4. LANDSCAPE AND VISUAL IMPACT ASSESSMENT

Introduction

4.1 This Landscape and Visual Impact Assessment (LVIA) covers the proposed Ocean Park Redevelopment. This section assesses the potential landscape and visual impact arising from the construction and operation of the proposed work in accordance with the Environmental Impact Assessment Ordinance (EIAO).

Project Description

4.2 Fig 4.1.1 shows a location plan for the proposed redevelopment. Fig 4.1.2 shows an existing aerial view of Ocean Park. Fig 4.1.3 to Fig 4.1.5 shows the master layout and selected images of the proposed work. Full description of the proposed redevelopment is provided in Section 2 of the EIA report.

Review of Planning and Development Control Framework

4.3 A review of the existing and planned development framework for the proposed work and for the surroundings has been considered. It aims to identify issues for the neighbouring planned land uses, to identify potential VSRs, and to ensure a high compatibility between the proposed project and the surroundings.

4.4 Outline Zoning Plans (OZPs) have been examined. In accordance with the EIA Study Brief, relevant details for “Aberdeen & Ap Lei Chau Outline Zoning Plan” and “Shouson Hill & Repulse Bay Outline Zoning Plan” have been extracted and are shown on Fig. 4.1.6, together with the study boundary for LVIA.

4.5 The existing Ocean Park development has been assigned under Other Specified Uses (OU - For “Ocean Park” Only), which has been reserved for the significance of Ocean Park being the major tourist attraction as the only oceanarium in Hong Kong. The proposed redevelopment will occupy additional OU and Government, Institution and Community (G/IC).

4.6 Other than OU, the remaining study area is predominantly zoned as Coastal Protection Area (CPA), Green Belt (GB), Government, Institution and Community (G/IC), Residential (R) and Industrial (I). CPA and GB are mostly found adjacent to Ocean Park in the middle and to the east side of the Nam Long Shan peninsula. The mix of G/IC, R and I are found in Shouson Hill and Wong Chu Hang to the peninsula.

4.7 There are no major concurrent projects that may possibly affect with the project.

Environmental Legislation and Standards

4.8 Current OZPs relevant to the Project are as follows:


4.9 The methodology for the LVIA has been in accordance with Annexes 10 and 18 of Environmental Impact Assessment Ordinance (EIAO) Technical Memorandum and EIAO Guidance Note No. 8/2002.
4.10 Other landscape documents relevant for the preparation of the LVIA include:

- Hong Kong Planning Standards and Guidelines, Section 4: Recreation, Open Space and Greening and Section 11: Urban Design Guidelines – outlines the guidelines to be considered for open space design, greening and urban design.

- Technical Reports of Landscape Value Mapping in Hong Kong by Planning Department – establishes the essential landscape baseline information which provides a systematic reference framework to facilitate landscape assessment and broad environmental assessment of major projects at territorial level.

- Government General Regulation 740 – sets out restrictions on the preservation and felling of trees in Hong Kong

- The Forests and Countryside Ordinance (Cap96) – prohibits felling, cutting, burning or destroying of trees and growing plants in forests and plantations on government land. Its subsidiary regulations prohibit the picking, felling or possession of listed rare and protected plant species

- The Forestry Regulations – made under Section 3 of the Forests and Countryside Ordinance (Cap. 96), defines the list of protected species in Hong Kong

- ETWB TCW No. 29/2004 Registration of Old and Valuable Trees and Guidelines for their Preservation – provides priority protection to the trees in the Register. Furthermore, the Government has already put in place a comprehensive range of administrative and legislative measures to preserve trees on Government land.

- ETWB TCW No. 2/2004 Maintenance of Vegetation and Hard Landscape Features – sets out the government departmental responsibilities for maintenance of vegetation and hard landscape features

- ETWB TCW No. 14/2002 Management and Maintenance of Natural Vegetation and Landscape Works, and Tree Preservation – defines and outlines the management and maintenance responsibilities for natural vegetation and landscape works, and the authorities for tree preservation and felling

- ETWB TCW No. 7/2002 Tree planting in Public Works – affirms the advocated policy on tree planting which adopts a flexible and balanced approach in the planning and design of public works

- ETWB TCW 17/2000 Improvement to appearance of slopes – outlines the principles and procedures recommended for all departments involved in new slope works and maintenance of existing slopes for improving aesthetic and environmental impact of slope works

- ETWB TCW No. 25/93 Control of Visual Impact of slopes – outlines the design principles recommended to be used in designing man-made slopes for Public Works projects in order to reduce their adverse visual impact

- GEO publication No. 1/2000 ‘Technical Guidelines on landscape treatment and Bio-engineering for Man-Made Slopes and Retaining Walls’

**Methodology of Assessment of Landscape Impacts**

4.11 The assessment of landscape impacts has adopted the following process:

- Identification of the baseline Landscape Resources (LR) and Landscape Character Area (LCA) found within the study area. This was firstly prepared by desktop research study on topographical maps, information database and photographs, and then followed with site visits for data verification.
Assessment of “Sensitivity to Change” to the LR and LCA. This is affected by factors including: (i) whether the resource is common or rare; (ii) whether it is considered to be of local, regional, national or global importance; (iii) whether there are any statutory or regulatory limitations / requirements relating to the resource; (iv) the quality of the resource; (v) the maturity of the resource, and (vi) the ability of the resource to accommodate changes. The sensitivity of each LR and LCA is separated into construction phase and operation phase. The rating is classified as below:

**High:** Important LR or LCA of particularly distinctive characteristics or high importance, and is sensitive to relatively small changes

**Medium:** LR or LCA of moderate landscape characteristics and value, and is reasonably tolerant to change

**Low:** LR or LCA with low landscape characteristics and value, and is largely tolerant to change

Identification of potential sources of landscape impacts during construction and during operation. The impact will be separately considered for each “Stage” of construction, as shown on Fig 4.1.7.

Identification of “Magnitude of Change” for landscape impacts. This is affected by factors including: (i) the physical extent of impact; (ii) the landscape context of impact and (iii) the time-scale of impact, such as whether it is temporary (short, medium or long term), permanent with reversible potentials, or irreversibly permanent. Landscape impacts are quantified as the Magnitude of Change for construction phase and operation phase. The rating is classified as below:

**Large:** LR or LCA will suffer a major change.

**Intermediate:** LR or LCA will suffer a moderate change.

**Small:** LR or LCA will suffer a barely perceptible change.

**Negligible:** LR or LCA will suffer no discernible change.

Assessment of the “Impact Significance Threshold Before Mitigation” for landscape impacts. The assessment of landscape impacts during construction and during operation is produced by synthesising the “Sensitivity to Change” and “Magnitude of Change” for various LR and LCA according to Table 4.1. The degree of significance is divided into four thresholds, depending on the combination:

**Substantial:** Adverse / beneficial impact where the proposal will cause significant deterioration or improvement in existing landscape quality

**Moderate:** Adverse / beneficial impact where the proposal will cause a noticeable deterioration or improvement in existing landscape quality

**Slight:** Adverse / beneficial impact where the proposal will cause barely perceptible deterioration or improvement in existing landscape quality

**Insubstantial:** No discernible change in the existing landscape quality
Table 4.1  Matrix for Impact Significance Threshold Before Mitigation: Relationship between Sensitivity to Change and Magnitude of Change for LVIA

<table>
<thead>
<tr>
<th>Sensitivity To Change</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large</td>
<td>Moderate</td>
<td>Moderate/Substantial</td>
<td>Substantial</td>
</tr>
<tr>
<td>Intermediate</td>
<td>Slight/Moderate</td>
<td>Moderate</td>
<td>Moderate/Substantial</td>
</tr>
<tr>
<td>Small</td>
<td>Insubstantial/Slight</td>
<td>Slight/Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>Negligible</td>
<td>Insubstantial</td>
<td>Insubstantial</td>
<td>Insubstantial</td>
</tr>
</tbody>
</table>

- Identification of potential Mitigation Measures. This part is also separated into construction phase and operation phase, with proposing measures for preventing or minimizing unavoidable adverse impacts and / or generating beneficial long-term impacts. A table for the mitigation measures is provided. The agencies responsible for the funding/ implementation and management/ maintenance of the mitigation measures are also identified.

- Identification of “Residual Impact Significance Threshold After Mitigation” for landscape impacts. This part indicates the accumulative influence to LR and LCA after applying mitigation measures, with an assumption that all proposed measures and guidelines will be fully implemented. Like the “Impact Significance Before Mitigation”, the rating has been divided into the construction phase and operation phase.

Methodology of Assessment of Visual Impacts

4.12 The assessment of visual impacts has adopted the following process:

- Identification of Zones of Visual Influence (ZVI) and Visual sensitive receivers Groups (VSRs) during construction and during operation. A preliminary ZVI has been established by a desktop study of topographic maps, street maps and photographs to preliminarily determine the possible VSR located within generic area. Subsequently, a digital terrain model with the proposed master layout, and building blocks and earthwork data has been developed to represent the proposed redevelopment. Visibility Contour Plans using a GIS software (ESRI® ArcGIS®) have been generated at 1° intervals. Due to the large extent of the project and the drastically varying visibility of different parts of Ocean Park, three (3) representative points within the OP redevelopment boundary have been selected as the target points for the Visibility Contour. These points are namely: “The Waterfront”, “The Summit” and the temporary conveyor belt system and the barging point (Fig 4.4.1 to Fig 4.4.3). Finally, site visits have been carried out to verify the data. ZVI with all VSR has been confined to a 5km radius of the proposed redevelopment, as onsite checking suggests poor visibility beyond 5km.

- Assessment of the “Sensitivity to change” of the VSRs. Factors include:
  - The type of VSRs, such as viewers who are residents, workers, road travellers or recreation engagers. Those people viewing from their homes are considered to be highly sensitive because the view directly affects their general quality of life. Those people viewing from their workplace are considered to be only moderately sensitive as it is less important factor for their quality of life. The degree however depends on whether the workplace is industrial, retail or commercial. Those people who take part in outdoor leisure activity may have varying sensitivity depending on the type of recreation. Those people who are travelling on roads or streets will also have varying sensitivity depending on the speed of travel.
- Population of viewers. This is to consider the overall population of viewers in the VSRs.

- Other factors to be considered (as required by EIAO GN 8/2002) include the value and quality of existing views, the availability and amenity of alternative views, the duration and frequency of view, and the degree of visibility.

“Sensitivity to change” of the VSRs is divided into construction phase and operation phase, with rating classified as below:

**High:** The VSR is highly sensitive to any change in their viewing experience.

**Medium:** The VSR is moderately sensitive to any change in their viewing experience.

**Low:** The VSR is only slightly sensitive to any change in their viewing experience.

- Identification of the potential sources of visual impacts during construction and during operation. Like for the landscape impact assessment, the visual impact assessment has also considered different working stages during construction phase, as shown on Fig 4.1.7. The impact of possible glare has also been considered, and the result is presented later in this report.

- Assessment of the potential “Magnitude of Impact”. Factors include:
  - the compatibility with the surrounding landscape
  - the duration of the impact
  - the reversibility of the impact
  - the scale of the impact and distance of the source of impact from the viewer
  - the degree of visibility of the impact, and the degree to which the impact dominates the field of vision of the viewer.

The magnitude of visual impacts during different stages of construction and during operation has also been separately considered, with rating as below:

**Large:** The VSRs would suffer a major change in their viewing experience.

**Intermediate:** The VSRs would suffer a moderate change in their viewing experience.

**Small:** The VSRs would suffer a small change in their viewing experience.

**Negligible:** The VSRs would suffer no discernible change in their viewing experience.

- Prediction of “Impact Significance Threshold Before Mitigation” for visual impacts. Same as that for the landscape impact assessment, it aims to synthesise the “Sensitivity to Change” and “Magnitude of Change” for various VSRs according to Table 4.1 to assess the visual impacts in a matrix. The degree of significance has been divided into four thresholds again:

**Substantial:** Adverse / beneficial impact where the proposal would cause significant deterioration or improvement in existing visual quality

**Moderate:** Adverse / beneficial impact where the proposal would cause a noticeable deterioration or improvement in existing visual quality

**Slight:** Adverse / beneficial impact where the proposal would cause barely perceptible deterioration or improvement in existing visual quality

**Insubstantial:** No discernible change in the existing visual quality
Identification of potential Mitigation Measures. This part is also separated into construction phase and operation phase, with proposing measures for preventing or minimizing unavoidable adverse impacts and/or generating beneficial long-term impacts. A table for the mitigation measures is provided. The agencies responsible for the funding/implementation and management/maintenance of the mitigation measures are also identified.

Identification of “Residual Impact Significance Threshold After Mitigation” for visual impacts. This part indicates the accumulative influence to VSRs after applying mitigation measures, with an assumption that all proposed measures and guidelines will be fully implemented. Like the “Impact Significance Before Mitigation”, the rating has been divided into the construction phase and operation phase.

Preparation of Photomontage. To better illustrate the visual impact of proposed redevelopment with and without mitigation, highly accurate virtual views from selected VSRs to the proposed redevelopment have been generated firstly using a GIS software (ESRI® ArcGIS®) and then combined with images taken from a physical model provided by Ocean Park (refer to Fig. 4.1.10 – Fig. 4.1.11). Images of other ‘supporting’ elements, such as the sky, the ocean, background islands, cable cars etc., have been added by photo-editing software to create highly accurate photomontages.

Baseline Study

Landscape Resources (LR)

4.13 Key LRs within the study boundary have been mapped on Fig 4.2.1 and illustrated on Fig 4.2.2 - Fig 4.2.5. Four broad types of LRs, namely Type 1 – Theme Park Planting, Type 2 – Urban to Urban-fringe Planting, Type 3 – Hillside Vegetation, and Type 4 – Sea and Coast, are identified. Each LR is briefly described below:

Type 1 - Theme Park Planting

LR1 – Theme Park Planting on Flatland

This LR refers to a wide variety of exotic and native mature ornamental trees found within “The Waterfront” and the small portion of Ocean Park in Tai Shue Wan. Most of the trees are planted by Ocean Park through years of operation. These trees are generally large, of good forms and are well-maintained. A few large, mature, prominent trees with high amenity are found in “The Waterfront”. Along these large trees, a few of them are believed to be retained since years before the operation, estimated over 70 years of age. These prominent trees include Ficus microcarpa, Ficus elastica, Cinnamomum camphora, Araucaria heterophylla, Albizia lebbek, Aleurites moluccana, Artocarpus altillis, and Pterocarpus indicus. Other trees include Archontophoenix alexandrae, Bauhinia spp., Bombax malabaricum, Caryota ochlandra, Cassia fistula, Celtis sinensis, Chrysalidocarpus lutescens, Delonix regia, Juniperus chinensis, Lagerstroemia speciosa, Livistona chinensis, Melaleuca quinquenervia, Peltophorum pterocarpum, Phoenix reobelenii, Pinus spp., Plumeria rubra, Ravenala madagascariensis, Schefflera spp., Roystonea regia, Spathodea campanulata and Syzygium jambos. A broad tree survey of approx. 670 nos. of tree has been carried out for this Park area and the information is shown in Appendix 4.1.

