

## 8. LANDSCAPE AND VISUAL IMPACTS

### 8.1 Introduction

8.1.1 This section of the report outlines the landscape and visual impacts associated with the housing development at Whitehead & Lee On in Ma On Shan in accordance with the Environmental Impact Assessment Ordinance which became law in Hong Kong on 1st April 1998. Both construction and operation impacts are assessed.

8.1.2 The assessment includes:

- a list of the relevant environmental legislation and guidelines;
- a definition of the scope and contents of the study, including a description of the assessment methodology;
- a review of the relevant planning and development control framework;
- a baseline study providing a comprehensive and accurate description of the baseline landscape and visual character;
- recommendation of appropriate mitigation measures and associated implementation programmes; and
- identification of the potential landscape and visual impacts and prediction of their magnitude and potential significance, before and after the mitigation measures.

### 8.2 Environmental Legislation and Guidelines

8.2.1 The following legislation, standards and guidelines are applicable to the evaluation of landscape and visual impacts associated with the construction and operation of the proposed development:

- Environmental Impact Assessment Ordinance (Cap.499.S.16) and the Technical Memorandum on EIA Process (EIAO TM), particularly Annexes 3, 10, 18, 20 and 21;
- Hong Kong Planning Standards and Guidelines;
- WBTC No. 25/93 - Control of Visual Impact of Slopes;
- WBTC No. 14/2002 - Management and Maintenance of Natural Vegetation

and Landscape Works and Tree Preservation;

- WBTC No. 25/92 - Allocation of Space for Urban Street Trees;
- WBTC No. 17/2000 – Improvements to the Appearance of Slopes; and
- HyDTC No. 10/2001 – Visibility of Directional Signs.
- WBTC No. 19/98 - The Advisory Committee on the Appearance of Bridges and Associated Structures (ACABAS)
- WBTC 17/2000 - Improvement to the Appearance of Slopes
- WBTC No. 30/2001 - Capital Works or Maintenance Works (including Tree Planting) Within or Adjacent to the Kowloon-Canton Railway (Hong Kong) Section
- WBTC No. 7/2002 - Tree Planting in Public Works
- EIAO Guidance Note 8/2002 on Preparation of Landscape and Visual Impact Assessment

#### ***Alternative Development Options and Comments on the EIA Study***

8.2.2 Comments were received from various bodies on the alternative options for the Project, as described in Section 2 of the Report. A revised set of development criteria was adopted as described in that section, which became the basis for the latest scheme and for this LVIA.

### **8.3 Scope and Content of the Study**

#### ***Project***

8.3.1 The nature and extent of the housing development and the necessary local infrastructure at Whitehead and Ma On Shan is described in detail in Chapter 2 of this report. The works include the necessary site formation, infrastructure (including Roads D1, L1 and L2, link roads from Road T7 and bridges, retaining walls, and underground drainage and utilities) and the proposed building and land use developments.

### *Limits of the Study Area*

- 8.3.2 The limit of the landscape impact study is 500m on either side of the limit of the proposed works. The limits of the visual impact studies are the zones of visual influence (ZVIs) of the works during the construction and operation phases, which are illustrated later in the chapter in Figure 8.7.

### *Assessment Methodology*

- 8.3.3 Landscape and visual impacts have been assessed separately for the construction, operational (opening day) and residual (Year 10) stages. The assessments take into account existing/planned/approved land uses as baseline conditions, and assess all direct and indirect impacts on existing/planned/approved land uses, and on future outlook of the area. Potential impacts are identified in terms of being beneficial/adverse, direct/indirect, short term/long term, and reversible/irreversible.
- 8.3.4 Impacts are determined in terms of significance thresholds, which are the product of the magnitude of change to baseline conditions due to the proposed works and the sensitivity of resource/character/receivers. In general terms, magnitude of change relates to parameters of the proposed works in the context of baseline conditions, and sensitivity refers to properties of resource/character/receivers:
- 8.3.5 Where appropriate the cumulative impacts of other development proposals is considered.

### Landscape Impacts

- 8.3.6 The assessment of **landscape impacts** involves the following procedures:
- *Identification of the baseline landscape resources (physical and cultural) and landscape character found within the study area.* This has been achieved by site visit and desk-top study of topographical maps, information databases and photographs.
  - *Assessment of the degree of sensitivity to change of the landscape resources/character.* This is influenced by a number of factors including
    - ♦ *quality and maturity of landscape characters/resources,*
    - ♦ *rarity of landscape elements: whether it is considered to be of local, regional, national or global importance*
    - ♦ *ability of the landscape resource/character to accommodate change,*
    - ♦ *whether there are any statutory or regulatory limitations/ requirements relating to the resource*

- *Identification of potential sources of landscape impacts.* These are the various elements of the construction works and operational procedures that would generate landscape impacts.
- *Identification of the magnitude of landscape impacts.* The magnitude of the impact depends on a number of factors including
  - *scale of development, and the physical extent of the impact,*
  - *compatibility of the project with the surrounding landscape,*
  - *duration of impacts i.e. whether it is temporary (short, medium or long term), under construction and operation phases,*
  - *potentially reversible, or permanent and irreversible*
- *Identification of potential landscape mitigation measures.* These may take the form of adopting alternative designs or revisions to the basic engineering and architectural design to prevent and/or minimise adverse impacts; remedial measures such as colour and textural treatment of building features; and compensatory measures such as the implementation of landscape design measures (e.g. tree planting, creation of new open space etc) to compensate for unavoidable adverse impacts and to attempt to generate potentially beneficial long term impacts.
- *Prediction of the significance of landscape impacts before and after the implementation of the mitigation measures.* This achieved by synthesis of the above information leading to an evaluation of the degree of significance of the landscape impacts into thresholds of substantial, moderate, slight, or negligible. Impacts are classified depending on whether the impacts are adverse/beneficial, and irreversible/reversible. By synthesising the magnitude of the various impacts and the sensitivity of the various landscape resources it is possible to identify a series of thresholds to be used as a basis for the categorisation of the degree of significance of the impacts in a logical, well reasoned and consistent fashion.

8.3.7 The rationale for dividing the degree of significance into four thresholds, namely substantial, moderate, slight and negligible depending on the combination of large-intermediate-small-negligible magnitude of change, and high-medium-low degree of sensitivity is presented in Table 8.3.1.

8.3.8 The inclusion of a 'negligible' magnitude of impact is necessary because a negligible impact is different from a 'small' magnitude of impact. A 'small' magnitude impact will cause a varying degree of resultant impact significance depending on whether the landscape resource's sensitivity is low, medium or high. However, a negligible

magnitude of impact will always result in negligible significance, irrespective of the sensitivity of the resource.

**Table 8.3.1**  
**Relationship between Receptor Sensitivity and**  
**Impact Magnitude in Defining Significance**

Impact Significance		Receptor Sensitivity (Landscape Resource or VSR)		
		Low	Medium	High
Magnitude of change relative to baseline conditions due to the Works	Large	Slight/Moderate	Moderate/Substantial	Substantial
	Intermediate	Slight/Moderate	Moderate	Moderate/Substantial
	Small	Negligible/Slight	Slight/Moderate	Slight/Moderate
	Negligible	Negligible	Negligible	Negligible

8.3.9 The assessment of visual impacts involves the following procedures.

- *Identification of the ZVI's during the construction and operational Stages of the works.* This is achieved by site visit and desk-top study of topographic maps and photographs, and preparation of cross-sections to determine visibility of the works from various locations.
- *Identification of the Visually Sensitive Receivers (VSR's) within the ZVI's at construction and operational Stages.* These are the people who would reside within, work within, play within, or travel through, the ZVI's.
- *Assessment of the degree of sensitivity to change of the VSR's.* Factors affecting the sensitivity of receivers for evaluation of visual impacts:
  - *value and quality of existing views,*
  - *availability and amenity alternative views,*
  - *type and estimated number of receiver population,*
  - *duration or frequency of view, and*
  - *degree of visibility*

Those who view the impact from their homes are considered to be highly sensitive as the attractiveness or otherwise of the outlook from their home will have a substantial effect on their perception of the quality and acceptability of their home environment and their general quality of life. Those who view the impact from their workplace are considered to be only moderately sensitive as the attractiveness or otherwise of the outlook will have a less important,

although still material, effect on their perception of their quality of life. The degree to which this applies depends on whether the workplace is industrial, retail or commercial. Those who view the impact whilst taking part in an outdoor leisure activity may display varying sensitivity depending on the type of leisure activity. Those who view the impact whilst travelling on a public thoroughfare will also display varying sensitivity depending on the speed of travel and whether the view is continuous or occasionally glimpsed.

- *Identification of potential sources of visual impacts.* These are the various elements of the construction works and operational procedures that would generate visual impacts.
- *Assessment of potential magnitude of visual impacts.* This depends on a number of factors including
  - *scale of development;*
  - *compatibility of the project with the visual context;*
  - *duration of impacts under construction and operation phases;*
  - *reversibility of change;*
  - *distance of the source of impact from the viewer; and*
  - *potential obstruction of view.*
- *Identification of potential visual mitigation measures.* These may take the form of revisions/refinements to the engineering and architectural design to minimise potential impacts, and/or the implementation of landscape design measures (e.g. screen tree planting, colour design of hard landscape features etc) to alleviate adverse visual impacts and generate potentially beneficial long term visual impacts.
- *Prediction of the significance of visual impacts before and after the implementation of the mitigation measures.* This achieved by synthesis of the above information leading to an evaluation of the degree of significance of the visual impacts into thresholds of substantial, moderate, slight, or negligible. Impacts are classified depending on whether the impacts are adverse/beneficial, and irreversible/reversible. By synthesising the magnitude of the various visual impacts and the sensitivity of the various VSR's it is possible to identify a series of thresholds to be used as a basis for the categorisation of the degree of significance of the impacts in a logical, well reasoned and consistent fashion.

In addition, the assessments have been made on the basis that the Ma On Shan Rail is in place prior to the construction of the housing development at Whitehead.

## 8.4 Planning and Development Control Framework

8.4.1 This EIA report has been prepared as part of a feasibility study into the development of the Study Area. Extensive detail on the planning context of the site and the proposed development is given within earlier sections of the report. The following section summarises the current planning goals and objectives, statutory land-use and landscape planning designations of the Study Area.

### *Existing Uses of the Study Area*

8.4.2 The Study Area, covering the whole Wu Kai Sha Peninsula, is located in Planning Areas 111 and 108 to the north-east of the Ma On Shan Town Centre. It is bounded by Starfish Bay (Tai Po Hoi) in the north and in the east, the Sha Tin Hoi (Tide Cove) and the Wu Kai Sha Village in the west, the high-density development (e.g. Lee On Estate and Monte Vista) and the future Road T7 in the south. The Peninsula protrudes extensively into Tolo Harbour and is a very prominent physical landform in Ma On Shan.

8.4.3 The Study Area is zoned “Undetermined”, “Other Specified Uses (Light Rail Depot with Commercial/Residential Uses)”, “Open Space” and “G/IC” on the draft Ma On Shan Outline Zoning Plan No. S/MOS/9 (the OZP) (see Figure 8.1). The Study Area is approximately 63 hectares in size.

