are summarised in *Table 8.8b*.

Table 8.8b Visual Impact Table

Viewing	Visual Quality	Visual Impact of Construction And Operation Phase of Development	Residual Impact After Implementation of Mitigation Measures
Eastern Tseung Kwan O	Medium	None	none
Hong Kong Island	Low to Medium	Significant Adverse	Moderate Adverse
Lei Yue Mun Gap Boat Traffic	High	Significant Adverse	Moderate Adverse
Yau Tong Industrial District:			
• Toward HK	Medium	Significant Adverse	Moderate Adverse
• Across Yau Tong Bay	Low	Moderate Adverse	Slight Adverse
• From highrise residential/commercial development	High	Significant Adverse	Significant Adverse
Lei Yue Mun Headland and Tseung Kwan O coastline	Medium	Moderate Adverse	Moderate Adverse
Medium and Highrise Residential Districts	High	Significant Adverse	Significant Adverse
Public Areas	High	Significant Adverse	Moderate Adverse
Lei Yue Mun Village	High	Significant Adverse	Significant Adverse
Tseung Kwan O Permanent Cemetery	High	Slight Adverse	Slight Adverse
Devil's Peak Trails	Medium	Slight Adverse	Slight Adverse
Cha Kwo Ling	Low	Slight Adverse	Slight Adverse

8.8.4 The proposed WCR is expected to result in a number of major adverse visual impacts. These impacts are summarised as follows:

- views from the Lei Yue Mun fishing village settlements both up Devil's Peak and towards Hong Kong;
- views from highrise residential developments towards Devil's Peak and towards Hong Kong Island;
- views from Sam Ka Tsuen Recreation Ground and Typhoon Shelter Sitting-out areas towards Devil's Peak and the overbridge;

- views from Lei Yue Mun Gap Boat Traffic towards the whole of the site area; and,
- views south from the future housing developments Ko Chiu Road Housing Estate and Lei Yue Mun Supplementary Housing Site.

8.8.5 Mitigation measures have been recommended for both landscape and visual impacts in *Section 8.7*. However, there is limited scope for mitigation measures for the elevated sections of the WCR alignment, particularly those across stretches of water. As such, all measures must be considered within the context that the proposed structures will be major landscape and visual elements.