LR2 – Theme Park Planting on Hillside

This LR refers to the mix of woodland mix and ornamental trees found within “The Summit”. It differs from LR1 in the way that the trees are generally less mature and of lower amenity value. There are also much more manmade slope planting between platforms for the Park development due to the generally steep topography and more exposed environment of the area. These slope woodland tree species are mostly exotic, dominated by: Acacia confusa, Casuarina equisetifolia, and Leucaena leucocephala. Other woodland species are found in much less quantities, including: Celtis sinensis, Eucalyptus citrodora, Gordonia axillaris, Macaranga tanarius, Mallotus paniculatus, Melaleuca leucadendron, Pinus massoniana, Schefflera spp. and Syzygium jambos. Ornamental tree are also less mature and small in size than those in “The Waterfront”, including Araucaria heterophylla, Bauhinia spp, Bombax malabaricum, Callicedron viminalis, Caryota ochlandra, Cassia spp., Cerbera manghas, Chrysalidocarpus lutescens, Crateva religiosa, Delonix regia, Ficus benjamina, Ficus microcarpa, Ginkgo biloba, Livistona chinensis, Phoenix reobelenii, and
Pterocarpus indicus. A broad tree survey of approx. 1518 nos. of tree has been carried out for this Park area and the information is shown in Appendix 4.1.

Type 2 - Urban to Urban-fringe Amenity Planting

LR3 – Roadside Planting
This LR refers to amenity planting along roads. Trees of a variety of mostly native and exotic species are found along roadside of the Hong Kong Island South, such as Acacia confusa, Albizia spp., Aleurites moluccana, Bauhinia spp., Cassia spp., Casuarina equisetifolia, Delonix regia, Ficus spp., Melaleuca leucadendron, Spathodea campanulata, and Thevetia peruviana. These trees are fairly large in size and of fair conditions. A tree survey of approx. 335 nos. of tree for the roadside area in adjacent to Ocean Park entrance was carried and the information is shown in Appendix 4.2.

LR4 – Urban Residential Area Planting
This LR specifically refers to the ornamental amenity planting near Wong Chuk Hang Estate and the associated social facilities along Welfare Road, where some large mature trees are found inside the urban context. Tree species include Ficus altissima, Ficus microcarpa, Ficus rumphii, Peltophorum pterocarpum, Juniperus chinensis, Lagerstroemia speciosa, Thevetia peruviana and Liquidambar formosana.

LR5 – Hillside Residential Area Planting
This LR is dominated by afforesting plantation for the improved hillside slope along the roads and exotic ornamental trees within the residential area of Shouson Hill. The commonly found species along the roads are Macaranga tanarius, Mallotus paniculata, Acacia confusa, Leucaena leucocephala, Ficus microcarpa, Thevetia peruviana, Melaleuca quinquenervia, Ficus elastica, Delonix regia, Pinus spp., Bauhinia spp., and Araucaria heterophylla. Four (4) Old & Valuable Trees are found in this area: Reg. No.: LCSD S/8 (Ficus elastica), S/9 (Albizia saman), S/10 (Ficus microcarpa) and S/11 (Araucaria heterophylla).

LR6 – Flatland Institutional and Open Space Planting
This LR refers to ornamental planting at various institutions and open spaces at flat areas of Wong Chuk Hang along Ocean Park Road. The area has a large fraction of turfs and with sports ground paving. Trees are few and often only found along the boundaries of these institutions and open spaces, except to the west of the Firing Range of the Police Training School where dense buffering woodland is found. Tree species includes Albizia spp., Aleurites moluccana, Bauhinia spp., Casuarina equisetifolia, Delonix regia Ficus spp., and Roystonea regia.

LR7 – Hillside Institutional Planting
This LR refers to a mix of ornamental planting and hillside woodland planting at institutions found on or near hillsides. Tree comprises of both native and exotic species, such as Ficus elastica, Ficus microcarpa, Casuarina equisetifolia, Macaranga tanarius, and Mallotus paniculata. These trees are fairly large in size and of fair conditions.

Type 3 - Hillside Vegetation

LR8 – Hilltop Grassland
This LR refers to exposed bare soil and rocks, with low-lying grass and small shrubs sparsely grown. The dominant shrub species are Machilus spp. and Rhus spp..

LR9 – Hillside Shrubs and Small Trees
This LR refers to natural to semi-natural hillside vegetation comprised of mainly shrubs and small trees. It consists of a variety of mostly native species such as Artocarpus hypargyreus, Bridelia tomentosa, Casuarina equisetifolia, Crotalaria ligustinum, Litsea glutinosa, Mallotus paniculatus, Machilus spp., Microcos paniculata, Phyllanthus emblica, Pinus spp., Macaranga tanarius, Rhus spp., Machilus spp., Schefflera heptaphylla.. Seasonal streams also flow through some of the area.
LR10 – Dense Disturbed Hillside Vegetation

This LR comprises of stabilized slopes, disturbed hillside landscapes. Mature trees of both native and exotic species, such as Acacia confusa, Casuarina equisetifolia, Celtis sinensis, Ficus spp., Leucaena leucocephala, Macaranga tanarius, Mallotus paniculata, Pinus spp., and Sterculia lanceolata, are found within this area.

LR11 – Dense Semi-natural Hillside Vegetation

This LR refers to generally natural hillside woodland comprising of a variety of mostly native species, such as Artocarpus hypargyreus, Celtis sinensis, Ficus spp., Litsea spp., Macaranga tanarius, Mallotus paniculata, Microcos paniculata, Pinus spp., Rhus spp., Schefflera spp., Sterculia lanceolata. Other exotic species, typical to disturbed grounds, such as Acacia confusa, Casuarina equisetifolia, Leucaena leucocephala, and Macaranga tanarius, are sometimes found along the edge of the LR.

Type 4 - Sea and Coast

LR12 – Natural Rocky Seashore

This LR refers to the exposed rocky shore adjacent to the water bodies of Deep Water Bay and Sham Shui Kok. There are occasional herbaceous plant species on the upper slopes. During the high tides, the area is partially submerged underwater.

LR13 – Semi-natural Shoreline and Manmade Waterfront

This LR refers to the semi-natural shorelines and seawalls in Tai Shue Wan and the manmade waterfront edges in Po Chong Wan. It provides for people easy access, both physically and visually, to the sea. No vegetation is found along these edges against the sea.

LR14 – Water bodies surrounding Nam Long Shan Peninsula

There are four major water bodies surrounding the Nam Long Shan peninsula: Deep Water, Sham Shui Kok Bay, Tai Shue Wan, and Po Chong Wan. No aquatic plant can be observed above the surface.

Landscape Character Areas (LCA)

4.14 The key LCAs within the study boundary are mapped on Fig. 4.3.1 and illustrated in Fig 4.3.2 - Fig 4.3.6. Each LCA is briefly described below:-

LCA1 – Theme Park on Low Ground

Theme park of Ocean Park has been one of the major tourist attractions of Hong Kong. This LCA refers to the portion of Ocean Park at Wong Chuk Hang, featured by the main visitor entrance and relatively flat topography compared to LCA2. There are few low-rise residential developments, along with HK Country Club adjacent to the park site. With natural hillside landscape of Nam Long Shan as the background, this theme park space has distinct character from the surroundings.

LCA2 – Theme Park on High Ground

This LCA refers to the portion of Ocean Park at Nam Long Shan, featured by steeper topography and more open feel towards the ocean. Several amusement rides and large structures, such as the viewing tower, are conspicuous. They sit on several separate platforms created by slope works and connected by pathways and scenic walks.

LCA3 – Exposed Hillside Landscape

This LCA refers to the steep, natural, exposed terrain of Nam Long Shan, characterized by mostly grasses and shrubs with little human disturbance. Ocean Park’s cable car system has been built over its eastern side, linking up visitor flow from LCA1 and LCA2. There are little human activities on the hills due to difficult access.
LCA4 – Semi-natural Seashore Landscape
This LCA refers to the landscape near the portion of Ocean Park at Tai Shue Wan. The LCA is nestled within a valley, on a generally flat topography, surrounded by dense hillside shrub land on hillsides to the north and the open Aberdeen Channel to the southwest. This water body is a highly used thoroughfare for the marine traffic of the Aberdeen area. The shoreline is generally semi-natural with some manmade seawalls of large boulders.

LCA5 – Secluded Hilly Road
This LCA refers to the section of Nam Long Shan Road stretches along the upper western slopes of Nam Long Shan. The meandering road cutting through the dense shrub land serves mainly as a restricted service road for Ocean Park. Hence it has a secluded feel.

LCA6 – Hillside Urban Fringe Landscape
This LCA refers to the area on the upper northwest slopes of Nam Long Shan, surrounded by dense shrub land. It is the entry point into Nam Long Shan Road, where a mix of high-rise residences and institutions are found along the road. It has open views out to Sham Wan and Po Chong Wan. The road has a secluded and tranquil feel.

LCA7 – Mix-use Urban Landscape
This LCA refers to the highly urbanized area in the intersection of Shum wan, Nam Long Shan Road and other main roads from Wong Chuk Hang and Ocean Park. High-rise residential developments, public facilities and institutions are located along the busy Shum Wan Road. Heavy traffic along with major bus depot and dense housing estate create the significantly busy and active urban character.

LCA8 – Open Institutional Landscape
This LCA refers to a series of Government and public sport facilities, institution and schools, such as Police Training School and HK School of Motoring, found to north of Wong Chuk Hang. The flat topography, openness and heavy traffic along the main roads characterises this landscape area.

LCA9 – Industrial Urban Landscape
This is the area along Wong Chuk Hang Road, mainly comprised of old high-rise industrial buildings and roads with heavy trucks and public traffic. Industrial buildings, the squalid culvert adjacent to the industrial buildings and road activities strongly define the area.

LCA10 – Secluded Institutional Landscape
This LCA, located to the northwest of the Wong Chuk Hang, is an area of secluded government/institutions and residents within a densely vegetated environment. Most of these developments are related to the water body to the south. It is relatively more ‘natural’ and ‘tranquil’ than the rest of the urbanised areas within Wong Chuk Hang.

LCA11 – Typhoon Shelter Landscape
Located to the northwest of Wong Chuk Hang, this waterfront LCA is highly used for recreation, residential and industrial activities along the manmade coastline. A wide range of traffic travels through it, including ferries, yachts, sampans, and fishing boats.

LCA12 – Natural Seashore Landscape
This LCA refers to the extensive sea area and its rocky seashore surrounding Nam Long Shan. It forms a part of the Coastal Protection Area adjacent the Ocean Park eastern boundaries both in “The Summit” and “The Waterfront”. The area to the west is a marine thoroughfare frequently used for water recreation.

LCA13 – Beach Landscape
This LCA is to the northeast of Ocean Park “The Waterfront”, comprised of Deep Water Bay water body, its naturalistic coastline and the southeast facing lower slopes of Shouson Hill. The heavily
used Deep Water Bay Road and a recreational trail running adjacent to it have an open view to the sea and natural hillside, which characterises the pleasant nature of the LCA.

**LCA14 – Low-density Residential Urban Fringe Landscape**

This is an extensive area of tranquil residential landscape located to the northwest of “The Waterfront”, in which the medium-rise residential housings are found clustered along Shouson Hill Road. The area extends over a sloped hill facing south towards Nam Long Shan.

**LCA15 – Transportation Corridor Landscape**

Located in northwest Wong Chuk Hang, this LCA is characterized by roads, open toll plaza of Aberdeen Tunnel, and the associated traffic.

**LCA16 – Hillside Institutional Landscape**

This LCA is located on the southeast slope toes of the Bennett’s Hill, comprising of a number of institutions, including hospitals and schools. With much ornamental plantation and dense natural vegetation on the hillside, it has a tranquil, naturalistic feel.

**Landscape Sensitivity to Change**

4.15 The sensitivity to change of the landscape resources and landscape character areas that will be affected during the Construction Phase and Operational Phase is listed in Table 4.2. and Table 4.3.

**Visual sensitive receivers**

4.16 The primary Zone of Visual Influence (ZVI) is shown in Fig 4.4.4.

4.17 Key Visual sensitive receivers (VSRs) within the ZVI, defined by area, are mapped on Fig 4.4.4. For ease of reference, each VSR is given an identity number, which is used in all relevant tables and figures in this section. The nature of each VSR area is described below and illustrated in Fig.4.4.5 - 4.4.11. The views of each VSR are also briefly described below and illustrated in Fig. 4.5.1 - 4.5.12. [Note that views from VSR28 (Manly Vila) are similar to those experienced at VSR2 and thus no additional illustrations are provided for VSR28].

**VSR1 – Ocean Park “The Waterfront”**

This VSR consists of mainly visitors and tourists to the portion of Ocean Park at Wong Chuk Hang, known as “The Waterfront”. It will have a full, close view to the proposed work in “The Waterfront” but no view to “The Summit”, and the temporary conveyor belt system and barging point. Its views to the surroundings are restricted to the Park’s elements, the cable cars and the north side of Nam Long Shan. As blocked by vegetation and Ocean Park’s structures, it has generally no view to other areas outside the Park. In general, the view from this VSR to the Park itself is good and picturesque, mostly due to a good mix of built elements, natural vegetation and carefully designed/ maintained plantation within the Park. Both the quality of view from this VSR and the receiver population are high, especially during weekends and holiday seasons. The overall sensitivity is High.

**VSR2 – Ocean Park Cable Car**

This VSR consists of mainly visitors and tourists riding on Ocean Park’s cable car system linking up “The Waterfront” with “The Summit”. This VSR has an full, close, elevated view to “The Waterfront”, “The Summit”, Nam Long Shan and most areas surrounding the Ocean Park, the water bodies of Sham Shui Kok, Deep Water Bay and Repulse Bay, and even out towards Chung Hom Kok, Stanley and Lamma Island. The scenic panoramic views of natural landscapes and seascapes are highly distinctive and are considered one of few accessible viewpoints that provide such a comprehensive view of the Hong Kong Island south. Both the quality of view from this VSR and the receiver population are very high. The overall sensitivity is High.

**VSR3 – Ocean Park “The Summit”**

This VSR consists of mainly visitors and tourists to the portion of Ocean Park to the south of Nam Long Shan, known as “The Summit”. At certain vantage points, people will enjoy a series of open,
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panoramic, picturesque views to the open sea to the south. It will have a full, close view to the proposed work in the “Summit” full close view, and glimpse to partial view to the temporary barging point and the conveyer belt system at Tai Shue Wan. Both the quality of view from this VSR and the receiver population are high. The overall sensitivity is High.