8.4.4 Whitehead was formerly occupied by the Whitehead Detention Centre for Vietnamese boat people, but this was cleared in 1997. A major portion of the Whitehead fronting Tolo Harbour is currently occupied by a private golf driving range under short-term tenancy. The rest of the site to the south is vacant. To Tau Village, a non-indigenous village, is located along the west side fronting Sha Tin Hoi. Some temporary and permanent living quarters are found in the village. Also, some leisure rowing and fishing activities along the To Tau beach are open to the public.

8.4.5 Most of the agricultural land within the site have been paved and a large area is now occupied by an open car park. To the east there are some active agricultural land and dense vegetation are found along the shoreline of Starfish Bay. Adjacent to the agricultural land is a small knoll which has been used as burial ground for villagers of Wu Kai Sha. The knoll is proposed to designate as “Green Belt” on the layout plan proposed under this Study to reflect this existing use.

8.4.6 Further south of the Study Area across Sai Sha Road is the Wu Kai Sha Station development. It is the proposed terminus of the MOS Rail. Construction works for the station are in progress.

### ***Existing Character of Adjacent Areas***

- 8.4.7 The Study Area is situated in a residential neighbourhood characterised by high-density, high-rise public and private developments to its south-west, and low-density developments to its east. The residential cluster in the south-west comprises Lee On Estate, Kam Lung Court, Kam Ying Court, Saddle Ridge Garden and Villa Athena. To the immediate west of the Study Area are Wu Kai Sha Village comprises places previously named as (Wu Kai Sha, Wu Kai Sha Middle Village, Wu Kai Sha New Village and Kwai Po Lau), Cheung Kang, and the Chinese YMCA of HK Wu Kai Sha Youth Village which is for group recreation. Further west along Sai Sha Road are some high-density residential developments at the Ma On Shan town centre.
- 8.4.8 Lying to the east of the Study Area are some low-density developments including Li Po Chun United World College, Helping Hand Cheung Muk Tau Holiday Centre for the Elderly, Symphony Bay and some village developments at Cheung Muk Tau, Sai O and Nai Chung. The Nai Chung Site of Special Scientific Interest, which is of ecological interest, is also close to the eastern boundary of the Study Area.
- 8.4.9 According to the notes of the OZP, the development concept of the area is to achieve a descending building height profile. The proposed and existing development intensities of the surrounding developments extending from Wu Kai Sha to Sai Sha are presented in Figure 8.1. It is clear that most residential developments to the south-west of the Study Area (e.g. Saddle Ridge to Villa Athena) follow a pattern of descending development intensities (plot ratio from 5.7 to 3) as well as building height (from 137 mPD to 103 mPD). To the south of the Study Area, a new private residential development, Monte Vista, achieved a plot ratio of 5 with a building height of 110 mPD (about 32 storeys) which is similar to that of Lee On Estate (a plot ratio of 5.83 and a building height of 110 mPD).

### ***Planned and Committed Development***

- 8.4.10 According to the Layout Plan for Whitehead Area 111(Part) No. L/ST 111B/F published by the Planning Department in June 1997, the former Whitehead Detention Centre site is planned for "OU" to facilitate the implementation of a comprehensive recreation development. It is understood that the former Provisional Regional Council registered interest with Planning Department to develop the ex-detention centre and its adjacent area into recreational facilities comprising holiday camp, theme park, promenade, water sports centre and other ancillary facilities.
- 8.4.11 The To Tau area is reserved for village type development, water sports centre and beach/beach hinterland. In addition, the two headlands and the existing natural and scenic features at the extreme east and west of the peninsula as well as the coastal area along Starfish Bay are currently proposed to be preserved as "Conservation Area".
- 8.4.12 The layout plan has reflected a recreation-led development for Whitehead. However,



it is understood that the Whitehead site has already been designated as one of housing sites on the HOUSCOM's Control List.

- 8.4.13 The site to the north of Wu Kai Sha Station has been designated for a private residential development ("R3") site on the layout plan. A planning approval was granted for a medium-rise comprehensive residential development in July 1997.
- 8.4.14 As set out in Section 2 of the Report, the assessment is based on a plot ratio of 6.5 at the Wu Kai Sha Station development. However, it appears that KCRC are now taking forward a 5.0 plot ratio scheme.
- 8.4.15 The Sha Tin Planning Area 108 Layout Plan was revised and circulated by Planning Department for departmental comments on 13.June.2002. While the maximum plot ratio for the site remained unchanged at 5.0, the height restriction for the MOS Rail Wu Kai Sha Station development site was revised to 183mPD. The concerned Layout Plan was approved by the CPLD on 22.July.2002 and adopted by the Permanent Secretary for Housing, Planning and Lands (Planning and Lands) on 3 September 2002. According to KCRC's latest development proposal which were circulated for departmental comments on 3 April 2002, the proposed development at MOS Rail Wu Kai Sha Station development would have a plot ratio of 5 with building heights ranging from 40 to 48 storeys for the 7-tower option (maximum height 183mPD).
- 8.4.16 The major land uses close to the Study Area are residential, educational and recreational. To the west of the Study Area is the Wu Kai Sha Village and Chinese YMCA of HK Wu Kai Sha Youth Village. To the south are a number of high rise residential developments such as Lee On Estate and private residential developments. To the east is United World College, Helping Hand Cheung Muk Tau Holiday Centre for the Elderly and Symphony Bay Development.
- 8.4.17 At present, Sai Sha Road is a single 2-lane carriageway and provides the main access route between Ma On Shan and Sai Kung, with the proposed Road T7 under construction to provide south eastern bypass to Sha Tin.

### ***Landscape Planning Designations***

#### *Country Park*

- 8.4.18 Part of the Assessment Area for landscape impact assessment purposes falls within Ma On Shan Country Park. One criterion for the designation of country parks is "landscape quality" (Hong Kong Planning Standards and Guidelines, Chapter 10, p.3).

*Sites of Special Scientific Interest*

- 8.4.19 The Nai Chung Site of Special Scientific Interest (SSSI) fall within the Assessment Area, but not within the area of proposed development. Chapter 10 of the HKPSG states at Para 3.3.2 that the purpose of SSSIs is to “conserve and protect fauna and flora and other natural features with special scientific value”. At Para 3.1, SSSI’s are identified as a method of “protecting natural landscape...”. The Nai Chung SSSI was designated due to its “good contact of granite and sediments and traces of black carbonaceous shales.....These are all rare geological features in Hong Kong.”
- 8.4.20 Four habitats of ecological conservation interest on the site are Starfish Bay and other unnamed intertidal habitats, small stands of mangrove along the north-east coast of the peninsula, the Wu Kwai Sha (previously named Lok Wo Sha) fung shui wood, and the secondary and plantation woodlands on the peninsula..

*Green Belt*

- 8.4.21 Within the Ma On Sha Outline Zoning Plan (OZP) (S/MOS/9) two areas of designated Green Belt lie within the Assessment Area. The OZP states that these zones “are for the preservation of large areas of natural landform and vegetation, particularly the upland valleys and the hill slopes extending from Ma On Shan Country Park, which have been classified as significant landscapes...”.

8.5 **Baseline Study**

*Physical Landscape Resources*

- 8.5.1 The baseline landscape characteristics of the site are mapped in Figures 8.2 to 8.6. Photo views illustrating the landscape and visual characteristics are illustrated in Figures 8.8 to 8.11. Landscape resources and character areas are listed in Table 8.5.1.

**Table 8.5.1**  
**Landscape Resources and Character Areas**

Ref	Landscape receiver	Sensitivity to Change	Total Extent
		(Low, Medium, High)	
<b>Landscape Resources</b>			
LR1	Geology (Solid and Drift)	Low	-
LR2	Topography, including three prominent knolls	High	-
LR3	Beaches at Starfish Bay and Wu Kai Sha	High	600 lin. m
LR4	Natural Coastline	High	2950 lin. m
LR5	Plantation Area (5 no. blocks)	Medium	approx 15.0 ha
LR6	Secondary Woodland (4 no. blocks)	Medium	approx 2.7 ha
LR7	Agricultural Land	Medium	2.1 ha
LR8	Existing Soils	Low	approx 37.0 ha.
LR9	Grassland	Low	2.66ha
<b>Landscape Character</b>			
LCA1	Former Whitehead Detention Centre	Low	-
LCA2	Whitehead Peninsula Coast	High	-
LCA3	To Tau	Medium	-
LCA4	Wu Kai Sha	Medium	-
LCA5	Starfish Bay	High	-
LCA6	Wu Kai Sha Development Site	Low	-

8.5.2 Generally, the landscape resources on the Site are of mixed value. The Site lies on the southern shore of Tolo Harbour in the north-east New Territories. Tolo Harbour is a large marine inlet, and much of the Site forms a very distinctive peninsula jutting out into it. The northern part of the Site was formerly a distinctive steep sided hill or knoll rising out of the sea to around 100mPD. However, this area was cleared and levelled to form platforms for the former Government Whitehead Detention Centre. There are distinctive rock outcrops or knolls close to the shore at the north east and north-western tips of the peninsula. Much of the Site is low lying, with the lowest areas being around 1.2mPD and the highest areas are around 25mPD. The topography of the Site is very sensitive and is one of its most distinctive qualities.

8.5.3 The Site has two distinctive sand beach formations, one at Wu Kai Sha, and the other at Starfish Bay which lies in a small inlet. In addition to this the outer edge of the peninsular still retains its natural coastal topography and rock formations. Both the beaches, and the natural coast line are considered to be valuable resources, and given their rarity in Hong Kong generally and on the southern side of Tolo Harbour in particular their sensitivity is considered to be high.

- 8.5.4 The underlying geology of the Site consists of igneous rock, comprising granites of the Cheung Chau formation (Upper Jurassic period). This rock is common across the western New Territories, but rare elsewhere. The Site is the only example of this rock around Tolo Harbour and may account for its distinctive topography (per Atherton, M.J. and Burnett, A.D.).
- 8.5.5 Soils on the Site consist of Krasnosem: Red Loam which is common across the New Territories and Lantau, including Tolo Harbour. These are soils characterised by a lack of profile development comprising nutrient deficient soils overlying clay or clay-loam horizons (per Grant, C.J). They are elements of low landscape sensitivity.
- 8.5.6 Like most of Hong Kong, the prevailing winds are from the east or north-east. This means that the Site is exposed to winds coming down Tolo Harbour for much of the year, resulting in reduced humidity and temperature on the Site. Mean annual rainfall in the area is between 3600mm and 4000mm, making it one of the wettest areas in Hong Kong (per Dudgeon, D. and Corlett, R.).
- 8.5.7 Much of the Site has no significant vegetation, having been cleared for the creation of the Detention Centre (now a golf driving range). Elsewhere on the Site are of plantation which are striking and sensitive features and are considered to be of high sensitivity. There are also several areas of secondary woodland, features of medium landscape sensitivity.
- 8.5.8 A small portion of the Study is under agricultural production and comprise agricultural florals. Agricultural landscapes are becoming increasingly scarce in Hong Kong and are therefore considered to be of medium sensitivity.

#### ***Human and Cultural Landscape Resources***

- 8.5.9 The site contains the existing village settlement of To Tau, which though in a scenic setting, has itself no features of landscape or scenic value.
- 8.5.10 A large portion of the Study Area formerly housed the Whitehead Detention Centre, a closed camp for Vietnamese migrants. All structures have been removed from the camp area, although the concrete platforms are still in-situ and surrounded by chain link fences. The former detention centre occupies much of the land area on the headland, though a golf driving range is also present, there are also large paved vehicle parking areas.
- 8.5.11 There are few existing buildings within the Study Area; occupied/abandoned farm structures and the village of To Tau Tsuen. A road runs behind the beach on the eastern side of the Study Area and leads to Wu Kwai Sha Tsui and the abandoned camp area. Another road crosses the Study Area leading to the western coastal village

of To Tau Tsuen. The southern portion of the Study Area is occupied by Sai Sha Road.

- 8.5.12 A substantial portion of the low area which was formerly farm land has been covered with up to 3m of fill and fenced. Agricultural areas are still present in the area behind Tai Po Hoi and behind To Tau Wan. Areas of forest cover occur on the promontory to the east of Wu Kwai Sha Tsui and in several isolated patches within the Study Area.

### *Landscape Character Areas*

- 8.5.13 The landscape character areas (LCA) to which the Study Area relates are described below and indicated on Figures 8.4 to 8.6.

#### LCA1 - Former Whitehead Detention Centre and Environs

This LCA lies in the central part of the Whitehead Peninsula jutting out into Tolo Harbour as well as a narrow strip of land inland from the site. The peninsula is the site of the former Whitehead Detention Centre which has been dismantled leaving areas of levelled ground. The site is now occupied largely by a driving range and lorry park with earth mounds and groups of trees across it. This is a landscape which is now significantly degraded and incoherent and which has lost almost all its former character, such that its sensitivity to change is now low.

#### LCA2 - Whitehead Peninsula Coast

This LCA forms the coastal strip around the northern, eastern and western sides of the Whitehead Peninsula. It composes a narrow rocky shoreline rising out of the sea and includes two striking rocky headlines which are covered with pine and other vegetation. The LCA is natural and rugged in character and is a good example of a landscape types that is increasingly uncommon in Hong Kong. Its sensitivity is therefore high.

#### LCA3 - To Tau LCA

This LCA includes the small village at To Tau, together with its environs. The LCA has a peaceful and tranquil maritime character, despite its proximity to Ma On Shan and includes a small beach, village houses and surrounding vegetation. Due to the partially developed character of the landscape and its natural maritime setting, the LCA has a medium sensitivity to change.

#### LCA4 - Wu Kai Sha LCA

This LCA includes the village of Wu Kai Sha, together with associated woodlands

and agricultural fields. The village is typical of many in the New Territories, based around a historic core, but now comprising mainly modern 3 storey village housing. Given its combination of natural and man-made features, the LCA is one of medium sensitivity.

#### LCA5 - Starfish Bay LCA

Starfish Bay is a small coastal inlet in the southern shore of Tolo harbour. It is very much enclosed by a headland on the eastern side of the Whitehead Peninsula, and by the southern shore of Tolo Harbour, giving it an intimate and tranquil character. It includes a small unspilt beach and coastal vegetation and is a landscape of high sensitivity to change.

#### LCA6 - Wu Kai Sha Station Development Assessment Site LCA

This LCA lies south of the Sai Sha Road and is currently cleared for development. It has little or no features of landscape value and therefore has an open and degraded character with the result that its sensitivity is low.

#### ***Baseline Visual Conditions***

- 8.5.14 The Project's visual baseline is established by reference to the extent of its visibility, to its visual amenity, key views and by the views of visual receivers at various locations. Reference can be made to Figures 8.7 to 8.11, as well as the Existing Views for the Photomontages Figures 8.15A to 8.20A.
- 8.5.15 The visual amenity of the landscape around Tolo Harbour is variable, but for the most part is extremely high. The western end of the Harbour is a large scale landscape characterised by surrounding mountains and the scale of Tolo Harbour. It however suffers from the large scale and incoherent urban infrastructure of the new towns of Ma On Shan, Tai Po and Sha Tin. These introduce incoherent colours, patterns and rhythms into views. Views in urban areas are short and broken, although along Tolo Highways, there are impressive views out over the Harbour.
- 8.5.16 Those areas east of Tai Po and Ma On Shan are large scale landscapes defined by mountains and sea. Within this, there are however small scale visual patterns consistent with rural land uses. Small scale of development, detailed patterns of fields and muted colours and simple textures are all characteristic of this landscape. Views are limited as they are often broken by village housing or by blocks of woodland. These visual qualities are being gradually degraded by incoherent visual features such as landfills, sewage plants and incoherent residential development. For this reason, any further development will fundamentally change the visual character of the landscape and its sensitivity to such development is therefore high.

8.5.17 The eastern part of Tolo Harbour is almost entirely undeveloped and is characterised by the visual interfaces between mountain ridgelines with sky and between seashore and sea. The large scale of views is provided by the precipitous mountains and by the expansiveness of the Harbour. It is dramatic and tranquil landscape whose simple textures are provided by mountain and water and corresponding muted colours. Views contain so little development that any development is likely to have a significant impact on visual character and its visual sensitivity is therefore high.

### *Visibility*

8.5.18 The visual envelope of the development (that area from which any part of the development can be seen) will be fairly extensive, due in large part to its coastal location. At its furthest, it will extend through the Tolo Channel and out to sea. Given the generally poor visibility in Hong Kong, these views are available on rare occasions only. The visual envelope for the project is illustrated in Figure 8.7.

8.5.19 Along the north coast of Tolo Harbour, the visual envelope is constrained by the low ridge of hills which run along the northern side of Plover Cove Reservoir and westwards to Sha Lo Tung. Tai Po Industrial Estate and much of Tai Po lie within the visual envelope.

8.5.20 To the west, the proposed development will be visible from the hills above the Tolo Highways and the Chinese University. When visibility is very good, the Site may also be visible from certain parts of Tai Mo Shan (957mPD), which marks the western-most point in the visual envelope.

8.5.21 To the south west, the visual envelope is much less extensive, as the development will be screened in large part by the buildings of Ma On Shan New Town, from many of which, the Site is clearly visible.

8.5.22 In the south, the envelope is very limited, due to the mass of Ma On Shan (702mPD) which is just south of the Site and from the summit of which, it may be visible in good visibility.

8.5.23 To the south east, the development will be visible over much of Three Fathoms Cove. The eastern boundary of the visual envelope is defined by the line of hills between Kai Kung Shan (309mPD) and Mount Hollowes (372mPD).

8.5.24 Immediately north of the Site, a number of islands in Tolo Harbour partially screen it, so that there are significant areas within the ambit of the visual envelope, from which it cannot in fact be seen.

8.5.25 On a local scale the proposed development including the proposed Road D1 and the proposed connection to Road T7 will be clearly visible from parts of all adjacent residential sites and local road network within Ma On Shan. The presence of existing buildings and road structures will provide screening, and only those apartments and sections of roads directly fronting onto the site will be affected.

### *Key Views*

8.5.26 The locations of key views of the Site are identified below and in Figures 8.8 to 8.11. On the whole key views are notable for their 'scenic' qualities and are generally experienced by recreational receivers who deliberately go to a specific location in order to take in the view. Data on key views is set out in Table 8.5.2, below.

**Table 8.5.2**  
**Characteristics of Key Views**

Location	Type of View	View Valued Due To	Distance to Study Site	Figure No.
Ma On Shan Park / Ma On Shan Swimming Pool	Panorama / Seascape	Recreational node	approx. 1000m	8.8
Ma On Shan	Panorama	Remoteness, elevation	approx. 2000m	8.8
Chinese University/Tai Po Kau	Panorama / Seascape	Elevation	approx. 3500m	8.8
Tai Po Waterfront Park	Panorama / Seascape	Recreational node	approx. 6000m	8.8
Tai Mei Tuk	Panorama / Seascape	Remoteness, tranquillity	approx. 3500m	8.8
Monte Vista	Panorama / Seascape	Residential Site	100 - 1000	8.8

### *Visual Receivers*

8.5.27 The identity and character of the key visual receivers in this study are set out in Table 8.5.3 and their locations are shown in Figure 8.12.



**Table 8.5.3**  
**Identity and Characteristics of the Key Visual Receivers**

Ref	Location of receiver	No. of receivers at any given point in time	Type of receiver	Type of view	Duration of view	Distance to subject site (metres)
O1	Li Po Chun United World College	Few	Occupational	Vista	Periodic	200
O2	Chinese University	Many	Occupational	Panorama	Periodic	3500
O3	Tai Po Industrial Estate	Few	Occupational	Partial	Constant	5000-6000
C1	Chinese YMCA of HK Wu Kai Sha Youth Village	Very few	Recreational	Vista	Periodic	200
C2	Ma On Shan Park / Ma On Shan Swimming Pool	Many	Recreational	Vista	Periodic	1000
C3	Ma On Shan Country Park	Few	Recreational	Panorama	Constant	1000-3000
C4	Shing Mun Country Park/Tai Mo Shan Country Park	Very few	Recreational	Panorama	Intermittent	8000
C5	Tai Po Waterfront Park	Few	Recreational	Panorama	Intermittent	6000
C6	Plover Cove/Plover Cove Reservoir	Few	Recreational	Varies	Intermittent	2500-6000
C7	Plover Cove Country Park/Pat Sin Leng Country Park	Very few	Recreational	Panorama	Intermittent	6000-8000
C8	Sai Kung West Country Park	Very few	Recreational	Panorama	Intermittent	4000-8000
R1	To Tau/ Wu Kai Sha	Many	Residential	Partial	Constant	50
R2	Lee On Estate/Kam Lung Court	Many	Residential	Varies	Constant	300
R2A	Villa Athena	Many	Recreational	Varies	Constant	450
R2B	Saddle Ridge Garden	Many	Recreational	Varies	Constant	400
R2C	Villa Oceania/Bayshore Towers	Many	Recreational	Varies	Constant	900-1500
R3	Cheung Muk Tau/Sai O/Tseung Kwan Lei/Kwun Hang/Nai Chung	Few	Residential	Partial	Constant	200-1000
R4	Che Ha/Ma Kwu Lam/Tseng Tau/Nga Yu Tau	Many	Residential	Partial	Constant	1500-2000
R5	Ma Liu Shui/Kon Hang/Tsiu Hang/Tai Po Kau San Wai/Tai Po Kau Lo Wai/Lia Chi Hang/Ha Wong Yi Au/	Many	Residential	Panorama	Constant	3500-7000
R6	High-rise Developments in eastern Tai Po	Very many	Residential	Varies	Constant	7000-8000
R7	Sam Mun Tsai New Village/ Sha Lan/Shuen Wan Chan Uk/ Shuen Wan/ Wong Yue Tan/San Tau Kok/ A Shan Tseng Tau/ Tung Tsz/ Tsiu Lam	Many	Residential	Varies	Constant	3000-6000
R8	Lung Mei/Wong Chuk Tsuen/Ng Uk Tsuen	Few	Residential	Varies	Constant	4000
R9	Sham Chung/Yung Shue O	Very few	Residential	Panorama	Constant	4000
R10	Monte Vista	Many	Residential	Varies	Constant	50-300
T1	Sai Sha Road	Very few	Travelling	Partial	Intermittent	10-1000
T2	Ta Po Road	Few	Travelling	Panorama	Intermittent	4500-600
T3	Tolo Highway/KCR Railway	Many	Travelling	Panorama	Intermittent	3000-7000
T4	Ting Kok Road	Few	Travelling	Varies	Intermittent	4000-8000

## 8.6 Construction Impacts

### *Potential Sources of Impact during the Construction Phase*

8.6.1 The extent of works for the proposed development is indicated in the site layout plans, and again within the Landscape Mitigation Measures Plans Figures 8.21 and 8.22. They would involve the clearance and construction of development platforms for :

- an indoor recreation centre;
- two schools;
- housing development at Lok Wo Sha, Whitehead and Wu Kai Sha Station;
- recreational facilities and associated open car park and coach parking at Whitehead;
- drainage and other infrastructure elements; and
- Roads D1, L1 and L2 and slip road links to Road T7.