VSR4 - Tai Shue Wan
This VSR refers to receivers in the Tai Shue Wan area, where the existing Ocean Park’s secondary entrance is located. It consists of mostly Ocean Park’s visitors and tourists and occasional local visitors come to enjoy or to fish along the coast. The area sits in the valley on the southwest side of Nam Long Shan, providing views with a good mix of built elements, natural landscape and seascape. There are also good, elevated views overlooking Tai Shue Wai and the Aberdeen Channel from Ocean Park’s existing long escalator system, which connects Tai Shue Wan with “The Summit”. It will have a close, partial view to “The Summit” during construction, and close, partial view to “The Summit”. It will also have close, partial view to the temporary conveyer belt system and the barging point. The quality of view from this VSR is high and the receiver population is medium. The overall sensitivity is High.

VSR5 – Nam Long Shan Road
This VSR consists of mostly students and patients of various educational and medical institutions along Nam Long Shan Road. There are several points where one can get panoramic view to the seashore landscape of Aberdeen Channel and the urban-fringe landscapes of Ap Lei Chau and Wong Chuk Hang. The VSR will have glimpse view to “The Summit” at a distance of 500m. It will also have partial close view to the temporary conveyer belt system and the barging point during construction. Both the quality of the view from this VSR and the receiver population are medium. The overall sensitivity is Medium.

VSR6 – Police School and Aberdeen Sports Centre
This VSR refers to mostly users of the Police Training School and various public sports/ recreational facilities in the Wong Chuk Hang area. Receivers at upper levels of the buildings towards the east will have close, partial view to “The Waterfront”. Both the quality of view from this VSR and the receiver population are medium. The overall sensitivity is Medium.

VSR7 – Southwest Nam Fung Road
This VSR consists of mostly patients and users of various medical and health care institutions near Nam Fung Road. From upper levels of the buildings of these institutions, one can have an open panoramic view, across the busy Wong Chuk Hang Road, overlooking Wong Chuk Hang. It will have a partial view at distance of 500m to the proposed work of “The Waterfront” in Hong Kong School of Motoring and the bus depot at a distance of approximately 500m. The quality of view from this VSR is medium, and the receiver population is low. The overall sensitivity is Medium.

VSR8 – Wong Chuk Hang Industrial Zone
This VSR consists of mostly workers in the industrial zone of Wong Chuk Hang. Among the dense blocks of developments, one at ground level has generally no views to areas outside the zone. But some upper levels of high-rises will have a partial view to “The Waterfront” at a distance of approximately 500m. The quality of view from this VSR is low while the receiver population is high. The overall sensitivity is Low.

VSR9 – Wong Chuk Hang Estate
This VSR consists of mostly residents in high-rises of Wong Chuk Hang Estate, which is a public housing estate located to the west of “The Waterfront”. Among the dense block of developments, one at ground level has very limited view to the surroundings. For upper levels of the high-rises, since most windows within the units are north-south orientated, residents have no view to Ocean Park. Residents will only get a partial view to “The Waterfront” at a distance of approximately 500m through a grid of concrete ventilation lattice at the end of the public corridor of each level. The quality of view from this VSR is medium and the receiver population is high. The overall sensitivity is Medium.
VSR10 – Aberdeen Typhoon Shelter & Po Chong Wan

Aberdeen Typhoon Shelter and Po Chong Wan are a frequent thoroughfare and docking place for yachts, fisherman's boats and ferries. This VSR consists of mostly marine travellers, onboard residents, and industrial engagers. Views from this VSR at a close distance are dominated by the industrial appearance of workshop huts and shelters. But this VSR (including residents at Broadview Court) can also enjoy distant views to the seascape of Aberdeen Channel and the natural landscapes of Nam Long Shan, Tai Shue Wan and Yuk Kwai Shan. It will have partial view towards “The Summit” at a distance of 1000m, There will be full view of the temporary barging point and the conveyor belt system at a distance of 500m. The quality of view is medium and receiver population is medium. The overall sensitivity is Medium.

VSR11 – Ap Lei Chau

The VSR consists to the mostly urban dwellers of Ap Lei Chau, where several large-scale residential developments, such as Lei Tung Estate and Sham Wan Towers, are found. Majority of views at ground or lower levels are blocked by vegetation, yachts, fisherman’s boats and industrial structures at the Aberdeen Typhoon Shelter. But residents in the upper level of high-rises have open view overlooking the Aberdeen Channel along with its marine/ typhoon shelter activities. This VSR will have a partial view to “The Summit”, at a distance of 1500. There will be full view of the temporary barging point and the conveyor belt system at a distance of approximately 1000m. The quality of view from this receiver area is medium and the receiver population is high. The overall sensitivity is Medium.

VSR12 – Yuk Kwai Shan & Ap Lei Pai

This VSR refers to infrequent hikers and recreational fishermen on the exposed terrains and rocky shores of Yuk Kwai Shan and Ap Lei Pai. It has an open panoramic view overlooking Aberdeen Channel, Nam Long Shan and East Lamma Channel. It will have a partial view to the “The Summit” at a distance of 1500m, There will be full view of the temporary barging point and the conveyor belt system at a distance of approximately 1000m. The quality of view from this VSR is high but the receiver population is very low. The overall sensitivity is Low.

VSR13 – Aberdeen Urban Area

This VSR refers to residents of the densely populated Aberdeen. With large number of closely spaced high-rises, views from this VSR to the surroundings are very limited. Only residents at upper level units of some high-rises along Aberdeen Praya Road will have open view overlooking the waterfront and towards Ap Lei Chau, which is also densely packed with high-rises. They will have a partial view at a distance of approximately 2000m towards “The Summit”, and the upper portion of the temporary conveyor belt system at a distance of approximately 1500m. The quality of view from this VSR is low but the receiver population is very high. The overall sensitivity is Medium.

VSR14 – Shouson Hill

This VSR consists of mostly residents of low-rises in Shouson Hill. It has scenic views towards Nam Long Shan and Deep Water Bay to the south. Depending on the orientation of the individual residences, the VSR will have full view of the proposed works in “The Waterfront” at distance of 500m. They will also have glimpse view of “The Summit” at a distance of 1000m. The quality of view from this VSR is high and the receiver population is low. The overall sensitivity is High.

VSR15 – Deep Water Bay

This VSR consists of recreational engagers, road travellers and a small amount of low-rise residents. It has scenic, framed view towards Deep Water Bay, Repulse Bay and Nam Long Shan. It will have a close, glimpse of the proposed work in “The Waterfront” from distance of ranging from 300 – 1000m. They will also have a full view of “The Summit” at a distance of approximately 1500m. Both the quality of the view and the receiver population are high. The overall sensitivity is High.

VSR16 – Repulse Bay & South Bay

This VSR consists of residents of various low to high-rises, tourists and various types of recreational engagers in areas from Repulse Bay, Middle Bay to South Bay. It has scenic, panoramic view to the open sea, the adjacent Middle Island, Nam Long Shan and other surrounding landscapes. It will have glimpse of “The Waterfront” at a distance of 2000m and partial view of “The Summit” at a great...
distance of approximately 1500m. Both the quality of the view and the receiver population are high. The overall sensitivity is High.

**VSR17 – Chung Hom Kok**

This VSR consists of residents of low-rises and various types of recreational engagers in Chung Hom Kok. It has scenic, panoramic view to the open sea and to the surrounding landscapes. It will have glimpse of “The Waterfront” at a distance of 3000m and full view of “The Summit” at distance of 2000m. The quality of view is high, and the receiver population is medium. The overall sensitivity is High.

**VSR18 – East Lamma Channel**

The extensive water body between Nam Long Shan, Ap Lei Chau and Lamma Island, 1500m distance from “The Summit” is a thoroughfare for marine traffic. This VSR refers to marine travellers in the Channel. It has open, panoramic views of expansive areas including that of Ap Lei Chau, Wah Fu, Wong Chuk Hang, Lamma Island and even out towards Repulse Bay, Stanley. It has a full view of “The Summit” and the temporary conveyor belt system and Barging point at a distance of 1500m. The quality of view is high, and the receiver population is medium. The overall sensitivity is Medium.

**VSR19 – Lamma Island**

This VSR expansively consists of the entire Lamma Island, which is located at a great distance of approximately 3000m SW from “The Summit”. It has scenic, panoramic view to the surrounding open sea and the Hong Kong Island south, including the landscapes of Ap Lei Chau, Nam Long Shan and Stanley Peninsula. However, due to great distance, there will be only partial view of “The Summit” at a distance of 3000m. There will also be partial view of the temporary conveyor belt system and the barging point from a distance of 3500m. The quality of view is high and the receiver population is medium. The overall sensitivity is Medium.

**VSR20 – Shum Shui Kok**

Shum Shui Kok is a thoroughfare frequently used for water recreation and fishing. This VSR consists of mostly people participating recreational activities on the water surface. It has full, close views towards “The Summit” and partial view towards the temporary conveyor belt system and the barging point. The quality of view is high but the receiver population is low. The overall sensitivity is High.

**VSR21 – Tai Tam Country Park**

This VSR consists of mostly hikers in Tai Tam Country Park, extending from Stanley, Repulse Bay, Wong Nai Chung Gap to Jardine’s Lookout. It has occasional panoramic views to the distant landscapes, including the seashore of Deep Water Bay and Sham Shui Kok and the west side of Nam Long Shan at a great distance of approximately 3500m. There will be glimpse of “The Waterfront” at a distance of 1500m. There will also be glimpse of “The Summit” at a distance of 3000m. The quality of the view is high but the receiver population is very low. The overall sensitivity is Medium.

**VSR22 – Wong Nai Chung Gap**

This VSR consists of mostly residents in high-rises, hikers and road travellers in the area of Wong Nai Chung Gap. Residents in upper levels of some of the high-rises can get panoramic view of the Hong Kong Island south, thus, there will be glimpse of “The Summit” at a great distance of approximately 2500m. But for hikers and road travellers, views are often blocked by existing dense vegetation, and they have only occasional views towards Deep Water Bay and the east side of Nam Long Shan. The quality of view is high but the receiver population is low. The overall sensitivity is Medium.

**VSR23 – Mount Cameron & Mount Nicholson**

This VSR consists of mostly residents of the mid-rises and occasional hikers in Mount Cameron and Mount Nicholson. Residents in upper levels of some of the mid-rises can get panoramic view of the Hong Kong Island south, thus, there will be glimpse of “The Summit” at a great distance of approximately 2500m. They will also have glimpse of “The Waterfront” at a distance of 1000m. But for hikers, views
are often blocked by dense existing vegetation. The quality of view is High but the receiver population is low. The overall sensitivity is Medium.

**VSR 24 – Aberdeen Reservoir & Magazine Gap**

The VSR consists of hikers, road travellers and residents of mid-rises in the areas of Aberdeen Reservoir and Magazine Gap. View from this VSR is similar to that of VSR 22 and 23. They will only have glimpse view towards “The Waterfront” at minimum distance 500m and the “Summit” at 2000m. Both the quality of view and the receiver population are medium. The overall sensitivity is Medium.

**VSR25 – Mount Gough and Mount Kellet**

This VSR consists of mostly residents of mid-rises, some institutional facilities and occasionally hikers in Mount Gough and Mount Kellet. It has panoramic views over Aberdeen, Ap Lei Chau and Wong Chuk Hang, with the backdrop of the seascape. It will have a glimpse to partial view towards “The Summit” and Tai Shue Wan at a great distance of approximately 3000m. Most views from roads and hiking trails are blocked by dense existing vegetation. There will be partial view towards the temporary conveyor belt system and barging point at a distance of 2500m. The quality of view is high but the receiver population is low. The overall sensitivity is Medium.

**VSR26 – Victoria Peak & Pok Fu Lam Country Park**

This VSR consists of tourists, visitors and hikers to the Victoria Peak and its adjacent Pok Fu Lam Country Park. Due to the dense existing vegetation, there is only limited view from this VSR towards the Hong Kong South from the road and hiking trail. Residences in mid-rises on upper hillsides may get glimpse of “The Waterfront” at a distance of 3500m. However, due to restricted accessibility, no photo is taken from these residential buildings. The quality of view from this VSR is high but the receiver population is low. The overall sensitivity is Medium.

**VSR27 – Aberdeen Tunnel**

This VSR consists of mostly travellers on road from Aberdeen Tunnel to major roads in Wong Chuk Hang. It has only occasional glimpse towards Ocean Park’s cable cars and “The Waterfront” at a distance of 500m. The quality of view is low although the receiver population is high. The overall sensitivity is Low.

**VSR28 – Manly Villa**

This is a special low-rise residential VSR found ‘inside’ Ocean Park. It is the only VSR that will view “The Waterfront” from south to north. It has close, full and highly sensitive view to Ocean Park’s Waterfront and most areas in Wong Chuk Hang. The quality of view from this VSR is high but the receiver population is low. The overall sensitivity is High.

**Landscape Impact Assessment**

**Landscape Impacts during Construction before Mitigation**

4.18 Landscape impact during construction before mitigation is presented in Table 4.2 and Table 4.3. To demonstrate the thinking and logics of assessment for different cases, which can apply to subsequent assessments for the operation phase and for situations after mitigation, each LR and LCA are described below: -

**LR1 – Theme Park Planting on Flatland**

All planting will be directly or indirectly affected by the large-scale construction, especially during Stage A and B. The impact to the LR will be Substantial. The impact during Stage C will be Insufficient due to the small scale of work involved. Approx. 44 nos. of tree were identified as High Amenity Value and approx. 670 nos. of tree would be affected. Details for tree assessment and recommendation refer to **Appendix 4.1**.

**LR2 – Theme Park Planting on Hillside**
All planting will be directly or indirectly affected by the large-scale construction at all stages. The impact to the LR will be Substantial. Approx. 28 nos. of tree were identified as High Amenity Value and approx. 1378 nos. of tree would be affected. Details for tree assessment and recommendation refer to Appendix 4.1.

LR3 – Roadside Planting

Some of the roadside trees along Wong Chuk Hang road and Ocean Park Road directly or indirectly affected by the construction, especially during Stage A and B. The impact to this LR will be Moderate. The impact during Stage C will be Slight due to the small scale of work involved. Approx. 11 nos. of tree were identified as High Amenity Value and approx. 180 nos. of tree would be affected. Details for tree assessment and recommendation refer to Appendix 4.2.

LR4 – Urban Residential Area Planting

This LR will not be affected by the construction.

LR5 – Hillside Residential Area Planting

This LR will not be affected by the construction.

LR6 – Flatland Institutional and Open Space Planting

This LR will not be affected by the construction.

LR7 – Hillside Institutional Planting

This LR will not be affected by the construction.