8.6.2 The proposed development would create varying levels of impact on the physical landscape and on the visual amenity of the surrounding areas during the construction stage. As the proposed Road D1, and its connection to the future Road T7 (Schedule 2 DPs) lie wholly within the area of the proposed development (Schedule 3 DP), their landscape and visual impact is addressed together. Potential impacts would result from the following:

- site clearance works involving the removal of existing vegetation;
- construction of site access; construction of temporary parking areas, on site accommodation and working areas;
- excavation works for buildings and infrastructure;
- haulage off-site of excavated materials;
- importation and storage of construction equipment and materials (including storage of existing topsoil for reinstatement works);
- the laying down of utilities, including water, drainage and power;
- building and infrastructure construction activities; and
- night lighting.

### *Nature and Magnitude of Landscape Impacts during the Construction Phase*

8.6.3 The magnitude of impacts on landscape resources is quantified in Table 8.6.1.

8.6.4 There would be a permanent impact on the site geology (solid and drift), through the formation of development platforms and access roads. However this is considered to be of low magnitude as much of the soil/rock have been cleared for the creation of detention centre.

- 8.6.5 There would be impact on existing topography due to the formation of platforms for tower blocks, earthworks for access road, although as the prominent knolls, beach areas and natural coastline would all be excluded from the development area, and thereby remain unaffected, the magnitude is considered to be small.
- 8.6.6 There would be a direct impact on areas of secondary woodland due to the construction of proposed new Road D1 around Starfish Bay. The magnitude of the impact on the natural woodland is considered to be intermediate. The rows of tree to the east of Road D1(E) will be retained in general. In addition about 2.66 ha of grassland will be lost as a result of the project and the magnitude of this would be small.
- 8.6.7 The areas of existing agricultural land would need to be completely cleared to make way for the construction of roads and building platforms. The magnitude of the change would, therefore, be large.
- 8.6.8 The development would result in the need to remove existing soils from within several areas within the study area, and the magnitude of the impact is considered to be intermediate.
- 8.6.9 There will be an impact during construction phase on all the LCAs in the Study Area. In the case of LCA1 - Former Whitehead Detention Centre and LCA 6 - Wu Kai Sha Station Development Site, impact magnitude will be large, with these areas being totally changed as a result of construction works, machinery and the building of structures.
- 8.6.10 In the case of other LCAs, such as LCA4, impacts will be intermediate. The partial re-grading of the site and the presence of tower cranes and partly completed structures will have the effect of introducing disturbance and significant human features into the LCA
- 8.6.11 In other LCAs (LCAs 2,3 and 5), there will be indirect impacts as a result of the construction works, although the Works themselves will not take place within the LCAs. The presence of machinery, and the construction of man-made structures will contrast unfavourably with the existing natural qualities of these LCAs. Resulting impacts will be intermediate.

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*Nature and Magnitude of Visual Impacts during the Construction Phase*

*Residential*

- 8.6.12 Residents of the villages of To Tau and Wu Kai Sha lie close to or along the south-western boundary of the site, and although partially screened by existing woodland blocks immediately outside the site, their views would be disturbed, at ground level by the construction of Road D1, and at height by the proposed development, with all views to north and east eventually becoming obstructed by high-rise buildings.
- 8.6.13 Residents of high-rise developments in eastern Ma On Shan, including those living in Lee On Estate/Kam Lung Court and those in Saddle Ridge Court, Villa Athena and Villa Oceania/Bayshore Towers, would have clear views down and across the site to the north-east, they would be affected by all elements of the proposed development as well as Road D1 and the link roads to Road T7. In the later stages of construction their views would be partially obstructed by the high-rise buildings, especially those in Lee On Estate/Kam Lung Court.
- 8.6.14 Residents of Monte Vista would have their existing views of Tolo Harbour progressively blocked (obstructed) during the construction of the Wu Ka Sha Station Development. Given the proximity of the construction works, the magnitude of change in their extensive views would be large and the visual impact substantial.
- 8.6.15 Residents of medium and low rise blocks at Cheung Muk Tau/ Sai O/ Tseung Kwan Lei/ Kwun Hang/ Nai Chung to the east of the site, would similarly be able to see construction activity on the link roads to Road T7 on the eastern side of the site, with the tower blocks of the proposed development at height behind. These ground level views would be partially screened by existing vegetation retained along the boundary of the site.
- 8.6.16 Low rise residential blocks at Che Ha/ Ma Kwu/Lam/ Tseng Tau/Nga Yu Tau would have similar but more oblique and longer distant views from the same direction, although only the high rise towers are likely to be clearly visible, with the link roads to Road T7 and low rise blocks being screened by intervening buildings and vegetation.
- 8.6.17 Low and medium rise residential settlements at on the hills above Tolo Harbour, at Ma Liu Shui/Kon Hang/ Tsiu Hang/ Tai Po Kau San Wai/ Tai Po Kau Lo Wai/ Lai Chi Hang/ Ha Wong Yi Au would have long range views of the proposed development, (but not specifically of the Schedule 2 DPs) across Tolo Harbour, where the construction activities would be clearly visible, but seen in the context of the surrounding urban development. High-rise developments in eastern Tai Po would have similar but much more distant and low level views.

- 8.6.18 Low level, long distance views would also be possible from the villages of Sam Mun Tsai New Village; Sha Lan; Shuen Wan Chan Uk; Shuen Wan; Wong Yue Tan; San Tau Kok; A Shan Tseng Tau; Tung Tsz; Tsiu Lam and Lung Mei; Wong Chuk Tsuen; and Ng Uk Tsuen, however the study site would be a small element in these extensive views and the construction activities, would not be easily distinguishable against the backdrop of urban Ma On Shan.
- 8.6.19 Low level, medium distance views would also be possible for residents of Sham Chung looking west across Three Fathoms Cove. The site would be seen in profile against the backdrop on distant hills, and the construction activities would be particularly noticeable in silhouette.

*Occupational Users*

- 8.6.20 Users of medium rise educational blocks at Li Po Chun United World College, would be able to see construction activity on the tower blocks at height, although ground level views of low rise buildings and the link roads to Road T7 would generally be screened.
- 8.6.21 Low and medium rise blocks at the Chinese University would have long range views of the development across Tolo Harbour, where the construction activities for the proposed development would be clearly visible, but seen in the context of the surrounding urban development.
- 8.6.22 Buildings in the Tai Po Industrial Estate would have similar but much more distant and low level views which would largely be unaffected.

*Recreational Users*

- 8.6.23 Recreational users of Chinese YMCA of HK Wu Kai Sha Youth Village, and further to the west, Ma On Shan Park / Ma On Shan Swimming Pool would have clear views of the construction activity, at ground level of low rise buildings within the proposed development and the Road D1, and at height of the high rise towers. These would be seen against the backdrop of Tolo Harbour and the distant hills. Views to north and east would eventually become obstructed by the buildings.
- 8.6.24 Recreational users of Ma On Shan Country Park would have clear but distant views down and across the site to the north-east against the wider view of Tolo Harbour. They would be affected by all elements of the proposed development including Road D1 and the link roads to Road T7, although these would be seen largely in plan rather than in elevation. Similar views would be available from some parts of Sai Kung West Country Park, but these would be at greater distance and be more oblique, and would

see the site more in the context of existing urban development at Ma On Shan.

- 8.6.25 Very long range views of the high rise towers would be possible for recreational users of Shing Mun Country Park; Tai Mo Shan Country Park; Tai Po Waterfront Park, and Plover Cove Country Park/Pat Sin Leng Country Park, but the scale of the site and the construction activities is likely to be too small for them to have any substantive impact on these views.
- 8.6.26 Recreational users of the Plover Cove / Plover Cove Reservoir, however, would have direct views from the dam of the construction of the high rise towers of the proposed development (but not Road D1 or the link roads to Road T7), although they would be seen against urban Ma On Shan, would still constitute a noticeable change in the quality of the view.

#### *Travellers*

- 8.6.27 Motorists / travellers on Sai Sha Road would have brief but close range of the development especially the loss of existing vegetation and the construction of Road D1, and the slip roads linking to Road T7. The commercial centre and the high rise towers of the proposed development at Wu Kai Sha Station and at Lok Wo Sha would become increasingly apparent.
- 8.6.28 Motorists / travellers on Tai Po Road / Tolo Highway / KCR Railway / Ting Kok Road, would have long range views of the high-rise towers on site, but the scale of the development and construction activities is likely to be too small for them to have any significant impact on these views.

#### *Mitigation Measures during the Construction Phase*

- 8.6.29 Landscape and visual mitigation measures which should be incorporated within the permanent landscape design to ameliorate impacts caused during the construction phase are described in Table 8.6.3, together with the proposed funding, implementation, and management agencies. The mitigation measures are illustrated in Figure 8.21.
- 8.6.30 Allowance for the measures listed should be made in the detailed design of the development (or any part thereof) and should be adopted from the commencement of construction and should be in place throughout the entire construction period.

#### *Prediction of Significance of Landscape Impacts during the Construction Phase*

- 8.6.31 The potential significance of the landscape impacts during the construction phase,

before and after mitigation, are described in Table 8.6.1 and illustrated in Figure 8.13A. This assessment follows the methodology outlined in Section 8.3.3 and assumes that the appropriate construction phase mitigation measures identified in Table 8.6.3 above would be implemented.

8.6.32 Impacts on LCAs during the construction phase are shown in Figure 8.13D.

***Prediction of Significance of Visual Impacts during the Construction Phase***

8.6.33 The potential significance of the residual visual impacts during the construction phase, before and after mitigation is provided in detail in Table 8.6.2 and illustrated in Figure 8.14A. This assessment follows the methodology outlined in Section 8.3.3 and assumes that the appropriate construction phase mitigation measures identified in Table 8.6.3 above would be implemented.

8.6.34 Illustrations of the likely impact on key views of the proposed development during construction are given in version B of the photomontages in Figures 8.15 to 8.20.