LR8 – Hilltop Grassland

This LR will not be affected by the construction.

LR9 – Hillside Shrubs and Small Trees

Approximately $64000m^2$ of this LR will be affected by the project in total. Although this LR consists of only shrubs and small trees, the area is generally natural and has received little disturbance in years. The extensive excavation, the addition of the new rides on the hill, the temporary conveyor belt system along with the barging point, the upgrading of the cable car system, and the construction activities during Stages A and B will induce Substantial impact.

LR10 – Dense Disturbed Hillside Vegetation

Approximately $10,000 m^2$ of this LR will be affected by the project in total. Planting close to LR1 will be directly or indirectly affected by the construction during Stage A and B. The impact to the LR will be Slight.

LR11 – Dense Semi-natural Hillside Vegetation

Approximately $20,000m^2$ of this LR will be affected by the project in total. This LR is relatively rich and sensitive. Impact to it will be Substantial, due to the construction of “The Waterfront”, and the temporary conveyor belt system in Stage A.

LR12 – Natural Rocky Seashore

This LR will not be affected by the construction.

LR13 – Semi-natural Shoreline and Manmade Waterfront

The barging point will disturb approx. $10,000m^2$ waterfront area at Tai Shue Wan, inducing Moderate impact during Stage A. As soon as the hilltop excavation ceases in subsequent stages, the impact should be Slight.

LR14 – Water bodies surrounding Nam Long Shan Peninsula

This LR will not be affected by the construction.
LCA1 – Theme Park on Low Ground
The construction activities in Stage A and Stage B will disrupt the ‘holiday’ and ‘semi-naturalistic’ character of the existing Park, even when the other half is still open to public. The impact will be substantial.

LCA2 – Theme Park on High Ground
The assessment of this LCA is similar to that of LCA1, except the extensive hilltop excavation work in Stage A construction will induce even more substantial impact. There will be construction activities during Stage C, which also induce substantial impact.

LCA3 – Exposed Hillside Landscape
The existing LCA will be disrupted, as its natural terrain will be converted to a construction site for the hilltop excavation of “The Summit” in Stage A. The construction activities in “The Summit” in Stage B will continue to affect the LCA substantially.

LCA4 – Semi-natural Seashore Landscape
The installation and the operation of the conveyor belt system and the barging point (including the barges) for the construction of “The Summit” will impose moderate impacts to the pleasant seashore and hillside throughout all construction stages.

LCA5 – Secluded Hilly Road
The installation and the operation of the conveyor belt system in Stage A will impose moderate impact to the semi-natural hillside character. The impact will be slight in both Stage B and C.

LCA6 – Hillside Urban Fringe Landscape
This LCA will not be affected by the construction.

LCA7 – Mix-use Urban Landscape
This LCA will not be affected by the construction.

LCA8 – Open Institutional Landscape
This manmade urban LCA will be slightly affected during Stage A construction due to the expansion of the Park into the Hong Kong Motoring School.

LCA9 – Industrial Urban Landscape
This LCA will not be affected by the construction.

LCA10 – Secluded Institutional Landscape
This LCA will not be affected by the construction.

LCA11 – Typhoon Shelter Landscape
This LCA will not be affected by the construction.

LCA12 – Natural Seashore Landscape
The natural seashore of this LCA will be slightly affected by the upgrading work for the pump house at Stage A.

LCA13 – Beach Landscape
This LCA will not be affected by the construction.

LCA14 – Low-density Residential Urban Fringe Landscape
This LCA will not be affected by the construction.
LCA15 – Transportation Corridor Landscape
This LCA will not be affected by the construction.

LCA16 – Hillside Institutional Landscape
This LCA will not be affected by the construction.

*Landscape Impacts during Operation before Mitigation*

4.19 Landscape impact during operation before mitigation is presented in Table 4.2 and Table 4.3. Only those LRs and LCAs assessed with Substantial or Moderate impact are described below:

**LR1 – Theme Park Planting on Flatland**
Without proper mitigation measures to maximize protection to existing trees and to carry out tree transplanting during construction, the damage will permanent, inducing Substantial impact during operation.

**LR2 – Theme Park Planting on Hillside**
Without proper mitigation measures to maximize protection to existing trees and to carry out tree transplanting during construction, the damage will permanent, inducing Substantial impact during operation.

**LR3 – Roadside Planting**
Without proper mitigation measures to maximize protection to existing trees and to carry out tree transplanting during construction, the damage will permanent, inducing Moderate impact during operation.

**LR9 – Hillside Shrubs and Small Trees**
The redevelopment design will permanently remove the hilltop (and thus the LR on it) and convert the flat area to a portion of the Park. The impact will be Substantial.

**LR11 – Dense Semi-natural Hillside Vegetation**
Without proper mitigation measures to maximize protection to existing trees and to carry out tree transplanting during construction, the damage will permanent, inducing Substantial impact during operation.

**LCA3 – Exposed Hillside Landscape**
There will be Substantial impact to this LCA during operation, as the natural terrain will be permanently levelled for the Park’s expansion.
Table 4.2  Significance of Landscape Resource Impacts in Construction and Operational Phases BEFORE Mitigation

<table>
<thead>
<tr>
<th>Identity No.</th>
<th>Landscape Resource</th>
<th>Sensitivity to Change (Low, Medium, High)</th>
<th>Magnitude of Change before Mitigation (Negligible, Small, Intermediate, Large)</th>
<th>Impact Significance Threshold BEFORE Mitigation (Insubstantial, Slight, Moderate, Substantial)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LR 1</td>
<td>Theme Park Planting on Flatland</td>
<td>High</td>
<td>Large, Large, Negligible, Large</td>
<td>Moderate, Substantial, Insubstantial, Substantial</td>
</tr>
<tr>
<td>LR 2</td>
<td>Theme Park Planting on Hillside</td>
<td>Medium</td>
<td>Large, Large, Intermediate, Large</td>
<td>Moderate, Substantial, Substantial, Substantial</td>
</tr>
<tr>
<td>LR 3</td>
<td>Roadside Planting</td>
<td>Medium</td>
<td>Intermediate, Intermediate, Small, Intermediate</td>
<td>Moderate, Moderate, Slight, Moderate</td>
</tr>
<tr>
<td>LR 4</td>
<td>Urban Residential Area Planting</td>
<td>Low</td>
<td>Negligible, Negligible, Negligible, Negligible</td>
<td>Insubstantial, Insubstantial, Insubstantial, Insubstantial</td>
</tr>
<tr>
<td>LR 5</td>
<td>Hillside Residential Area Planting</td>
<td>High</td>
<td>Negligible, Negligible, Negligible, Negligible</td>
<td>Insubstantial, Insubstantial, Insubstantial, Insubstantial</td>
</tr>
<tr>
<td>LR 6</td>
<td>Flatland Institutional and Open Space Planting</td>
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<td>Negligible, Negligible, Negligible, Negligible</td>
<td>Insubstantial, Insubstantial, Insubstantial, Insubstantial</td>
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<tr>
<td>LR 7</td>
<td>Hillside Institutional Planting</td>
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<td>LR 8</td>
<td>Hilltop Grassland</td>
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<td>Negligible, Negligible, Negligible, Negligible</td>
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<td>LR 9</td>
<td>Hillside Shrubs and Small Trees</td>
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<td>Large, Large, Negligible, Large</td>
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<tr>
<td>LR 10</td>
<td>Dense Disturbed Hillside Vegetation</td>
<td>Medium</td>
<td>Small, Small, Negligible, Negligible</td>
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</tr>
<tr>
<td>LR 11</td>
<td>Dense Semi-natural Hillside Vegetation</td>
<td>High</td>
<td>Large, Negligible, Negligible, Negligible, Large</td>
<td>Insubstantial, Insubstantial, Insubstantial, Substantial</td>
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<tr>
<td>LR 12</td>
<td>Natural Rocky Seashore</td>
<td>High</td>
<td>Negligible, Negligible, Negligible, Negligible, Small</td>
<td>Insubstantial, Insubstantial, Insubstantial, Slight</td>
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<tr>
<td>LR 13</td>
<td>Semi-natural Shoreline and Manmade Waterfront</td>
<td>Medium</td>
<td>Intermediate, Small, Small, Small</td>
<td>Moderate, Slight, Slight, Slight</td>
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<td>LR 14</td>
<td>Water bodies surrounding Nam Long Shan Peninsula</td>
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Repositioning and Long Term  
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Table 4.3  Significance of Landscape Character Impacts in Construction and Operational Phases BEFORE Mitigation

<table>
<thead>
<tr>
<th>Identity No.</th>
<th>Landscape Character</th>
<th>Sensitivity to Change (Low, Medium, High)</th>
<th>Magnitude of Change before Mitigation (Negligible, Small, Intermediate, Large)</th>
<th>Impact Significance Threshold BEFORE Mitigation (Insubstantial, Slight, Moderate, Substantial)</th>
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<tr>
<td></td>
<td></td>
<td>Construction</td>
<td>Operation</td>
<td>Construction</td>
</tr>
<tr>
<td>LCA 1</td>
<td>Theme Park on Low Ground</td>
<td>High</td>
<td>Low</td>
<td>Large</td>
</tr>
<tr>
<td>LCA 2</td>
<td>Theme Park on High Ground</td>
<td>High</td>
<td>Low</td>
<td>Large</td>
</tr>
<tr>
<td>LCA 3</td>
<td>Exposed Hillside Landscape</td>
<td>High</td>
<td>Medium</td>
<td>Large</td>
</tr>
<tr>
<td>LCA 4</td>
<td>Semi-natural Seashore Landscape</td>
<td>High</td>
<td>Medium</td>
<td>Intermediate</td>
</tr>
<tr>
<td>LCA 5</td>
<td>Secluded Hilly Road</td>
<td>Medium</td>
<td>Medium</td>
<td>Intermediate</td>
</tr>
<tr>
<td>LCA 6</td>
<td>Hillside Urban Fringe Landscape</td>
<td>Low</td>
<td>Low</td>
<td>Negligible</td>
</tr>
<tr>
<td>LCA 7</td>
<td>Mix-use Urban Landscape</td>
<td>Low</td>
<td>Low</td>
<td>Negligible</td>
</tr>
<tr>
<td>LCA 8</td>
<td>Open Institutional Landscape</td>
<td>Medium</td>
<td>Medium</td>
<td>Small</td>
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<tr>
<td>LCA 9</td>
<td>Industrial Urban Landscape</td>
<td>Low</td>
<td>Low</td>
<td>Negligible</td>
</tr>
<tr>
<td>LCA 10</td>
<td>Secluded Institutional Landscape</td>
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<td>Medium</td>
<td>Negligible</td>
</tr>
<tr>
<td>LCA 11</td>
<td>Typhoon Shelter Landscape</td>
<td>Medium</td>
<td>Medium</td>
<td>Negligible</td>
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<tr>
<td>LCA 12</td>
<td>Natural Seashore Landscape</td>
<td>High</td>
<td>High</td>
<td>Small</td>
</tr>
<tr>
<td>Identity No.</td>
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<td>Sensitivity to Change (Low, Medium, High)</td>
<td>Magnitude of Change before Mitigation (Negligible, Small, Intermediate, Large)</td>
<td>Impact Significance Threshold BEFORE Mitigation (Insubstantial, Slight, Moderate, Substantial)</td>
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<td></td>
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<td>Stage A</td>
<td>Stage B</td>
</tr>
</tbody>
</table>
Visual Impact Assessment

General

4.20 Before a brief description of the visual impacts, the general factors affecting the visual condition are described as follows:

1) **Nature of the Development** – The project is a theme park redevelopment with some degree of expansion. It must be noted that some park elements and facilities are intentionally designed to be ‘thematic’, i.e., they are designed to stand out from the surroundings, to be exotic, to be funny and exciting (sometimes even ugly and horrific for Halloween events) and/or to be out of scale. Conventional ways to judge the visual aspects of a civil engineering project or an architectural project are not entirely applicable for this project. This implies the visual sensitivity and impacts to Park visitors will often be low.

2) **Scale and Density of the Development** – Both the existing Ocean Park and the proposed redevelopment/expansion involve large areas in Wong Chuk Hang and Nam Long Shan with the cable car system in between. But they are comprised of a number of relatively small, low and spaced elements with only a few large, tall key structures, such as the Killer Whale Stadium and the Gyro Tower. In short, the project scale is large but the density is low.

3) **Obstacle** – Nam Long Shan itself is the major visual obstacle. Only few VSRs can view at the same time both “The Waterfront” and “The Summit”. Dense mature vegetation and buildings often block views to Ocean Park from some VSRs. For example, view from VSR14 (Shouson Hill) to Ocean Park can be easily blocked by the buildings. There are only few points along the Shouson Hill Road from which one is able to view the existing Ocean Park area in “The Waterfront”. Due to the accessibility problem to some of the ‘prestigious’ residences, the assessment has made certain degree of assumptions.

4) **Distance from VSRs** – VSRs in this project are generally at a distance from Ocean Park. The closer VSRs will be the Park visitors themselves and those developments adjacent to the Park in Wong Chuk Hang. Some VSRs are so far away that many existing and proposed Park facilities will be unnoticeable. Similarly, when considering potential glare from manmade light sources, it is recognised that due to their much lower intensity relative to sunlight, man made light sources are readily absorbed and diffused through air and therefore night-time glare will be much reduced with increasing distance from the source.

5) **Visibility through Air** – Many VSRs have blurred view towards Ocean Park most of the time, even they have a good line of sight. Due to the sub-tropical climate, the visibility limits towards Ocean Park from +500m away is often low.

6) **View Angle/View Frame** – View angle concerns both the horizontal angle and vertical angle. For human eyes, the focus is usually in the middle horizontally and slight lower down vertically. It also depends on how a view is framed for a VSR. For example, many houses in VSR16 (Repulse Bay and South Bay) have been built to orientate to obtain the ‘best’ view towards Deep Bay. As a result, “The Waterfront” will be at the far lower right end of the view frame while “The Summit” will be at the upper left of the view frame. Not many residences have been designed to face directly towards Ocean Park.

7) **Open View/ Panorama** – Human eyes tend to ‘switch’ to panorama when overlooking into a wide open space that is visually and aesthetically pleasing. View angle will also widen and the focus will get loose. Of course, it also depends on the viewer’s ‘mood’ and where the person is standing. For example, a tourist in VSR16 (Repulse Bay & South Bay) will enjoy having a panorama view looking towards the horizon.

8) **Speed of the VSRs** – Visual impact also depends on the travelling speed of the VSRs. Stationary residents will notice more details of the proposed redevelopment than those travellers on roads. For this project, most VSRs are stationary and a few are travellers on road and on sea.
9) **Glare/ Light Pollution** – Glare and light pollution are related to various factors including type and intensity of the light source, angle of view, distance, and the presence and intensity of other background light sources. A qualitative approach will be used in this study to consider possible impacts to the VSRs.

**Glare Study**

4.21 There are two generic types of glare: (1) night-time direct or reflective glare/ light pollution coming from a manmade light source such as floodlights, and (2) day-time reflective glare coming from the sun. The former one is an issue of possible concern for this project because of the natural to semi-natural setting, which at night allows people to enjoy a relatively tranquil setting. The latter one is more difficult to predict as sunlight intensity and directions differ from time to time and season to season. The extent and the intensity of the sunlight also outmatch all manmade sources.

4.22 The Technical Memorandum on EIA Process defines glare in Annex 18 as: “uncomfortable eye feeling caused by light interference from structures faced with mirror or polished materials or from direct light sources generated from the proposed development.” According to this definition, it is not likely that the future park would result in any such glare issue, since there are (a) no structures proposed to be faced with mirror or polished materials, and (b) there would be no man-made light sources directly pointing to sensitive receivers so as to result in any uncomfortable eye feeling. Nevertheless in this assessment a wider perspective of this issue has been taken, to include a consideration of various potential sources of both reflected and man-made light.

4.23 Glare can be described in various ways, for instance, **Blinding Glare** describes effects such as that caused by staring into the sun. It is completely blinding and leaves temporary vision deficient. The Illuminating Engineering Society of North America (IESNA) defines three types of glare: **Disability Glare** is caused by light shining into the eye (such as from an oncoming car’s bright headlights, or from directly seeing the filament of an unshielded or poorly shielded light) that causes reduced contrast of images that could normally be seen without the presence of glare (commonly found in patients with cataracts, and often subjectively referred to as “night-blindness”). **Discomfort Glare** may not result in reduced visual acuity, but can be annoying and irritating. It is experienced on entering an area of very high illumination, or by sunshine on a very bright day. Discomfort glare can be caused at night by very contrast between light and dark areas. **Nuisance or Annoyance Glare** is illumination that causes complaints, and is typically an intrusive light level that can permit reading or may keep someone awake. It is accepted that well designed luminaires and proper light shielding that is correctly adjusted can cure such a problem entirely. In this assessment we are concerned with such nuisance glare since the other aforementioned sources of glare are not likely to occur due to the proposed Park expansion.

**Night-time Glare/ Light Pollution**

4.24 Impact of night-time glare is a rather subjective human feeling and is difficult to measure. Generally, it has been suggested that the feeling of night-time glare is related to the ratio of ‘brightness’ of the manmade light sources to that of the background environment or the ‘ambient’ light. So lighting for specific uses is much brighter but may be better tolerated than a lesser amount of light set against a non-lit background. It is helpful to provide an indication of the light levels of some common light sources against which the Ocean Park lighting levels can be compared in a relative sense. For instance:

- 5-10 lux: Gardens or Path lighting
- 10 lux: Street lighting in residential areas
- 20 lux: Typical street lighting; parking areas
- 40 lux: Adequate for corridor lighting
- 150 lux: Floodlighting of light surfaced buildings
- 100-300 lux: Majority of outdoor recreational sports areas
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- 240 lux: Typical “kitchen” lighting
- 320 lux: Typical in an office
- 200 – 400 lux: Necessary for effective sports environment (including tournament)
- 600 – 800 lux: Typical values measured on the track due to floodlights at the Shatin Racecourse
- 1,000 lux: Major sports/ football stadium
- 2,000 lux: Necessary for night-time television recording/ broadcast (e.g. proposed lighting levels at the Hong Kong Olympic Equestrian Event Main Arena).

4.25 This VIA will take a qualitative approach, by characterising the existing lighting pattern of the district and the existing lighting of Ocean Park, together with descriptions of the intended future lighting that would later be designed in detail and implemented in the lighting strategy of the future Ocean Park.

4.26 The existing lighting pattern of the areas surrounding Ocean Park varies but is generally lower than urban areas at the northern part of Hong Kong Island. There is a substantial drop of light intensity from Wong Chuk Hang, where light levels of about 200-250 lux are found, to Deep Water Bay and Repulse Bay, where the light levels are much lower: about 5-10 lux. There is also a decreasing trend in the light levels from the existing lowland to the headland, which is closer to the open dark ocean to the south.

4.27 The sky in Wong Chuk Hang is mostly lit up at night by high-power floodlights in the Aberdeen Sports Ground and Wong Chuk Hang Recreation Ground, with levels of up to 250 lux. For areas closer to the existing entrance of Ocean Park, the light intensity is lower, but it is still dominated by high-intensity floodlights and high-mast pole lights from various sources outside the Ocean Park, including the tennis courts of the Hong Kong Country Club, Hong Kong School of Motoring, and the bus terminal/ depot, with generally 20 lux for the major roads, 130 lux for the bus terminal, and up to about 300 lux for the tennis court of the Hong Kong Country Club.

4.28 By comparison with the existing background light environment of the area, the existing Ocean Park itself is generally darker, with lux levels ranging from 5-50 lux, except at the entrance (about 200 lux) and along the cable car line, which is lit by floodlights at each cable tower (about 200 lux), the butterfly house (125 lux) and the special lighting for the Go-cart (500 lux). All VSRs to the north of the lowland currently have a view to these existing light sources. In fact, many residences of VSR14 (Shouson Hill) are illuminated by these light sources, and in terms of light pollution, the area is not as ‘tranquil’ as one may have thought. Deep Water Bay, Repulse Bay and South Bay are much less affected. The areas themselves are generally darker and the ‘lighting tone’ is generally warmer. They mainly have view to the floodlights of the cable towers. The existing headland is rather dark, with around 5 lux generally, and the escalator is about 45 lux. The Tai Shue Wan Entrance and Ocean Theatre is brighter, with around 110 to 150 lux. The light sources are only marginally noticeable due to the great distance from the receivers (as the light is mostly absorbed and diffused by air), as well as screening provided by trees and buildings/ structures. Photographs showing the existing night-time lighting environment are shown in Fig 4.5.9 and Fig 4.5.11.

4.29 There are no reported problems due to glare arising from the existing park, even for times when park operating hours have been extended for special events, and when special event lighting is used in addition to some of the existing park lighting. The existing special event lighting consists of additional small scale feature lightings and low intensity ambient lights. Photographs showing the existing special event lighting environment are shown in Fig 4.5.12. The existing visual impact of the special event light is insubstantial, and hence there are no measures adopted for control.

4.30 Broadly speaking, the lighting strategy of the future Park would be consistent with that of the existing Park. The lighting design of the future Park will strictly follow the current standards for lighting intensity such as one briefly listed in Section 4.24. There will be no change for the cable car, and limited change in “the Waterfront”; in fact, the most brightly lit area in the current Waterfront (the Go-Kart area) will not be part of the future Park. Within “The Waterfront”, the portion facing Deep Water Bay, Repulse Bay and South Bay will be sensitively addressed in the detailed design of the lighting
so as to avoid any glare at nearby or more distant receivers. The development planned at “the Summit” will result in illumination of a larger area. Overall, it is envisaged that future park lighting levels would be similar to the existing park, that is, not likely to exceed about 200 lux, which is not generally considered to be a level that could cause glare impact, particularly since there are brighter light sources already in existence in the proximity of the existing park. The impact assessment is set out in later sections of this report.

4.31 Existing lighting at Ocean Park is provided by low-level path lighting and landscape lighting together with “soft tone” external building luminance in some areas. Structures/rides are also illuminated. Floodlighting of extensive areas is generally not needed. The overall lighting strategy for the future park would in principle be similar to the existing park, with lighting designed to be mostly at lower level, designed to complement the landscape and buildings. Future lighting would therefore comprise well-designed mostly low-level lighting to avoid light spillage to outside the park: low-level landscape lights/path lights; intermediate level landscape lights (typically a height of 3-4 m); building (external façade) lights; theatrical, directed spotlighting. There would be no high-mast floodlighting. Any special lighting designs (such as uplighting, spreadlighting, feature spotlighting, etc.) would be carefully designed so as not to spill light towards sensitive receivers. A high degree of light shielding (e.g. full cut-off optics) would be used where necessary and practicable. International standard for recommended level of lighting intensity for all kind of area/activities would be referenced during detailed design stage. Any special lighting for the shows would be arranged so as to “design-out” any possible glare impact at sensitive receivers, by using directional or “theatrical” spot lighting and certainly by ensuring that any show lighting is not directed towards any sensitive receiver. Other design alternatives for minimising the potential visual impact include specification of lights that avoid light-pollution, lighting design which takes into careful consideration of mounting height and direction of lighting fixtures, and well planned lighting operation schedules which prevents use of unnecessary lighting left on after business hours. The potential for reflected light would also be considered in the design. In general, the lighting strategy would be to reduce lighting levels to the minimum necessary for the function or guided by factors such as pedestrian safety.

Cable Car Glare and affect on Manly Villa

4.32 The existing cable car has lighting provided for safety reasons on each stanchion, along the cables and the rescue path. The light level provided along the rescue path is 10 lux and 200 lux on each stanchion. Each stanchion light is angled downwards along the stanchion itself with minimal light spillage to adjacent areas. The purpose is to light only the stanchion itself and not the surrounding area (refer to the photograph in Fig. 4.5.11, which was taken from a very close distance - only a few metres away and also underneath the light source). The distance from the stanchion light to the closest sensitive receiver (Manly Villa) is 103 metres at the closest point. That is over ten times the distance from the light source shown in Fig. 4.5.11. In the photograph in Fig. 4.6.18 (view from the Shouson Hill area) the closest cable car stanchion can be seen at a distance of 326 metres and the light on the stanchions can only be seen as small isolated points of light in the middle distance. It can be appreciated that the impact of the light source, which is not directed at the sensitive receivers, diminishes greatly with increasing distance; at more than 300 metres distance, the light is only a marginal source in the overall field of view.

4.33 Currently the park switches off the lights on the cable car stanchions about half an hour after park closing time, so the lights are off by about 6:30PM under normal conditions, but the lights remain switched on until about 11:00 PM every Saturday night during the summer during the extended opening hours. There have been no complaints regarding lighting during the extended operation hours. In future, the park opening hours would be extended and the cable car lights would be switched off by around 10:30 PM – similar to the existing arrangements during extended summer time operating hours. As the closest distance between the light source on the cable car stanchion and Manly Villa is over 100 metres, and the light is directed downwards with minimum light spillage to the surroundings, it is anticipated that there would not be a significant glare impact at the sensitive receiver.
Night Shows

Ocean Park intends to extend its opening hours at night after the redevelopment. At the Aqua City area of “the Waterfront”, there will be some family-oriented low-key shows of short duration (approximately 20 minutes) possibly featuring large “sea creature” balloons, coloured lights illuminating the water and musical fountains, and soft and directional theatrical lights would play across the water and the Aquarium, with lighting always directed away from any sensitive receiver. Conceptual sketches of such a show are shown on Plate B of Fig 4.1.4. Images and video clips (such as water ripples) may be projected across the façade of the Aquarium to create a metaphor of the aquatic environment while these sea creatures dance around with the music. The night shows are intended to illuminate the “sea creatures” and should not be mistaken as ‘light shows’. The light intensity and directivity will adjusted so that there would be no resulting potential for light pollution to affect areas such as Shouson Hill, Deep Water Bay, Repulse Bay and South Bay.

Day-time Glare

Day-time reflective glare is even more difficult to assess and quantify. A qualitative approach will also be taken by considering the following factors/characteristics of the glare:

- **Sunlight Intensity/Heat** – Sunlight intensity varies at different time of a day and on different dates of a year. It peaks at noon at summer, and with the combination of heat at a close distance, reflective glare may become very disturbing.

- **Reflectivity/Tone** – All surfaces reflect light; that is why we can see them. A surface that reflects more light may produce glare. In general, the lighter the tone and the smoother the surface, the more likely a glare occurs. Metallic surfaces and glazing surfaces are potential sources of glare.

- **Size of Reflective Surface** – The larger the size of a reflective surface, the more noticeable and disturbing the glare will be. Large paved surfaces and buildings with large roofs are potential sources of glare.

- **Nature of Reflective Surface** – Glare coming from a reflective surface of a completed Park element may be annoying, but glare coming from a construction site may be even more annoying. This is an unavoidable human feeling. Large-scale earthwork that exposes extensive areas of bare yellowish soil is a concern.

- **Relative Altitude/View Angle** – Glare from below the eyeline is a greater concern because human eyes are more used to bright light sources from above and are often pointed slightly downwards. The great intensity of the sun and background luminance of the sky also makes glare above eyeline less annoying. This means studying the relative altitude or the angle of line-of-sight between a glare source and viewers is important. For this project, “The Summit” is up high on the hilltop and “The Waterfront” is lower at a valley while the altitudes of different VSRs also vary. There will be different combinations of relative altitudes, and an assessment is shown on Table 4.6.
Orientation and Shape of Reflective Surface – Different orientation of a reflective surface will produce different intensity of glare to receivers located at different relative altitude at different time of a day. This is illustrated on Table 4.4 & Table 4.5 by using scenarios at noon (strong sunlight coming from above) and at morning/ dusk (weaker sunlight coming from near eyelevel) respectively:

Table 4.4   Example Matrix for Assessment of Glare – Noon

<table>
<thead>
<tr>
<th>Orientation of Reflective Surface</th>
<th>Relative Altitude of Reflective Surface</th>
<th>Higher</th>
<th>Same</th>
<th>Lower</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horizontal</td>
<td>Higher</td>
<td>Negligible Glare</td>
<td>Moderate Glare</td>
<td>Substantial Glare</td>
</tr>
<tr>
<td>Tilted</td>
<td>Same</td>
<td>Slight Glare</td>
<td>Substantial Glare</td>
<td>Substantial Glare</td>
</tr>
<tr>
<td>Vertical</td>
<td>Same</td>
<td>Slight Glare</td>
<td>Slight Glare</td>
<td>Slight Glare</td>
</tr>
</tbody>
</table>

Table 4.5   Example Matrix for Assessment of Glare – Morning or Dusk

<table>
<thead>
<tr>
<th>Orientation of Reflective Surface</th>
<th>Relative Altitude of Reflective Surface</th>
<th>Higher</th>
<th>Same</th>
<th>Lower</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horizontal</td>
<td>Higher</td>
<td>Negligible Glare</td>
<td>Slight Glare</td>
<td>Moderate Glare</td>
</tr>
<tr>
<td>Tilted</td>
<td>Same</td>
<td>Negligible Glare</td>
<td>Moderate Glare</td>
<td>Moderate Glare</td>
</tr>
<tr>
<td>Vertical</td>
<td>Same</td>
<td>Slight Glare</td>
<td>Moderate Glare</td>
<td>Slight Glare</td>
</tr>
</tbody>
</table>

For similar materials, a tilted surface (e.g. a pitch roof) is most likely to cause glare, followed by a vertical surface (e.g. building façade) and finally a horizontal surface (e.g. flat roof). One shape that entails all these three characteristics simultaneously is a dome-shape, which is likely to cause glare at most angles, at most relative altitudes, at most time of a day and at most dates of a year if reflective material is used.