**Table 8.6.1**  
**Significance of Landscape Impacts during the Construction Phase**

Ref	Landscape receiver	Sensitivity to Change (Low, Medium, High)	Source of landscape impact	Extent of Loss	Magnitude of Change before Mitigation (Negligible, Small, Intermediate, Large)	Magnitude of Change After Mitigation (Negligible, Small, Intermediate, Large)	Impact Significance before Mitigation (Negligible, Slight, Moderate, Substantial)*	Impact Significance After Mitigation (Negligible, Slight, Moderate, Substantial)*
<b>LANDSCAPE RESOURCES</b>								
LR1	Geology (solid and Drift)	Low	Formation of development platforms for tower blocks, earthworks for access roads		Small (much of the soil/rock have been cleared for the creation of detention centre)	Small	Negligible	Negligible
LR2	Topography, including three prominent knolls	High	Re-grading of earthworks for development platforms and access roads		Small	Small	Slight	Slight
LR3	Beaches	High	Not affected	-	Nil	Nil	Nil	Nil
LR4	Natural Coastline	High	Not affected	-	Nil	Nil	Nil	Nil
LR5	Plantation Areas	Medium	Loss of some existing plantation area	8.19ha	Intermediate	Intermediate	Moderate	Moderate
LR6	Secondary Woodland	Medium	Loss of some existing secondary woodland	0.48ha	Intermediate	Intermediate	Moderate	Moderate
LR7	Agricultural Land	Medium	Loss of existing agricultural land	2.08ha	Large	Large	Moderate	Moderate
LR8	Existing Soils	Low	Loss of existing soils	approx area 6.0 ha.	Intermediate	Small	Slight	Negligible



Ref	Landscape receiver	Sensitivity to Change (Low, Medium, High)	Source of landscape impact	Extent of Loss	Magnitude of Change before Mitigation (Negligible, Small, Intermediate, Large)	Magnitude of Change After Mitigation (Negligible, Small, Intermediate, Large)	Impact Significance before Mitigation (Negligible, Slight, Moderate, Substantial)*	Impact Significance After Mitigation (Negligible, Slight, Moderate, Substantial)*
LR9	Grassland	Low	Formation of development platforms for tower blocks, earthworks for access roads	2.66ha	Small	Small	Negligible	Negligible
<b>LANDSCAPE CHARACTER</b>								
LCA1	Former Whitehead Detention Centre and Environs	Low	Direct and indirect - New tower blocks, earthworks, construction machinery, temporary loss of vegetation and access road	N/A	Large	Large	Slight	Slight/Slight
LCA2	Whitehead Peninsula Coast	High	Indirect - New tower blocks, earthworks, construction machinery, loss of vegetation and topography	N/A	Intermediate	Intermediate	Substantial	Substantial
LCA3	To Tau	Medium	Indirect - New tower blocks, earthworks, construction machinery, temporary loss of vegetation and access road	N/A	Intermediate	Intermediate	Moderate	Moderate

Ref	Landscape receiver	Sensitivity to Change (Low, Medium, High)	Source of landscape impact	Extent of Loss	Magnitude of Change before Mitigation (Negligible, Small, Intermediate, Large)	Magnitude of Change After Mitigation (Negligible, Small, Intermediate, Large)	Impact Significance before Mitigation (Negligible, Slight, Moderate, Substantial)*	Impact Significance After Mitigation (Negligible, Slight, Moderate, Substantial)*
LCA4	Wu Kai Sha	Medium	Direct and Indirect - New tower blocks, earthworks construction machinery, loss of vegetation and topography	N/A	Intermediate	Intermediate	Moderate	Moderate
LCA5	Starfish Bay	High	Indirect - New tower blocks, earthworks, construction machinery, temporary loss of vegetation and access road	N/A	Intermediate	Intermediate	Substantial	Substantial
LCA6	Wu Kai Sha Station Development Site	Low	Direct and Indirect- New tower blocks, earthworks, construction machinery, temporary loss of vegetation and access road	N/A	Large	Large	Slight	Slight

\* Adverse Impacts unless otherwise stated

**Table 8.6.2**  
**Significance of Visual Impacts During Construction Phase**

VSR	Key Visually Sensitive Receiver (VSR)	Source(s) of Impacts	Distance Between VSR and Source (Metres)	Receptor Sensitivity (Low, Medium, High)	Magnitude of Change before Mitigation Measures (Negligible, Small, Intermediate, Large)	Magnitude of Change after Mitigation Measures (Negligible, Small, Intermediate, Large)	Impact Significance before Mitigation Measures (Negligible, Slight, Moderate, Substantial)*	Impact Significance after Mitigation Measures (Negligible, Slight, Moderate, Substantial)*
<b>RESIDENTIAL</b>								
R1	To Tau/ Wu Kwai Sha	earthworks, construction activity new buildings and infrastructure	50	High	Intermediate	Intermediate	Substantial	Substantial
R2	Lee On Estate/Kam Lung Court	earthworks, construction activity new buildings and infrastructure	300	Medium	Large	Large	Substantial	Substantial
R2A	Villa Athena	earthworks, construction activity new buildings and infrastructure	450	Medium	Intermediate	Intermediate	Moderate	Moderate
R2B	Saddle Ridge Garden	earthworks, construction activity new buildings and infrastructure	400	Medium	Intermediate	Intermediate	Moderate	Moderate
R2C	Villa Oceania/Ma On Shan Centre/Bayshore Towers	earthworks, construction activity new buildings and infrastructure	900-1500	Medium	Small	Small	Moderate	Moderate
R3	Cheung Muk Tau/ Sai O/ Tseung Kwan Lei/ Kwun Hang/ Nai Chung	earthworks, construction machinery, new buildings	200 - 1000	Medium	Intermediate	Intermediate	Moderate	Moderate
R4	Che Ha/ Ma Kwu/Lam/ Tseng Tau/Nga Yu Tau	construction machinery, new buildings	1500 - 2000	Low	Small	Small	Slight	Slight
R5	Ma Liu Shui/Kon Hang/ Tsiu Hang/ Tai Po Kau San Wai/ Tai Po Kau Lo Wai/ Lai Chi Hang/ Ha Wong Yi Au	earthworks, construction machinery and new buildings	3500 - 7000	Low	Small	Small	Slight	Slight

VSR	Key Visually Sensitive Receiver (VSR)	Source(s) of Impacts	Distance Between VSR and Source (Metres)	Receptor Sensitivity (Low, Medium, High)	Magnitude of Change before Mitigation Measures (Negligible, Small, Intermediate, Large)	Magnitude of Change after Mitigation Measures (Negligible, Small, Intermediate, Large)	Impact Significance before Mitigation Measures (Negligible, Slight, Moderate, Substantial)*	Impact Significance after Mitigation Measures (Negligible, Slight, Moderate, Substantial)*
R6	High-rise developments in eastern Tai Po	earthworks, construction machinery and new buildings	7000 - 8000	Low	Negligible	Negligible	Negligible	Negligible
R7	Sam Mun Tsai New Village/ Sha Lan/ Shuen Wan Chan Uk/ Shuen Wan/Wong Yue Tan/ San Tau Kok/ A Shan Tseng Tau/ Tung Tsz/Tsiu Lam	earthworks, construction machinery, new buildings and access roads	3000 - 6000	Low	Negligible	Negligible	Negligible	Negligible
R8	Lung Mei/Wong Chuk Tsuen/ Ng Uk Tsuen	earthworks, construction machinery and new buildings	4000	Low	Negligible	Negligible	Negligible	Negligible
R9	Sham Chung	earthworks, construction machinery and new buildings	4000	Low	Negligible	Negligible	Negligible	Negligible
R10	Monte Vista	earthworks, construction machinery and new buildings	50-300	High	Large	Large	Substantial	Substantial
<b>OCCUPATIONAL</b>								
O1	Li Po Chun United World College	Earthworks, infrastructure works, construction machinery and new buildings	70m	Medium	Intermediate	Intermediate	Moderate	Moderate
O2	Chinese University	Earthworks, construction machinery and new buildings	3500	Low	Small	Small	Slight	Slight
O3	Tai Po Industrial Estate	Earthworks, construction machinery and new buildings	5000	Low	Negligible	Negligible	Negligible	Negligible
<b>RECREATIONAL</b>								
C1	Chinese YMCA of HK Wu Kai Sha Youth Village	Earthworks, infrastructure works, construction machinery, new buildings	200	Medium	Large	Large	Moderate	Moderate
C2	Ma On Shan Park/ Ma On Shan Swimming Pool	Earthworks, construction machinery, new buildings	1000	Medium	Intermediate	Intermediate	Moderate	Moderate

VSR	Key Visually Sensitive Receiver (VSR)	Source(s) of Impacts	Distance Between VSR and Source (Metres)	Receptor Sensitivity (Low, Medium, High)	Magnitude of Change before Mitigation Measures (Negligible, Small, Intermediate, Large)	Magnitude of Change after Mitigation Measures (Negligible, Small, Intermediate, Large)	Impact Significance before Mitigation Measures (Negligible, Slight, Moderate, Substantial)*	Impact Significance after Mitigation Measures (Negligible, Slight, Moderate, Substantial)*
C3	Ma On Shan Country Park	Earthworks, construction machinery, new buildings and access road	1000 - 3000	Low	Small	Small	Slight	Slight
C4	Shing Mun Country Park/Tai Mo Shan Country Park	Earthworks, construction machinery, new buildings	8000	Low	Negligible	Negligible	Negligible	Negligible
C5	Tai Po Waterfront Park	Earthworks, construction machinery and new buildings	6000	Low	Small	Small	Slight	Slight
C6	Plover Cove/Plover Cove Reservoir	Earthworks, construction machinery and new buildings	2500 - 6000	Medium	Small	Small	Slight	Slight
C7	Plover Cove Country Park/Pat Sin Leng Country Park	Earthworks, construction machinery and new buildings	6000 - 8000	Low	Small	Small	Slight	Slight
C8	Sai Kung West Country Park	Earthworks, construction machinery and new buildings	4000 - 8000	Low	Negligible	Negligible	Negligible	Negligible
<b>TRAVELLERS</b>								
T1	Sai Sha Road	Earthworks, construction machinery and new buildings and access road	10 - 1000	Medium	Small	Small	Slight	Slight
T2	Tai Po Road	Earthworks, construction machinery and new buildings	4500 - 6000	Low	Negligible	Negligible	Negligible	Negligible
T3	Tolo Highway/KCR Railway	Earthworks, construction machinery and new buildings	3000 - 7000	Medium	Small	Small	Slight	Slight
T4	Ting Kok Road	Earthworks, construction machinery and new buildings	4500 - 8000	Low	Negligible	Negligible	Negligible	Negligible