4.36 Concern on day-time reflective glare should focus on cases in which: (1) substantial sunlight will possibly be reflected to the surroundings; (2) highly reflective materials are specified to suit design themes; (3) the glare source or the reflective surface is placed below the eyelevel of a VSR, (4) the design requires a flat, tilted or pitched surface, (5) the design requires a dome-shape structure, (6) the design of a large structure with flat or uniform surface, and/or (7) where glare is coming from a construction site in which other nuisances (e.g. noise, polluted air, unpleasant view) may amplify the adverse effect of glare.
4.37 Theme park design for the project is on going. Major themes have been designated to various parts of the Park but no individual building form has yet been finalized. The glare assessment in this report has been based on conceptual architectural/landscape forms to develop recommendations for theme park designers to consider. There are great opportunities to avoid possible visual impact through good design.

**Visual Impact during Construction Before Mitigation**

4.38 The Magnitudes of Visual Impact and Impact Significance Threshold during construction BEFORE mitigation are summarized in Table 4.7. The detailed assessment for each VSR is illustrated below:

**VSR1 – Ocean Park “The Waterfront”**

This VSR will get a full, close view towards the work at “The Waterfront” itself during Construction Stages A, B and C. During Stage A, there will be Substantial impact due to the general construction activities, associated works and utilities and road and traffic diversion measures for Entry Plaza, the underground carpark and Aqua City. Exposed soil from extensive site preparation and excavation work may also produce some day-time glare. During Stage B, there will be Substantial impact, due to the construction of the Birds of Paradise, Whisker’s Harbour, Back of House and other associated works. During Stage C, the impact will become Insufficient due to the relatively small scale of the work.

**VSR2 – Ocean Park Cable Car**

This VSR will get a full, close view towards the work at both “The Waterfront” and “The Summit” during Construction Stages A and B. During Stage A, the impact will be substantial due to the extensive hill top excavation in “The Summit” and the large-scale construction of the main Entry Plaza and the underground car park. The excavation will also expose large area of yellow soil, which may produce unpleasant day-time glare (and heat) below eyelevel in hot summer. During Stage B, due to the extensive construction work of “The Waterfront” and “The Summit”, there will be Substantial impact. Due to the relative small scale of work in Stage C, the impact should be Insufficient.

**VSR3 – Ocean Park “The Summit”**

This VSR will get a full, close view towards the work at “The Summit” itself during Construction Stages A, B and C. During Stage A, the impact will be substantial due to the extensive hill top excavation in “The Summit”, the operation of the conveyor belt system and the construction of vet pool. The large-scale construction work may also produce some day-time glare. During Stage B, the impact will be Substantial due to the extensive construction of the Marine World. During Stage C, the impact will reduce to Moderate due to the smaller scale of work.

**VSR4 - Tai Shue Wan**

This VSR will have a close, partial view to the temporary conveyor belt system and the barging point, throughout Stages A, B and C. There will be substantial impact due to the excavation, general construction and associated activities of the proposed works of Stage A, along with the construction and the use of the conveyor belt system and the barging point. During Stage B, the construction will be mostly at the southeast portion of “The Summit” and the VSR will have partial view to it. The impact during Stage B will thus reduce to Moderate. During Stage C, the construction will be mostly at the southwest portion of “The Summit”. Although the construction scale is smaller, the VSR will have clearer view to it. The impact during Stage C will thus continue to be Moderate.

**VSR5 – Nam Long Shan Road**

This VSR will get a close, partial view to the barging point and the conveyor belt system, which will be actively used during Stage A. Hence, the impact will be Moderate. However, impact in Stage B and C will be reduced to Slight as such activities reduce.
VSR6 – Police School and Aberdeen Sports Centre
This VSR has a close partial view towards the construction of “The Waterfront”. Due to the extent of the Entry Plaza and the Aquarium constructed during Stage A, there will be Moderate impact. However, there will be Insubstantial impacts during subsequent stages, which are further away from the VSR.

VSR7 – Southwest Nam Fung Road
This VSR has a partial view at a distance of 500m towards the construction of “The Waterfront”. Due to the extensive construction of the Entry Plaza, the underground car park and other proposed works, there will be Substantial impact during Stage A. The impact will be reduced to Moderate in Stage B, as the work is further away from the VSR. The impact during Stage C will be Insubstantial due to the small scale of work.

VSR8 – Wong Chuk Hang Industrial Zone
The visual impact of this VSR is insubstantial due to its low receptor sensitivity and low degree of visibility towards Ocean Park.

VSR9 – Wong Chuk Hang Estate
This VSR has limited views towards the Stage A construction of “The Waterfront” at distance of approximately 500m. Hence, the impact will be Slight. The works in Stage B and C are even further away and thus the impacts will both be Insubstantial.

VSR10 – Aberdeen Typhoon Shelter & Po Chong Wan
This VSR has a partial to full views towards “The Summit”, the barging point and the conveyor belt system. The extensive excavation work during Stage A and the construction and use of the conveyor belt system and the barging point on the water edge will induce Substantial visual impact. However, due to the greater distance and smaller extent of the proposed works of Stages B and C, the resulting impact for both will reduce to Moderate.

VSR11 – Ap Lei Chau
This VSR has views similar to that of VSR10, except it has a clearer, elevated view from some high-rise residential development, at a minimum distance of about 1500m. The visual impact will be Substantial during Stage A and will become moderate during subsequent stages.

VSR12 – Yuk Kwai Shan & Ap Lei Pai
This VSR has views similar to that of VSR10 but at reduced, minimum distance of about 1000m. However, due to significantly fewer population of receivers, lower sensitivity and lower magnitude of impact, the resulting visual impact will generally be lower. Hence, the visual impact will be Slight during Stage 1 and insubstantial for both Stages 2 and 3.

VSR13 – Aberdeen Urban Area
Due to the low sensitivity and low magnitude of impact, the visual impact will be Insubstantial throughout Stages A, B and C.

VSR14 – Shouson Hill
The views from this VSR are partial to full towards “The Waterfront” depending on the area concerned, and at a minimum distance of about 500m. As the Park will expand into the existing Hong Kong School of Motoring during Stage A, construction activities (including those for utilities, road and traffic diversion) will induce Moderate impact to the VSR. The construction works at the Entry Plaza and Aquarium will also produce day-time glare below eyelevel during hot summer. During Stage B although this is not considered to be any significant change from the large areas of un-landscaped paved areas existing at present. The even closer proximity of the construction activities (including those for Whisker’s Harbour and Birds of Paradise) will continue to induce Moderate impact. However, the impact will reduce to Slight during the Stage C, of which the scale and extent of the work for “The Waterfront” is much smaller.
VSR15 – Deep Water Bay

This VSR will have a clear, panoramic view towards “The Summit” and close, glimpse of “The Waterfront”. During Stage A, the extensive hilltop excavation and associated construction activities at “The Summit” will induce Moderate impact to the VSR. During Stage B, the construction of “The Whisker’s Harbour” will also induce Moderate impact. Possible construction site floodlights in both stages may also potentially result in some night-time glare/light pollution, affecting the ‘tranquil’ nature of the seashore. However, there will be Insubstantial impact during Stage C due to the small scale of work in “The Waterfront”.

VSR16 – Repulse Bay & South Bay

Although the VSR is far (minimum 2 km) from the construction, residents at higher altitude within the VSR zone will have a clear view, especially towards the extensive hilltop excavation for “The Summit”. Due to the high sensitivity and high-quality existing view overlooking the ocean from the VSR, the impact during Stage A will be Moderate. Exposed soil from the excavation would create only minor glare due to great distance. The impact for subsequent stages will reduce slightly, as the construction becomes less extensive, but still induce Moderate impact. Possible construction site floodlights in both stages may also produce some night-time glare/light pollution, affecting the ‘tranquil’ nature of the seashore.

VSR17 – Chung Hom Kok

This VSR will have view similar to that from VSR16. But with a greater distance (minimum 2500m), slightly lower receiver population and slightly lower sensitivity, impact will be moderate during Stage A and will become insubstantial during subsequent Stages.

VSR18 – East Lamma Channel

This VSR will have full to partial view of “The Summit” throughout all stages of construction. But with a great distance (minimum 2000m) and low, mobile receiver population, impact will be Slight during Stage A and will become Insubstantial during subsequent Stages.

VSR19 – Lamma Island

This VSR will have view similar to that from VSR18 but at a much greater distance (minimum 4000m). Some of the residents at higher altitude within the VSR zone may be able to view the excavation work at “The Summit” but the impact is considered insubstantial due to the great distance. Impact will be Slight during Stage A and will become Insubstantial during subsequent stages.

VSR20 – Shum Shui Kok

This VSR has full, close view of “The Summit” throughout all construction Stages. In Stage A, the significant hill excavation work and the general construction in “The Summit” will induce Substantial impact. In Stage B, the construction works of “The Summit” will also induce Substantial impact. The impact will significantly reduce to Insubstantial in Stage C due to the small scale of work.

VSR21 – Tai Tam Country Park

This VSR will only have a glimpse view to the construction and as the distance is also large, the impact will be Insubstantial during all stages of construction.

VSR22 – Wong Nai Chung Gap

This VSR will have a view similar to VSR21. The impact will be Insubstantial during all stages of construction.

VSR23 – Mount Cameron & Mount Nicholson

This VSR will only have a glimpse of the construction at “The Summit” and as the distance is also quite large, the impact the impact will be Insubstantial during all stages of construction.
VSR 24 – Aberdeen Reservoir & Magazine Gap
This VSR will have a view similar to VSR23. The impact will be Insufficient during all stages of construction.

VSR25 – Mount Gough and Mount Kellet
This VSR will have partial view of “The Summit”. With the distance large, the impact during Stage A will be Insufficient. The impact will further reduce during Stages B and C.

VSR26 – Victoria Peak & Pok Fu Lam Country Park
Due to its distance and low degree of visibility, the impact during all stages of construction will be Insufficient.

VSR27 – Aberdeen Tunnel
Due to its distance and low degree of visibility, the impact during all stages of construction will be Insufficient.

VSR28 – Manly Villa
This VSR will have a full, close view to the entire construction of “The Waterfront”. The impact during Stage A and Stage B will be Substantial. Possible construction site floodlights in both stages would also produce some night-time glare/light pollution. The impact will be significantly decreased during Stage C as the extent of construction decreases.

Visual Impacts in Operation Phase before Mitigation

4.39 The magnitudes of the impact on VSRs and Impact Significance Threshold during operation BEFORE mitigation are shown in Table 4.7. Brief descriptions of the adverse impacts of Substantial and Moderate significance are described below:-

VSR7 – Southwest Nam Fung Road
The Entry Plaza, which will expand to the existing Hong Kong Motoring School area, will induce significant impact to the VSR. The impact, however, may be considered as somewhat beneficial because the existing Motoring School is no more than massive bituminous paving with some buildings. As the Entry Plaza will consist of extensive paving, the VSR may suffer from Moderate day-time glare. There will be some potential night-time glare from the Entry Plaza lighting (around 200 lux), but it will be quite negligible compared to the existing floodlights in the nearby Sports Ground (around 200 – 250 lux), which dominate the nearfield views from this receiver location, and because the Entry Plaza would be relatively distant (minimum 500m) and therefore apparent light levels would be reduced through air diffusion.

VSR14 – Shouson Hill
The planned landscaping to the Entry Plaza in “The Waterfront” will induce Medium impact when compared to the existing combination of bare hardstanding of the Ocean Park Carpark and the Hong Kong Driving School. The VSR will enjoy a reduced level of day-time glare from the Entry Plaza when compared to the existing Carpark, PTI and Waterworld. There will be some potential night-time glare from the Entry Plaza lighting (around 200 lux) and from the nightly lagoon show, but this would be insubstantial compared to the existing floodlights in the Sports Ground (up to 250 lux) and light from the tennis court of the nearby Country Club (about 300 lux). In fact the tennis courts are much closer to the VSRs in Shouson Hill than the Entry Plaza and tend to dominate the light levels in this area, compared to the generally lower light levels experienced in the existing Ocean Park.

VSR15 – Deep Water Bay
Without mitigation (i.e. without careful attention to the design of the park lighting), there would be some night-time glare affecting the ‘tranquil’ nature of the seashore. Newly introduced buildings and Park elements of “The Waterfront”, especially near “the Waterfront” facing Deep Water Bay, might introduce some Moderate impact but this would be mitigated by sensitive treatment through detailed
design. However, the majority of VSRS in Deep Water Bay are some distance (1km) from the Ocean Park.

**VSR16 – Repulse Bay & South Bay**

This VSR has a clear view to “The Summit”. The Redevelopment would include excavation and expansion of guest facilities to Nam Long Shan. The major source of impact would be the loss of vegetated landform of Nam Long Shan. Due to its high sensitivity and greater receiver population, this VSR would suffer from Moderate Impact during construction. Thereafter, once the landscaping is in place there would only be Slight Impact. In terms of night-time glare, there would be some Slight Impact to this VSR similar to that for VSR15. However, the distance from the Park to the VSRS is substantial (2km) and, even set against the relatively low background luminance, there would be considerable diffusion of light through air with resultant lowering of the perceived light levels.

**VSR28 – Manly Villa**

Newly introduced buildings and Park elements of “The Waterfront” within 100m distance, especially near the waterfront facing Deep Water Bay, will impose Moderate impact. There will be some potential night-time glare/ light pollution problem from various parts of “The Waterfront”, but will be quite insubstantial compared to the existing floodlights in the Sports Ground and from the tennis court of the nearby Country Club. The Cable Car lighting (about 200 lux) would remain the same as the existing condition and Entry Plaza lighting (about 200 lux) would be broadly similar to the existing situation. The brightly-lit Go-Kart area would no longer be present in the future and would be replaced by areas of path lighting and generally lower-level lighting (for comparison, the existing butterfly house is about 125 lux). These light levels are much lower than light at the existing Sports Ground (about 250 lux) and the Country Club tennis courts (about 300 lux), which are reasonably close to the VSRS (200m) at Manly Villa and tend to dominate the light background in the area.

**Potential Glare**

4.40 The overall lighting strategy for the future park would in principle be similar to the existing park, with lighting designed to be mostly at lower level, designed to complement the landscape and buildings. Path lighting would be similar to the existing situation where safety is of concern. International standard for recommended level of lighting intensity for all kind of area/ activities would be referenced during detailed design stage. Any special lighting for the shows would be arranged so as to “design-out” any possible glare impact at sensitive receivers, by using directional or “theatrical” lighting and certainly by ensuring that any show lighting is not directed towards any sensitive receiver. The potential for reflected light would also be considered in the design. Impact likely to arise as a result of glare, in the un-mitigated situation, is included in the paragraphs above for each sensitive receiver potentially affected. In summary, even without mitigation measures only a few sensitive receivers would be potentially exposed to glare. For night-time glare from lighting, only VSRS 15 (Deep Water Bay) and 16 (Repulse Bay/ South Bay) are considered to be moderately affected.

**Photomontage of Unmitigated Visual Impact**

4.41 Representative VSRS’ location selected for generating photomontage is shown on Fig 4.4.4. Existing views and computer-generated photomontages of unmitigated visual impact is shown on Fig 4.6.2 to Fig 4.6.21.
## Table 4.6 Extent of View and Relative Altitudes of VSRs Compared with Ocean Park

<table>
<thead>
<tr>
<th>ID No.</th>
<th>VSR</th>
<th>&quot;The Waterfront&quot;</th>
<th>&quot;The Summit&quot;</th>
<th>&quot;Temporary Conveyor Belt System and Bargeing Point&quot;</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>View (Full, Partial, Glimpse, No View) with Minimum Distance Between VSR &amp; Source of Impact (m)</td>
<td>Relative Altitude of Possible Glare Source (Higher, Same, Lower)</td>
<td>View (Full, Partial, Glimpse, No View) with Minimum Distance Between VSR &amp; Source of Impact (m)</td>
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<td>OPER</td>
<td>CONST</td>
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<td>Partial to Full (close)</td>
<td>Higher to Lower (Possible Glare)</td>
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<td>Full (close)</td>
<td>Lower (Possible Glare)</td>
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<td>VSR 11</td>
<td>Ap Lei Chau</td>
<td>No View (2000)</td>
<td>No View (2000)</td>
<td>-</td>
</tr>
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</table>
## Repositioning and Long Term Operation Plan of Ocean Park

### Environmental Impact Assessment Study

### Table: View (Full, Partial, Glimpse, No View) with Minimum Distance Between VSR & Source of Impact (m)

<table>
<thead>
<tr>
<th>ID No.</th>
<th>VSR</th>
<th>View (Full, Partial, Glimpse, No View)</th>
<th>Relative Altitude of Possible Glare Source (Higher, Same, Lower)</th>
<th>View (Full, Partial, Glimpse, No View)</th>
<th>Relative Altitude (Higher, Same, Lower)</th>
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<td>Relative Altitude of Possible Glare Source (Higher, Same, Lower)</td>
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<td>OPER</td>
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<td>High</td>
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<td>Moderate</td>
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</tbody>
</table>

ID No. 28 Manly Villa
4.42 The recommended landscape and visual mitigation measures are mapped on Fig. 4.6.1 (Operation phase only) and are tabulated in Table 4.8 (Construction and Operation phases), together with an indication of the responsible parties for funding, implementation, management and maintenance. Approval from the management and maintenance departments on mitigation measures to be taken over by them has been sought.

4.43 Photo illustrations for the typical mitigation measures are shown on Fig. 4.7.1.

4.44 Recommended mitigation measures, which are applicable to individual LR, LCA and VSR, are tabulated in Table 4.9 to Table 4.11.

4.45 All Construction Phase measures shall be implemented from the start of the relevant phase of the construction period and be applied for the whole duration of the relevant phases of the Construction period.

4.46 All Operational Phase measures shall be included in the detailed design and shall be implemented during the construction. All measures will be implemented by contractors to be employed by Ocean Park.
<table>
<thead>
<tr>
<th>ID No.</th>
<th>Nature/ Type</th>
<th>Landscape and Visual Mitigation Measure</th>
<th>Funding / Implementation</th>
<th>Management / Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td>CM-01</td>
<td>Design/ Construction Planning</td>
<td>Temporary Tree Nurseries - Due to accessibility difficulties, new large trees are prone to be damaged when being transported within the Park. Small on-site temporary tree nurseries may be set up at various locations at an early stage to allow small trees to grow during the construction period. By the time these trees are needed at the end of the construction for each Phase, they will have matured and grown. They will require minimal pruning and suffer much less damage during transplanting, as the moving distance from an on-site rather than off-site nursery will be much smaller. These trees may also be positioned as visual mitigation during the construction period.</td>
<td>Ocean Park</td>
<td>N/A</td>
</tr>
<tr>
<td>CM-02</td>
<td>Design/ Construction Planning</td>
<td>No-intrusion zone - To maximize protection to existing trees, ground vegetation and the associated under-storey habitats, construction contracts may designate ‘no-intrusion zones’ to various areas of the site where no construction activities will take place. Simple but durable boundary fences may be set up around each zone. The contractor shall instruct their staff and their subcontractors not to enter the zones, even for non-direct construction activities, such as lunch break, resting, urination etc. The construction contract may require the contractors to derive contractually enforceable mechanism to monitor its staff and its subcontractors and to penalize violators.</td>
<td>Ocean Park</td>
<td>N/A</td>
</tr>
<tr>
<td>CM-03</td>
<td>Design/ Construction Planning</td>
<td>Hoarding – Two generic types of hoarding or boundary fencing for construction shall be considered. One type should be graphical and thematic, and visually ‘impermeable’ to block view into the construction. It shall be used for areas in close contact with visitors and for areas where visual intrusion is a critical concern. The other should be subtle, camouflaged and more ‘permeable’ so that they fit into the surrounding existing landscape. It will be used for areas to be viewed at a distance.</td>
<td>Ocean Park</td>
<td>N/A</td>
</tr>
<tr>
<td>CM-04</td>
<td>Site Practice</td>
<td>Hill Fire Prevention - Burning shall be strictly prohibited onsite to prevent hill fire. Welding activities shall be properly monitored and followed up. Smoking shall only be permitted in designated areas. The Contractor shall include in the safety plans ways to prevent hill fire, to patrol, to ensure good house keeping, to combat hill fire, and to develop an evacuation plan. The construction Contract shall refer the local laws and shall include enforceable clauses to require the Contractor to compensate loss of existing trees (even outside the Park boundary) due to hill fires where due to the negligence of the Contractor.</td>
<td>Ocean Park</td>
<td>N/A</td>
</tr>
<tr>
<td>CM-05</td>
<td>Site Practice</td>
<td>Appearance of Construction Workers - A recent example from the expansion project of the Hong Kong International Airport shows a great concern on possible impacts of construction workers to users of existing facilities. To protect the image of the Park, construction workers may enter park areas only with their helmets and safety vests properly stored or carried in non-transparent bags. They shall also dress properly and cleanly. The construction contract should require the main contractor to derive enforceable mechanism to monitor its staff and its subcontractors and to penalize violators.</td>
<td>Ocean Park</td>
<td>N/A</td>
</tr>
<tr>
<td>ID No.</td>
<td>Nature/ Type</td>
<td>Landscape and Visual Mitigation Measure</td>
<td>Funding / Implementation</td>
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<tr>
<td>CM-06</td>
<td>Site Practice</td>
<td>Dust and Erosion Control for Exposed Soil - The cutting of Nam Long Shan is at a prominent location on top of the hill highly visible from surrounding areas. Slope cutting shall be planned and carried out with well-planning and with caution to suppress dust. Exposed soil shall be covered or ‘camouflaged’ and watered often. Areas that are expected to be left with bare soil for a long period of time shall be hydroseeded and covered with suitable protective fabrics. Due to the exposed nature of the site, additional measures may be necessary during windy conditions. Existing vegetation, including trees, surrounding the work site should be also be watered periodically during dry periods to remove dust accumulated on foliage. Silt and erosion shall be controlled by ground barriers around the slope cutting area.</td>
<td>Ocean Park</td>
<td>N/A</td>
</tr>
<tr>
<td>CM-07</td>
<td>Site Supervision</td>
<td>Quarterly Report on Existing Trees – To ensure protection to existing trees to be retained or transplanted during construction, the construction contract may require the Contractor to provide a quarterly photographic report on such trees.</td>
<td>Ocean Park</td>
<td>N/A</td>
</tr>
<tr>
<td>CM-08</td>
<td>Site Supervision</td>
<td>Inspection/ Supervision by Relevant Resident Site Staff – Due to the special nature of the project, Ocean Park and the main contractor should employ sufficient resident landscape architects and landscape inspectors of works to ensure a due consideration of landscape and visual impacts and mitigations throughout the construction period.</td>
<td>Ocean Park</td>
<td>N/A</td>
</tr>
<tr>
<td>CM-09</td>
<td>Design/ Construction Planning</td>
<td>Construction Plant/ Machinery – To minimize the visual intrusion of construction activities to tourists and visitors, a suitable color scheme of construction machines and plants shall be adopted if available. Construction machines and plants shall be cleaned on a regular basis.</td>
<td>Ocean Park</td>
<td>N/A</td>
</tr>
<tr>
<td>CM-10</td>
<td>(Not used)</td>
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</tr>
<tr>
<td>CM-11</td>
<td>(Not used)</td>
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<tr>
<td>CM-12</td>
<td>Design/ Construction Planning</td>
<td>Irrigation Water – A large amount of fresh water will be required for planting new vegetation. Some planting may be carried out in advance when irrigation network is not complete. Some planting, such as hillside planting, is not even intended to be served by permanent irrigation systems. The Contractor should plan reliable water source and distribution networks, including possible temporary water tanks and water trucks, for irrigation.</td>
<td>Ocean Park</td>
<td>N/A</td>
</tr>
<tr>
<td>CM-13</td>
<td>Design/ Construction Planning</td>
<td>The baring point and The conveyor belt system – The removal of excavated material from the Summit requires installation of a conveyor and a baring point. The conveyor will be covered, except the portion where it meets the baring point. The aim of covering or enclosing the conveyor is to avoid noise and air quality issues; however, the conveyor where above-ground should be adequately screened and/ or constructed of suitable materials and in colours/ tones that minimize visual intrusion. Due to the existing pleasant setting of the area, the baring point structure (including possible docking locations of barges) shall be properly screened. The appearance of the conveyor shall be carefully designed. The alignment of the conveyor and the location may be adjusted on site to avoid unnecessary disturbance to existing trees.</td>
<td>Ocean Park</td>
<td>N/A</td>
</tr>
</tbody>
</table>
### CM-14 Site Practice

**Construction Light** – All security floodlights for construction sites shall be equipped with adjustable shield, frosted diffusers and reflective covers, and be carefully controlled to minimize light pollution and nighttime glare to the nearby residences. The Contractor should consider other security measures, such as infrared cameras, which impose lower impacts.

**Ocean Park**  
**N/A**

### OM-01 Design/Construction Planning

**Large-size Plants** – The completed Park will seek to provide an ‘immediate’ greening effect for enjoyment. Whenever technically possible, such as in flat areas, use trees in ‘Semi-mature’ and ‘Heavy-standard’ sizes.

**Ocean Park**  
**Ocean Park**

### OM-02 Design/Construction Planning

**Tree Transplanting** – Trees of high to medium survival rate after transplanting to be affected by the works shall be transplanted. Where practicable, trees shall be directly transplanted to permanent onsite locations.

**Ocean Park**  
**Ocean Park, By others if outside Ocean Park**

### OM-03 Design/Construction Planning

**Tree Compensation Ratio** – The proposed redevelopment of the Park is an expansion of the developed area of the Park and a reduction in the natural or undeveloped portion of the Park. For the Summit, there would be a considerable reduction in the numbers of existing shrubs and an overall reduction in planting areas. Existing trees to be felled shall be compensated at a min. 1:1 ratio by new trees.

**Ocean Park**  
**Ocean Park, By others if outside Ocean Park**

### OM-04 Design/Construction Planning

**Balanced Woodland Mix** – Some areas of the development will require special, exotic planting, such as large palm trees in Tropical Forest, to match themes of the areas. Wherever thematic planting is not required, planting of native woodland mix species shall be maximized to preserve or to re-create a native landscape and ecological habitats. However, many of the woodland species are only available in the market in small or whips size, which will fail to give ‘instant’ greening effect. A balanced mix of small and large size plants of different species shall be carefully selected.

**Ocean Park**  
**Ocean Park, By AFCD if outside Ocean Park**

### OM-05 Design/Construction Planning

**Hardy Plants** – There is a substantial variation of vegetation coverage and density on the existing site. Careful consideration on sun orientation, altitude, wind direction, proximity to sea, and other microclimate factors to select correct species of plants will be necessary. Proposed vegetation, including that in thematic areas, shall be of species that tolerate the exposed and salty environment of the site.

**Ocean Park**  
**Ocean Park, By others if outside Ocean Park**

### OM-06 Design/Construction Planning

**Minimize Impacts on Existing Vegetation** – Removal of existing vegetation should be minimized through careful planning and master layout on park facilities. Some of the proposed works, such as roadworks along Wong Chuk Hang Road and the Hypercoaster in the Summit, do not require landform leveling and their layout may be adjusted at an early design stage to suit existing vegetation. A detailed tree survey and assessment shall be carried out after an EIA approval.

**Ocean Park**  
**Ocean Park, By others if outside Ocean Park**

### OM-07 Design/Construction Planning

**On-structure Planting** – A substantial portion of planting in the Waterfront will be on-structure/ on-slab, over the proposed car park. Sufficient soil depth, structural loading, and drainage should be allowed. Minimum 1200mm soil depth (excluding subsoil drainage layer) should be provided for large trees.

**Ocean Park**  
**Ocean Park**

### OM-08 Design/Construction Planning

**Reuse of Existing Soil** – Existing topsoil shall be reused where possible for new planting areas within the project. The construction program shall consider using the soil removed from one phase for backfilling another. Suitable storage ground, gathering ground and mixing ground may be set up onsite as necessary.

**Ocean Park**  
**Ocean Park**

### OM-09 Design/Construction Planning

**Trees for Landform Change** – The Summit development will require cutting of the existing Nam Long Shan to form flatland for new facilities. Fast-growing tree species shall be planted along the east edge and the west edge to visually offset the landform change.