\* Adverse Impacts unless otherwise stated

**Table 8.6.3**  
**Proposed Construction Phase Mitigation Measures**

ID No.	Mitigation Measure	Funding Agency	Implementation Agency	Management Agency
CM1	Retention and protection of existing beaches at Starfish Bay and Wu Kai Sha. Physical measures implemented to prevent access. Regular checks should be carried out to ensure that the work site boundaries are not exceeded, hoarding is properly maintained and that no damage is being caused to the these areas.	TDD	TDD	TDD
CM2	Retention and protection of existing Natural Coastal topography and rock formations. Physical measures implemented to prevent access. Regular checks to be carried out to ensure that the work site boundaries are not exceeded, hoarding is properly maintained and that no damage is being caused to the these areas.	TDD / Developer	TDD / Developer	TDD / Developer
CM3	Retention and protection of existing Pine Woodland (7.05ha). Physical measures implemented to prevent access. Regular checks to be carried out to ensure that the work site boundaries are not exceeded, hoarding is properly maintained and that no damage is being caused to the these areas.	TDD / Developer	TDD / Developer	TDD / Developer
CM4	Minimisation the extent cutting into the areas of secondary woodland. 1.98ha of them is to be preserved. Extent of clearance to be agreed and marked on site. Regular checks to be carried out to ensure that the work site boundaries are not exceeded, hoarding is properly maintained and that no damage is being caused.	TDD / Developer	TDD / Developer	TDD / Developer
CM5	Decorative hoarding along southern boundary of the site, beaches at Starfish Bay and Wu Kai Sha and around To Tau and Wu Kai Sha Village areas.	TDD / Developer	TDD / Developer	TDD / Developer
CM6	Transplanting of trees that need to be removed and that stand a high chance of successfully re-establishing where feasible.	TDD / Developer	TDD / Developer	TDD / Developer
CM7	Topsoil stripped and stored for re-use. in the construction of the soft landscape works.	TDD / Developer	TDD / Developer	TDD / Developer
CM8	Control of night-time lighting.	TDD / Developer	TDD / Developer	TDD / Developer
CM9	Grass hydroseeding of slopes and development platforms as soon as they are completed.	TDD / Developer	TDD / Developer	TDD / Developer

## 8.7 Operational Impacts

### *Potential Sources of Impacts in the Operational Phase*

8.7.1 The extent of works for the proposed development at Whitehead is indicated in the site layout plans, and again within the Landscape Mitigation Measures Plans Figures 8.21 and 8.22. The sources of impacts of the project at the operational stage would be:

- residential development at Lok Wo Sha;
- residential development at Whitehead;
- residential development at Wu Kai Sha Station;
- recreational facilities at Whitehead including : visitor/ heritage/ecological centre; water recreation centre land-based elements (lectures, hostel etc. ); themed restaurant park; visitor information centre; botanical garden; cycle park and track; waterfront footpath around Whitehead; open coach parking;
- one primary school and one secondary school at Whitehead;
- Roads D1, L1 and L2 and the elevated slip roads linking to Road T7, and the traffic that they support; and
- footbridges, vehicular bridge, retaining walls, site drainage and other infrastructure elements.

#### *Nature of Landscape Impacts in the Operational Phase*

- 8.7.2 The impact on the site geology (solid and drift), through the development of buildings and roads would be permanent and is considered to be of low magnitude. Similarly the impact on existing topography due to the development would be permanent, and again the magnitude is considered to be small.
- 8.7.3 As the extent of the development would be the same as the area of clearance during the construction phase, the magnitude of the direct impact on areas of secondary woodland would remain as intermediate. Similarly the magnitude of impact on areas of existing agricultural land would remain as large.
- 8.7.4 The stripping and re-use of existing soils from within several areas within the study area, would mean the magnitude of the impact on this landscape resource might be considered to be small by completion of the development.
- 8.7.5 There will be a negative impact during operational phase on most of the LCAs in the Study Area. However, in the case of LCA1 - Former Whitehead Detention Centre and LCA 6 - Wu Kai Sha Station Development Site, these landscapes are currently so degraded and incoherent that the new development will not have a very significant impact on their character and after maturing of mitigation measures, these landscapes will have a different character so that the significance of impacts on landscape character will be negligible.
- 8.7.6 In the case of other LCAs, such as LCA4, there will be direct and indirect impacts from loss of vegetation and the presence of roads and built structures. This will result

in significant new features in the landscape and long term impacts will be significant.

- 8.7.7 In other LCAs (LCAs 2,3 and 5), there will be indirect impacts as a result of the project works, such as the presence of new tower blocks, although the Works themselves will not take place within the LCAs. The presence of these man-made structures so close to these landscapes will contrast unfavourably with the existing natural qualities of these LCAs and resulting impacts will be significant, especially on LCA2 (Whitehead Peninsula Coast) and on LCA5 (Starfish Bay).

### *Nature of Visual Impacts in the Operational Phase*

#### *Residential*

- 8.7.8 All views to north and east of the villages of To Tau and Wu Kai Sha would be obstructed by proposed the buildings resulting in considerable permanent change to the views.
- 8.7.9 Residents of Monte Vista would have their existing views of Tolo Harbour fully obstructed by the Wu Kai Sha Station Development. Given the proximity and mass of the proposed development, the magnitude of change in the view would be large and the impact substantial. The proposed mitigation measures are not likely to reduce this significantly.
- 8.7.10 Views of residents of high-rise developments in eastern Ma On Shan, would similarly be partially obstructed by the buildings, especially those living in Lee On Estate/Kam Lung Court, although for other residents such as those in Saddle Ridge Court, Villa Athena and Villa Oceania/Bayshore Towers, this would constitute a smaller change in their more expansive view. The landscape treatment of the site and architectural treatment of the buildings is likely to tone down their impact slightly, but there would be a considerable permanent change in their views.
- 8.7.11 Views of residents of medium and low rise blocks at Cheung Muk Tau; Sai O; Tseung Kwan Lei; Kwun Hang; Nai Chung to the east of the site, would similarly be obstructed. This is likely to result in only a minor change in their views, although the architectural treatment of the buildings is not likely to tone down the impact further. Planting along the site boundary would however reduce the impact on low level views.
- 8.7.12 The development would be clearly visible long range views of the development across Tolo Harbour from the low and medium rise residential settlements at on the hills above Tolo Harbour, at Ma Liu Shui/Kon Hang/ Tsiu Hang/ Tai Po Kau San Wai/ Tai Po Kau Lo Wai/ Lai Chi Hang/ Ha Wong Yi Au, but seen in the context of the surrounding urban development, the change in view is likely to be only slight, although the proposed architectural treatment of the buildings would not reduce this



significantly.

- 8.7.13 Upon completion the new high-rise buildings would be seen in low level, medium distance views from Sham Chung across Three Fathoms Cove, in silhouette and against the sky and a backdrop of distant hills. Resulting in a slight permanent change in their expansive views. The proposed architectural treatment of the buildings would not reduce this significantly.
- 8.7.14 The noise barriers / semi-enclosure for Road T7 are covered by EPAEP-119/2001 and are under construction. Some amendments have been proposed under the Road T7 project and are being considered by EPD. Semi-enclosure has now been proposed along the slip road immediately to the east of Wu Kai Sha Station Development. The semi-enclosure is much lower in elevation than the future residential flats of the Wu Kai Sha Station Development and would not pose any significant visual impact on the residents. A cross-section showing the relative positive of the Wu Kai Sha Station Development and the adjacent Road T7 slip road is shown in Annex H.

#### *Occupational Users*

- 8.7.15 The tower blocks would obstruct views to the west of users of medium rise educational blocks at Li Po Chun United World College, resulting in a medium change in their view. Although the architectural treatment of the buildings is not likely to tone down the impact further as they would be seen in silhouette and against the sky and a backdrop of distant hills, planting along the site boundary would reduce the impact on low level views.
- 8.7.16 There would be a slight but permanent change in the views from low and medium rise blocks at the Chinese University where the new buildings would be seen in the context of the surrounding urban development. on the west side of Tolo Harbour.

#### *Recreational Users*

- 8.7.17 There would be significant changes in the views for recreational users of Chinese YMCA of HK Wu Kai Sha Youth Village, and further to the west, Ma On Shan Park / Ma On Shan Swimming Pool where the new buildings would obstruct views to north and east. Architectural treatment of the buildings will tone down the impact, and planting along the site boundary would further mitigate the impact on low level views.
- 8.7.18 There would be slight changes in the views for recreational users of Ma On Shan Country Park where the new buildings would push the extent of urban development further to the north. Current views of the coastline around the Whitehead site would be lost, locally changing the defining elements for Tolo Harbour from a natural edge to an urban one. Planting within the site would mitigate the impact to some extent but

permanent change in view is predicted.

- 8.7.19 Recreational users of the Plover Cove / Plover Cove Reservoir, would have direct views from the dam of the new buildings, and although seen against urban Ma On Shan, would still constitute a permanent change in the quality of the view. Architectural treatment of the buildings will tone down the impact, and planting along the site boundary would further mitigate the impact on low level views to some extent.

#### *Travellers*

- 8.7.20 Permanent changes in brief, close range views to the north are anticipated for motorists / travellers on Sai Sha Road. Architectural treatment of the road structures of Road D1 and the elevated deck, pier and abutment structures of the slip roads linking to Road T7, as well as the treatment of boundary elements, and high rise towers and screen planting on the southern side of the site would reduce the scale of the change.

#### *Mitigation Measures During the Operation Phase*

- 8.7.21 Landscape and visual mitigation measures which should be incorporated within the permanent landscape design to ameliorate impacts caused during the operation phase are described in Table 8.7.3, together with the proposed funding, implementation, and management and maintenance agencies. The mitigation measures are illustrated in Figure 8.22.
- 8.7.22 Allowance for the measures listed should be made in the detailed design of the development (or any part thereof) and should be fully implemented as part of the construction works so that they are in place at the date of completion. However, it should be noted that the full effect of the soft landscape mitigation measures (woodland tree and shrub planting) would not be appreciated for several years.

#### *Prediction of Significance of Landscape Impacts in the Operation Phase*

- 8.7.23 An assessment of the potential significance of the landscape impacts during the operational phase, before and after mitigation is provided in Table 8.7.1, and illustrated in Figure 8.13B. This follows the methodology outlined in Section 8.3.3 and assumes that the appropriate mitigation measures identified in Table 8.7.3 had been fully implemented.
- 8.7.24 Impacts on LCAs during the construction phase are shown in Figures 8.13E and F.

#### *Prediction of Significance of Visual Impacts in the Operation Phase*

- 8.7.25 An assessment of the potential significance of the visual impacts during the operational phase, before and after mitigation is provided in Table 8.7.2, and illustrated in Figure 8.14B. This follows the methodology outlined in Section 8.3.3 and assumes that the appropriate mitigation measures identified in Table 8.7.3 had been fully implemented.
- 8.7.26 Illustrations of the likely impact on key views of the proposed development at Year 1 are given in version C of the photomontages in Figures 8.15 to 8.20.

**Table 8.7.1**  
**Significance of Landscape Impacts in Operational Phase**

Ref	Landscape Receiver	Source of landscape impact	Sensitivity to Change (Low, Medium, High)	Extent of Loss	Magnitude of Change before Mitigation (Negligible, Small, Intermediate, Large)	Magnitude of Change After Mitigation (Day 1) (Negligible, Small, Intermediate, Large)	Magnitude of Change After Mitigation (Year 10) (Negligible, Small, Intermediate, Large)	Impact Significance before Mitigation (Negligible, Slight, Moderate, Substantial)*	Impact Significance After Mitigation (Day 1) (Negligible, Slight, Moderate, Substantial)*	Impact Significance Residual Impact (Year 10) (Negligible, Slight, Moderate, Substantial)*
<b>LANDSCAPE RESOURCES</b>										
LR1	Geology (solid and Drift)	Formation of development platforms for tower blocks, earthworks for access roads	Low	-	Small	Small	Small	Negligible	Negligible	Negligible
LR2	Topography, including three prominent knolls	Regarding of earthworks for development platforms and access roads	High	-	Small	Small	Small	Slight	Slight	Slight
LR3	Beaches	Not affected	High	-	Nil	Nil	Nil	Nil	Nil	Nil
LR4	Natural Coastline	Not affected	High	-	Nil	Nil	Nil	Nil	Nil	Nil
LR5	Plantation Area	Loss of some existing plantation area	Medium	8.19ha	Intermediate	Intermediate	Small	Moderate	Moderate	Slight
LR6	Secondary Woodland	Loss of some existing secondary woodland	Medium	0.48ha	Intermediate	Intermediate	Small	Moderate	Moderate	Slight
LR7	Agricultural Land	Loss of existing agricultural land	Medium	2.08 ha	Large	Large	Large	Moderate	Moderate	Moderate
LR8	Existing Soils	Loss of existing soils	Low	approx area 6.0 ha.	Small	Small	Small	Negligible	Negligible	Negligible

Ref	Landscape Receiver	Source of landscape impact	Sensitivity to Change (Low, Medium, High)	Extent of Loss	Magnitude of Change before Mitigation (Negligible, Small, Intermediate, Large)	Magnitude of Change After Mitigation (Day 1) (Negligible, Small, Intermediate, Large)	Magnitude of Change After Mitigation (Year 10) (Negligible, Small, Intermediate, Large)	Impact Significance before Mitigation (Negligible, Slight, Moderate, Substantial)*	Impact Significance After Mitigation (Day 1) (Negligible, Slight, Moderate, Substantial)*	Impact Significance Residual Impact (Year 10) (Negligible, Slight, Moderate, Substantial)*
LR9	Grassland	Low	Formation of development platforms for tower blocks, earthworks for access roads	2.66ha	Small	Small	Negligible	Negligible	Negligible	Negligible
<b>LANDSCAPE CHARACTER</b>										
LCA1	Former Whitehead Detention Centre and Environs	Direct and indirect - New tower blocks, temporary loss of vegetation and access road	Low	N/A	Large	Large	Large	Slight	Negligible	Negligible
LCA2	Whitehead Peninsula Coast	Indirect - New tower blocks,	High	N/A -	Intermediate	Intermediate	Small	Substantial	Substantial	Moderate
LCA3	To Tau	Indirect - New tower blocks,	Medium	- N/A	Intermediate	Small	Small	Moderate	Moderate	Slight
LCA4	Wu Kai Sha	Direct and Indirect - New tower blocks, loss of vegetation	Medium	N/A	Intermediate	Intermediate	Small	Moderate	Moderate	Slight
LCA5	Starfish Bay	Indirect - New tower blocks, and access road	High	N/A	Intermediate	Intermediate	Small	Substantial	Substantial	Moderate
LCA6	Wu Kai Sha Station Development Site	Direct and Indirect - New tower blocks, earthworks and access road	Low	N/A	Large	Small	Negligible	Slight	Negligible	Negligible

\* Adverse Impacts unless otherwise stated

**Table 8.7.2**  
**Significance of Visual Impacts in the Operation Phase**

VSR	Key Visually Sensitive Receiver (VSR)	Source(s) of Impacts on VSR	Distance Between VSR and Source	Receptor Sensitivity (Low, Medium, High)	Magnitude of Change before Mitigation (Negligible, Small, Intermediate, Large)	Magnitude of Change After Mitigation (Day 1) (Negligible, Small, Intermediate, Large)	Magnitude of Change After Mitigation (Year 10) (Negligible, Small, Intermediate, Large)	Impact Significance before Mitigation (Negligible, Slight, Moderate, Substantial)*	Impact Significance After Mitigation (Day 1) (Negligible, Slight, Moderate, Substantial)*	Impact Significance Residual Impact (Year 10) (Negligible, Slight, Moderate, Substantial)*
<b>RESIDENTIAL</b>										
R1	To Tau/ Wu Kwai Sha	new buildings and access roads	50	High	Intermediate	Intermediate	Intermediate	Substantial	Moderate	Moderate
R2	Lee On Estate/Kam Lung Court	new buildings and access roads	300	Medium	Large	Large	Large	Substantial	Substantial	Moderate
R2A	Villa Athena	new buildings and access roads	450	Medium	Intermediate	Intermediate	Intermediate	Moderate	Moderate	Slight
R2B	Saddle Ridge Garden	new buildings and access roads	400	Medium	Intermediate	Intermediate	Intermediate	Moderate	Moderate	Slight
R2C	Villa Oceania/Ma On Shan Centre/Bayshore Towers	new buildings and access roads	900-1500	Medium	Small	Small	Small	Moderate	Moderate	Slight
R3	Cheung Muk Tau/ Sai O/ Tseung Kwan Lei/ Kwun Hang/ Nai Chung	new buildings and access roads	200 - 1000	Medium	Intermediate	Intermediate	Small	Moderate	Moderate	Slight
R4	Che Ha/ Ma Kwu/Lam/ Tseng Tau/Nga Yu Tau	new buildings	1500 - 2000	Low	Small	Small	Negligible	Slight	Slight	Negligible

VSR	Key Visually Sensitive Receiver (VSR)	Source(s) of Impacts on VSR	Distance Between VSR and Source	Receptor Sensitivity (Low, Medium, High)	Magnitude of Change before Mitigation (Negligible, Small, Intermediate, Large)	Magnitude of Change After Mitigation (Day 1) (Negligible, Small, Intermediate, Large)	Magnitude of Change After Mitigation (Year 10) (Negligible, Small, Intermediate, Large)	Impact Significance before Mitigation (Negligible, Slight, Moderate, Substantial)*	Impact Significance After Mitigation (Day 1) (Negligible, Slight, Moderate, Substantial)*	Impact Significance Residual Impact (Year 10) (Negligible, Slight, Moderate, Substantial)*
R5	Ma Liu Shui/Kon Hang/ Tsiu Hang/ Tai Po Kau San Wai/ Tai Po Kau Lo Wai/ Lai Chi Hang/ Ha Wong Yi Au	new buildings	3500 - 7000	Low	Small	Small	Small	Slight	Slight	Slight
R6	High-rise developments in eastern Tai Po	new buildings	7000 - 8000	Low	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
R7	Sam Mun Tsai New Village/ Sha Lan/Shuen Wan Chan Uk/ Shuen Wan/ Wong Yue Tan/ San Tau Kok/ A Shan Tseng Tau/ Tung Tsz/Tsiu Lam	new buildings	3000 - 6000	Low	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
R8	Lung Mei/Wong Chuk Tsuen/ Ng Uk Tsuen	new buildings	4000	Low	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
R9	Sham Chung	new buildings	4000	Low	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
R10	Monte Vista	New building	50-300	High	Large	Large	Large	Substantial	Substantial	Substantial
<b>OCCUPATIONAL</b>										
O1	Li Po Chun United World College	new buildings and access roads	200m	Medium	Intermediate	Intermediate	Small	Moderate	Moderate	Slight
O2	Chinese University	new buildings	3500	Low	Small	Small	Small	Slight	Slight	Slight
O3	Tai Po Industrial Estate	new buildings	5000	Low	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible

VSR	Key Visually Sensitive Receiver (VSR)	Source(s) of Impacts on VSR	Distance Between VSR and Source	Receptor Sensitivity (Low, Medium, High)	Magnitude of Change before Mitigation (Negligible, Small, Intermediate, Large)	Magnitude of Change After Mitigation (Day 1) (Negligible, Small, Intermediate, Large)	Magnitude of Change After Mitigation (Year 10) (Negligible, Small, Intermediate, Large)	Impact Significance before Mitigation (Negligible, Slight, Moderate, Substantial)*	Impact Significance After Mitigation (Day 1) (Negligible, Slight, Moderate, Substantial)*	Impact Significance Residual Impact (Year 10) (Negligible, Slight, Moderate, Substantial)*
<b>RECREATIONAL</b>										
C1	Chinese YMCA of HK Wu Kai Sha Youth Village	new buildings and access roads	200	Medium	Intermediate	Intermediate	Small	Moderate	Moderate	Slight
C2	Ma On Shan Park / Ma On Shan Swimming Pool	new buildings	1000	Medium	Intermediate	Intermediate	Small	Moderate	Moderate	Slight
C3	Ma On Shan Country Park	new buildings and access roads	1000 - 3000	Low	Small	Small	Small	Slight	Slight	Slight
C4	Shing Mun Country Park/Tai Mo Shan Country Park	new buildings	8000	Low	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
C5	Tai Po Waterfront Park	new buildings	6000	Low	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
C6	Plover Cove/Plover Cove Reservoir	new buildings	2500 - 6000	Medium	Small	Small	Small	Slight	Slight	Slight
C7	Plover Cove Country Park/Pat Sin Leng Country Park	new buildings	6000 - 8000	Low	Small	Small	Small	Negligible	Negligible	Negligible
C8	Sai Kung West Country Park	new buildings	4000 - 8000	Low	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
<b>TRAVELLERS</b>										
T1	Sai Sha Road	new buildings and access roads	10 - 1000	Medium	Small	Small	Small	Slight	Slight	Slight
T2	Tai Po Road	new buildings	4500 - 6000	Low	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible



VSR	Key Visually Sensitive Receiver (VSR)	Source(s) of Impacts on VSR	Distance Between VSR and Source	Receptor Sensitivity (Low, Medium, High)	Magnitude of Change before Mitigation (Negligible, Small, Intermediate, Large)	Magnitude of Change After Mitigation (Day 1) (Negligible, Small, Intermediate, Large)	Magnitude of Change After Mitigation (Year 10) (Negligible, Small, Intermediate, Large)	Impact Significance before Mitigation (Negligible, Slight, Moderate, Substantial)*	Impact Significance After Mitigation (Day 1) (Negligible, Slight, Moderate, Substantial)*	Impact Significance Residual Impact (Year 10) (Negligible, Slight, Moderate, Substantial)*
T3	Tolo Highway/KCR Railway	new buildings	3000 - 7000	Medium	Small	Small	Small	Slight	Slight	Slight
T4	Ting Kok Road	new buildings	4500 - 8000	Low	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible

\* Adverse Impacts unless otherwise stated

**Table 8.7.3**  
**Proposed Permanent Mitigation Measures**

ID No.	Mitigation Measure	Funding Agency	Implem'n Agency	Managem't Agency	Mainten'ce Agency
OM1	Building height and development profile designed to compliment the existing topography and urban forms, in key views. Taller larger scale buildings to be set to the southern side of the site close to Ma On Shan hills and alongside existing high rise residential estates. The northern site should be retained for low-rise development.	Developer	Developer	-	-
OM2	Layout of the proposed development to avoid disturbance of existing Pine Coastal Woodland. 7.05ha of plantation preserved.	TDD / Developer	TDD / Developer	-	-
OM3	Layout of the proposed development to minimise disturbance of existing Secondary Woodland. 1.98 ha of secondary woodland preserved.	TDD / Developer	TDD / Developer	-	-
OM4	Layout of the proposed development to avoid disturbance of existing knolls and grave sites within the site.	TDD	TDD	-	-
OM5	Layout of the proposed development to avoid disturbance of existing beaches and natural coastline.	TDD / Developer	TDD / Developer	-	-
OM6	The external appearance of building blocks should be carefully detailed in terms of form, colour and finishes such that they are visually integrated as much as possible into the surrounding landscape. The form and surface detailing of these structures should be carefully considered to reduce their apparent mass, and potential glare.	Developer	Developer	Developer	Developer
OM7	The new road structures, elevated viaducts, abutments, and retaining walls should be received sensitive architectural and chromatic treatment.	TDD	TDD	HyD	HyD
OM8	Planting wide canopied shade trees along roadsides to provide shade and greenery. High quality hard landscape treatment of footpaths areas.	TDD	TDD	HyD	LCSD
OM9	Planting of wide canopied shade trees, ornamental flowering trees and shrubs, and high quality hard landscape treatment of pedestrian corridors (in public areas or private development) to provide shade for pedestrians and an attractive green appearance from surrounding view points.	TDD / Developer	TDD / Developer	LCSD / Developer	LCSD / Developer
OM10	Hard and soft landscape treatment of open areas within residential development lots areas to provide shade and shelter and a green appearance from surrounding viewpoints.	Developer	Developer	Developer	Developer
OM11	Landscape treatment of recreational land uses with extensive tree planting throughout the areas to provide shade and shelter and a green appearance from surrounding view points and screen ground level activity in views from the Harbour. The areas include 3.5ha in Botanical Garden and 2.23 ha in other areas of Whitehead Site 1 to also compensate for woodland/plantation vegetation loss during construction. Links should be made to surrounding recreational sites, including the proposed Ma On Shan Waterfront	Developer	Developer	LCSD	LCSD

ID No.	Mitigation Measure	Funding Agency	Implem'n Agency	Managem't Agency	Mainten'ce Agency
	Promenade.				
OM12	Landscape treatment of car and coach parking areas with planting of wide canopied trees throughout the site to provide shade and shelter, and ornamental flowering trees and shrubs to a green appearance from surrounding areas.	Developer	Developer	LCSD	LCSD
OM13	Woodland tree and shrub planting should be undertaken to screen existing village settlement areas of To Tau and Wu Kai Sha.	TDD	TDD	HyD	LCSD
OM14	Roadside woodland tree/shrub planting as a buffer / screen along Sai Sha Road or other proposed public / private roads within the proposed development whenever possible.	TDD / Developer	TDD / Developer	HyD / Developer	LCSD / Developer
OM15	Secondary woodland planting (1.07ha) at the Government land near the proposed IRC to compensate for woodland/plantation vegetation lost during construction.	TDD	TDD	AFCD	AFCD
OM16	Secondary woodland planting proposed at the woodland extension (1.87ha) within the Lok Who Sha Development to compensate for woodland/plantation vegetation lost during construction.	Developer	Developer	Developer	Developer
OM17	Woodland tree and shrub planting to screen ecological habitat and recreational areas at the existing beaches at Starfish Bay and Wu Kai Sha from the development.	TDD	TDD	HyD	LCSD

## 8.8 Residual Impacts

8.8.1 Residual impacts are those that persist after the mitigation planting works have become fully effective. This is assumed to be at a point 10 (ten) years after the date of completion. The residual impacts represent the long term effect on the landscape and visual context of the area that would be a direct consequence of the proposed development.

### *Prediction of Significance of Residual Landscape Impacts*

8.8.2 The significance of residual landscape impacts is provided in Table 8.7.1, and illustrated in Figure 8.13C. This assumes that the appropriate mitigation measures identified in Table 8.7.3 would be implemented, and that the full effect of the soft landscape mitigation measures had been realised.

### *Prediction of Significance of Residual Visual Impacts*

8.8.3 The significance of residual visual impacts is provided in Table 8.7.2, and illustrated in Figure 8.14C. This assumes that the appropriate mitigation measures identified in Table 8.7.3 would be implemented, and that the full effect of the soft landscape mitigation measures had been realised. Illustrations of the likely impact on key views

of the proposed development at Year 10 are given in version D of the photomontages in Figures 8.15 to 8.20.

## 8.9 Conclusions

8.9.1 The proposed development would result in significant impacts on existing landscape resources on site, principally areas of plantation, secondary woodland, and existing natural soils. These would need to be cleared to make way for the proposed development, although around the headland the proposed land uses would be able to incorporate existing woodland and soils into the design, thereby reducing actual losses. Landscape mitigation measures include extensive woodland and landscape planting and the re-use of soil materials from site, and these would effectively reduce long term impacts on woodland/plantation and soils to slight levels.

8.9.2 Impacts on agricultural land (moderate impact) would be permanent as it would not be practical to re-provision such an element within the nature of the proposed development.

8.9.3 Impacts on key affected landscape resources are quantified below in Table 8.9.1:

**Table 8.9.1**  
**Quantification Key Landscape Resources Affected by Works**

Key Landscape Resource	Loss	Mitigation/ Compensation	Net Loss/Gain
Plantation	8.19ha	8.19 ha	None
Secondary Woodland	0.48ha	0.48 ha	None
Agricultural land	2.08ha	None.	2.08 ha
Grassland	2.66ha	None	2.66 ha

8.9.4 Impacts on the landscape character of the landscape will vary dramatically. The indirect impacts on the natural and tranquil qualities of the Whitehead Peninsula Coast (LCA2) and on Starfish Bay (LCA5) will be substantial during the construction and early years of the development reducing to moderate at Year 10.

8.9.5 In contrast to this, the impacts on the currently degraded landscape of the former Whitehead Detention Centre and on the Wu Kai Sha Station Development site will be negligible due to the incoherent and degraded character of these landscapes. With successful and diligent implementation of landscape mitigation measures, it is possible that impacts could be negligible when they mature at Year 10.

8.9.6 Direct and indirect impacts on the landscape of surrounding villages (LCAs 3 and 4) will be moderate during the construction period and early years of operation, reducing to slight at Year 10. The new development will be of a larger scale than the existing

villages, but the presence of built development in these areas will serve to offset impacts somewhat.

### *Visual Impacts*

- 8.9.7 There would be significant impacts on views to north and east of the villages of To Tau and Wu Kai Sha resulting in considerable permanent change to the views. Substantial level visual impacts during construction would be reduced by architectural treatment of the buildings and proposed mass planting to moderate levels during long term operational phases.
- 8.9.8 There would also be a considerable permanent change in views of residents of high-rise developments in eastern Ma On Shan, resulting in a moderate visual impact during construction, reducing to slight in the long term. Recreational users of Ma On Shan Country Park would be similarly affected.
- 8.9.9 Relevant residents of Monte Vista would have their existing views of Tolo Harbour mostly obstructed by the Wu Kai Sha Station Development. Given the proximity and mass of the proposed development, the visual impact would be substantial. The proposed mitigation measures are not likely to reduce this significantly.
- 8.9.10 Residents elsewhere in eastern Ma On Shan will experience visual impacts which will affect their views of the setting of Tolo Harbour. These include residents of Lee On Estate/Kam Lung Court, residents such as those in Saddle Ridge Court, Villa Athena and Villa Oceania/Bayshore Towers who will experience moderate or slight impacts after Year 10 of operation.
- 8.9.11 Views of residents of medium and low rise blocks at Cheung Muk Tau, Sai O, Tseung Kwan Lei, Kwun Hang, Nai Chung to the east of the site, and users of medium rise educational blocks at Li Po Chun United World College, would similarly be affected with moderate level impacts during construction, being reduced in the long term by planting along the site boundary to slight impacts in the long term. The new high-rise buildings would be seen from Sham Chung across Three Fathoms Cove, in silhouette and against the sky and a backdrop of distant hills. Resulting in a slight permanent change in their extensive views. Recreational users of Chinese YMCA of HK Wu Kai Sha Youth Village and Ma On Shan Town Park/Swimming Pool to the west would also be affected.
- 8.9.12 The development would be clearly visible long range views of the development across Tolo Harbour from the low and medium rise residential settlements at on the hills above Tolo Harbour, at Ma Liu Shui/Kon Hang/ Tsiu Hang/ Tai Po Kau San Wai/ Tai Po Kau Lo Wai/ Lai Chi Hang/ Ha Wong Yi Au, buildings at the Chinese University, and recreational users of the Plover Cove / Plover Cove Reservoir. As it is seen in the

context of the surrounding urban development, the change in view is likely to be only slight, although the proposed architectural treatment of the buildings would not reduce this significantly.

8.9.13 Given its scale, the proposed development would have relatively modest landscape and visual impacts. Most of the impacts could be effectively reduced by the proposed landscape mitigation measures, however it is recognised that there would be permanent changes in the extent and quality of existing landscape resources, landscape character and visually sensitive receivers.

## 8.10 Recommendation

8.10.1 If the development is to proceed it is recommended that all the landscape mitigation measures described for both the construction phase (Table 8.6.3), and the operational phase (Table 8.7.3), be adopted in full. Supplementary assessment (with mitigation proposal) on the visual impacts is required to be prepared as necessary for the proposed Road D1 (Schedule 2 DP) before the applicants for this respective Environmental Permits are submitted.

8.10.2 It is further recommended that the following procedural measures be adopted :

- Within the detailed design the design of the landscape mitigation measures must be fully integrated into the architectural, civil, structural and geotechnical engineering designs, and co-ordinated with the various functional requirements to ensure that they can be comprehensively implemented and their mitigatory effect fully realised on site. Designs should be independently checked against all other requirements to validate that design integration has been undertaken.
- The full written agreement of all design proposals should be obtained from all the relevant management and maintenance agents for the works prior to commencement of any of the works on site.
- All landscape mitigation measures, including planting works, hard landscape treatments, and the architectural finishes to building and engineering structures be supervised by site staff who have suitable qualifications in horticultural, landscape architectural or architectural qualifications.
- Requirements for monitoring the implementation of landscape mitigation measures set out in the Environmental Monitoring and Audit Manual be fully implemented, and verified by a Landscape Architect independent of the design or site supervisory team.

## 8.11 Acceptability of Impacts

- 8.11.1 In accordance with Annex 10, Para 1.1(c) of the EIAO TM, the landscape and visual impacts of the project under the preliminary Preferred Development Option are assessed as being "acceptable with mitigation measures". Para 1.1(c) states that "the impact is acceptable with mitigation measures if there will be some adverse effects, but these can be eliminated, reduced or offset to a large extent by specific measures".
- 8.11.2 In the case of the current Project, taken as a whole, the landscape and visual impacts arising from the development can be offset to a large extent by mitigation measures. However, it is essential that these measures be well designed and implemented and that the mitigation measures be continued through to the detailed design of the buildings for the development.
- 8.11.3 By extension of the above, it can be assumed that the landscape and visual impacts of the Preferred Development Option (5.0 plot ratio for Wu Kai Sha Station Development) as a less massive visual element than that of the Preliminary Preferred Development Option will also be acceptable under Para 1.1(c) under the same conditions. The photomontage of the Preferred Development Option from Monte Vista is shown on Figure 8.20B1.

## 8.12 References

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