**Ocean Park**  
**Ocean Park**

### OM-10 Design/Construction Planning

**Not used.**
| OM-11 | Site Supervision | **Establishment Period** – Most construction contracts in Hong Kong require the Contractor to carry out routine horticultural operations, including watering, pruning, weeding, pest control, replacement of dead plants etc. to ensure healthy establishment of new planting during a 12 month establishment period. This Period also serves as a kind of warranty/guarantee on the quality of the plants supplied and installed by the Contractor. There will be a significant fraction of woodland/hillside/slope planting that requires planting of whips or seedlings. The quality of these small plants is sometimes difficult to assess in one growing season. The 12 month establishment period will incentivize the Contractor to provide quality materials and uphold good maintenance. | Ocean Park | Ocean Park |
| OM-12 | Design/ Construction Planning | **Irrigation Water** – Some hillside planting may not be intended to be served by permanent irrigation system. The Contractor should plan reliable water source and distribution networks, including possible temporary water tanks and water trucks, to ensure sufficient watering during the Establishment Period. | Ocean Park | Ocean Park |
| OM-13 | Design/ Construction Planning | **Enhancement along Public Roads in Wong Chuk Hang** – The proposed roadwork outside the new Ocean Park boundary near Wong Chuk Hang Road and Ocean Park Road should minimize affecting existing roadside trees. The roadside amenity areas shall be enhanced with extensive planting. | Ocean Park | Ocean Park, By HyD/ LCSD if outside Ocean Park |
| OM-14 | Design/ Construction Planning | **Boundary with Neighbors** – Boundary features and boundary fence walls, especially those to be shared with neighboring development such as the Hong Kong Country Club, shall be carefully designed. | Ocean Park | Ocean Park |
| OM-15 | Design/ Construction Planning | **Overall Lighting Strategy** – Theme park design would carefully consider a reasonable level of functional and thematic lighting with due consideration of possible light pollution and night-time glare to the surroundings. Consideration shall be made by the lighting designers to the following measures:  - lighting shall be designed with due consideration of mounting height and direction of light fixtures so as not to point directly towards any sensitive receiver  - lighting shall be arranged with due consideration of reflectance so as to avoid glare effect  - lighting shall be regularly monitored during operation  - lights located adjacent or in proximity to neighbors shall be carefully designed to prevent possible light intrusion  - lighting operation schedule shall specify only lights necessary for security to be left on after business hours  - paving materials should be selected as necessary to reduce potential glare from surface reflectance  - particular attention should be paid to the use of lighting having a high intensity or harsher tone (e.g. metal halide lamps)  - lights shall generally be models having precise cut-off range (such as full cut-off optics where available and practicable) and if necessary be fitted with adjustable anti-glare shields. | Ocean Park | Ocean Park |
| OM-16 | Design/ Construction Planning | **Large Building Form** – Special attention should be paid to eliminating reflective glare from sunlight. Finishing materials shall have due consideration to form, basic color, color/ tone variation, micro- and macro- texture, and reflectivity/ light absorbance to avoid glare. | Ocean Park | Ocean Park |
| OM-17 | Design/ Construction Planning | **Retaining Wall Design** – Some portion of the proposed redevelopment will be built against the hillside. Leveled platforms will be created and in association with retaining walls. The layout and treatment of retaining walls shall be an integral part of the proposed park facilities. Other treatments, such as planting in front of walls, that are sympathetic to the surroundings may also be considered. | Ocean Park | Ocean Park |
Appearance and Greening for Non-thematic Elements – The appearance of individual park facilities and elements is mostly determined by designed themes. However, for non-thematic elements that are not of ‘utility’ nature, such as water tanks, sympathetic design on the form, color, and texture shall be provided to attain a visual balance for the overall site and also to accentuate thematic elements. Planting, such as turf, low groundcovers and climbers, may also be planted on top of these elements to provide greening and aesthetic effect.

Overall Greening Strategy – Woodland mix planting with native trees and shrubs would be adopted where practicable.
Residual impacts

Residual Landscape Impacts (Construction Phase)

4.47 The potential significance of impacts to LRs during construction after mitigation is provided in Table 4.9. The potential significance of impacts to LCAs during construction after mitigation is provided in Table 4.10.

4.48 With mitigation measures, there are no LRs or LCAs anticipated to have substantial adverse impacts during the construction phase. The LRs and LCAs experiencing residual adverse landscape impacts of moderate significance in the construction phase are listed below.

LR1 – Theme Park Planting on Flatland
Due to the extensive construction activities for “The Waterfront”, the residual impact during construction on the LR will be Moderate.

LR2 – Theme Park Planting on Hillside
Due to the extensive construction activities for “The Summit”, the residual impact during construction on the LR will be Moderate.

LR9 – Hillside Shrubs and Small Trees
Due to the extensive hill excavation and the significant disturbance of existing vegetation from the construction activities, the residual impact during construction on the LR will remain significant.

LR11 – Dense Semi-natural Hillside Vegetation
Due to the significant disturbance of existing vegetation from the construction of the temporary conveyor system and the barging point, the residual impact of construction on the LR will be Moderate.

LCA1 – Theme Park on Low Ground
Due to the extensive construction activities for “The Waterfront”, the residual construction impact on this LCA will be Moderate.

LCA2 – Theme Park on High Ground
Due to the extensive construction activities for “The Summit”, the residual construction impact on this LCA will be Moderate.

LCA3 – Exposed Hillside Landscape
Due to the extensive construction activities for “The Summit”, the residual construction impact on this LCA will be moderate.

Residual Landscape Impacts (Operation Phase)

4.49 The potential significance of impacts to LRs during operation after mitigation is provided in Table 4.9. The potential significance of impacts to LCAs during operation after mitigation is provided in Table 4.10.

4.50 Both assessments assume that the appropriate mitigation measures as recommended in Table 4.8 will be implemented, with the full effect of the soft landscape mitigation measures accomplished by Year 10.

4.51 With mitigation measures taking place, there will be no LRs or LCAs anticipated to have substantial adverse impacts. The LRs and LCAs experiencing residual adverse landscape impacts of moderate significance in the operation phase are listed below and indicated in Table 4.9 and Table 4.10.
LR1 – Theme Park Planting on Flatland
Due to the disturbance to the retained trees and transplant trees, the residual impact on the LR will be Moderate on Day 1 and Slight in Year 10 as the trees shall be fully recovered.

LR2 – Theme Park Planting on Hillside
Due to the disturbance to the retained trees and transplant trees, the residual impact on the LR will be Moderate on Day 1 and Slight in Year 10 as the trees shall be fully recovered.

LR9 – Hillside Shrubs and Small Trees
Due to the extensive hill excavation and the significant disturbance of existing vegetation, the residual impact on the LR will be Moderate on Day 1 and Slight in Year 10 as the reinstatement vegetation grows to size.

LR11 – Dense Semi-natural Hillside Vegetation
Due to the temporary conveyor belt system and the barging point, which requires existing vegetation removal, the residual impact on the LR will be Moderate on Day 1 and Slight in Year 10 as the reinstatement vegetation grows to size.

LCA3 – Nam Long Shan
Due to the substantial hill excavation and significant change of landform at “The Summit”, the residual impact on the LCA will be Moderate on Day 1 and Slight in Year 10 as the new tall trees grow to size to counterbalance the landform change.

Residual Visual Impacts (Construction Phase)
4.52 The potential significance of visual impacts during construction after mitigation is provided in Table 4.11.
4.53 The VSRs experiencing residual adverse impacts of moderate significance in the construction phase are listed below.

VSR1 – Ocean Park “The Waterfront”
Due to extensive construction at “The Waterfront” itself, with possible Day Time Glare, and the close proximity to the VSR (Park visitors), the residual impact during construction will be Moderate.

VSR2 – Ocean Park Cable Car
Due to the scale and extent of construction both in “The Waterfront” and “The Summit”, with possible Day Time Glare, the residual impact during construction will be Moderate.

VSR3 – Ocean Park “The Summit”
Due to extensive hill excavation work and construction at “The Summit” itself, and the close proximity to the VSR (Park visitors), with possible Day Time Glare, the residual impact during construction will be Moderate.

VSR7 – Southwest Nam Fung Road
Due to extensive construction at “The Waterfront”, and the close proximity to the VSR, the residual impact during construction will be Moderate.

VSR14 – Shouson Hill
Due to the construction of the Entry Plaza, the underground car park, the associated utilities, road and traffic diversion, with possible Day Time Glare, and the close proximity to the VSR, the residual impact during construction will be Moderate.
VSR15 – Deep Water Bay
Due to extensive hill excavation work, the construction of “The Summit” and “Whisker’s Harbour”, with possible slight increase in night time light level, and the reasonably close proximity to the VSR, the residual impact will likely be Moderate during the construction phase.

VSR16 – Repulse Bay & South Bay
Due to extensive hill excavation work, the construction of “The Summit” and “Whisker’s Harbour”, the residual impact during construction will be Moderate.

VSR20 – Shum Shui Kok
Due to extensive hill excavation work, the use of the conveyor belt system and the barging point (including possible docking barges), the construction of “The Summit”, the residual impact will likely be Moderate during the construction phase.

VSR28 – Manly Villa
Due to the construction of the Whisker Harbour, with possible slight increase in night time light level, and the close proximity to the VSR, the residual impact during construction will be Moderate.

Residual Visual Impacts (Operation Phase)

4.54 The potential significance of visual impacts during operation after mitigation are provided in Table 4.11.

4.55 The assessment assumes that the appropriate mitigation measures as recommended in Table 4.8 will be implemented, with the full effect of the visual mitigation measures by Year 10.

4.56 With the mitigation measures in place, there will be no VSRs anticipated to have substantial adverse impacts. The VSRs experiencing residual adverse impacts of moderate significance in the operation phase are listed below.

VSR14 – Shouson Hill
Due to the extent and scale of the permanent design at “The Waterfront”, some loss of existing vegetation and its close proximity to the Park, the residual impact will be Moderate from Day 1. As vegetation grows and the Park ages, the residual impact in Year 10 will be reduced to Slight. Set against the existing background light condition, and taking into account mitigation provided by sensitive lighting design (particularly direction of lighting and special design to avoid light intrusion) and screening provided by structures/buildings and vegetation, there will be no residual effect from glare.

VSR15 – Deep Water Bay
The proposed redevelopment will definitely increase the basic need for minimum lighting at the Whisker’s Harbour, and will induce slight light pollution to the seashore of Deep Water Bay. With the substantial permanent landform change in “The Summit” and permanent design of “The Whisker’s Harbour”, the ‘tranquillity’ of the coastline will be affected. The residual impact will be Moderate in Day 1. As vegetation grows and the Park ages, the residual impact in Year 10 will become Slight. Taking into account the mitigation provided by sensitive lighting design (particularly direction of lighting and special design to avoid light intrusion) and screening provided by structures/buildings and vegetation, there will be no residual effect from glare.

VSR16 – Repulse Bay & South Bay
This VSR will experience a similar pattern of impact to VSR 15. But with possible faster pace of residential development within the VSR, it is likely the residual impact in Year 10 will become Slight. Taking into account the mitigation provided by sensitive lighting design (particularly direction of
lighting and special design to avoid light intrusion) and screening provided by structures/buildings and vegetation there will be no residual effect from glare.

**VSR28 – Manly Villa**

This VSR will experience a similar pattern of impact to VSR14.

**Summary of Glare Assessment**

**Day-time glare**

From a consideration of the likely building forms, locations, etc., it was noted that glare impacts could possibly arise. Therefore, various options for avoidance of glare impact have been recommended for detailed consideration in the design of the building form and materials/colours to be used (refer to OM-16 in **Table 4.8**). Essentially, glare would be “designed-out” of the development. It is suggested that the project architect would be a competent person to ensure that suitable building forms and materials are adopted to avoid glare. It is concluded that, with careful consideration in the design stage and adoption where necessary of suitable design features, there would be no residual glare impact.

**Night-time glare**

The assessment has identified that the existing Ocean Park and surroundings are at night generally influenced by many and various existing light sources, although the intensity diminishes towards certain areas such as “the Summit” area. With regard to potential night-time glare from the redeveloped park and especially due to the later opening hours, the assessment has considered various mitigation requirements (as set out in OM-15 of **Table 4.8**). Further detailed consideration to avoid and mitigate night-time glare will be a requirement of the lighting strategy/design to be developed during detailed design. Essentially, glare would be “designed-out” of the development. It is recommended that a competent person, trained in the theory and practice of outdoor lighting and illumination requirements and lighting systems be employed to design the overall lighting strategy to avoid night-time glare. This assessment has concluded that, with careful consideration in the design stage and adoption where necessary of suitable design features, there would be no residual glare impact from night-time lighting.

Photomontage of Residual Visual Impact

4.57 Photomontages of Residual Visual Impact for Day 1 and Year 10 after mitigation are illustrated in **Fig. 4.6.9 – Fig. 4.6.21**.

Conclusion

4.58 There will be several residual landscape impacts due to the proposed construction:

- **LR1** – Theme Park Planting on Flatland
- **LR2** – Theme Park Planting on Hillside
- **LR9** – Hillside Shrubs and Small Trees
- **LR11** – Dense Semi-natural Hillside Vegetation
- **LCA1** – Theme Park on Low Ground
- **LCA2** – Theme Park on High Ground
- **LCA3** – Nam Long Shan
- **LCA4** – Semi-natural Seashore Landscape
- **VSR1** – Ocean Park “The Waterfront”
- **VSR2** – Ocean Park Cable Car
- **VSR3** – Ocean Park “The Summit”
- **VSR7** – Southwest Nam Fung Road
Repositioning and Long Term Operation Plan of Ocean Park Environmental Impact Assessment Study

VSR14 – Shouson Hill
VSR15 – Deep Water Bay
VSR16 – Repulse Bay & South Bay
VSR20 – Shum Shui Kok
VSR28 – Manly Villa

4.59 Once the proposed mitigation measures have been implemented and the proposed tree planting matured after 10 years, all impacts in the operation phase will be insubstantial, except slight impact on LR1, LR2, LR9, LR11, LCA3, VSR7, VSR14, VSR15, VSR16 and VSR 28. In addition, both daytime reflective and night-time glare may slightly affect these VSR groups.

4.60 With reference to criteria defined in Annex 10 of the EIAO TM, landscape and visual impacts in the construction and operational phases will be acceptable after applying mitigation measures.
Table 4.9  Recommended Mitigation Measures and Residual Impact AFTER Mitigation for LR

<table>
<thead>
<tr>
<th>Identity No.</th>
<th>Landscape Resource</th>
<th>Recommended Mitigation Measures</th>
<th>Residual Impact Significance Threshold AFTER Mitigation (Insubstantial, Slight, Moderate, Substantial)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Construction</td>
<td>Operation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CM-</td>
<td>OM-</td>
</tr>
<tr>
<td>LR 1</td>
<td>Theme Park Planting on Flatland</td>
<td>04,06, 07, 08,12</td>
<td>01,02,03,04,05,06,07, 08, 11,14, 18</td>
</tr>
<tr>
<td>LR 2</td>
<td>Theme Park Planting on Hillside</td>
<td>01,04,06, 07, 08,12</td>
<td>01,02,03,04,05,06,09,07,08,11,12, 18</td>
</tr>
<tr>
<td>LR 3</td>
<td>Roadside Planting</td>
<td>07, 08</td>
<td>01,02,03,06,13</td>
</tr>
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<td>LR 4</td>
<td>Urban Residential Area Planting</td>
<td>N/A</td>
<td>N/A</td>
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<td>LR 5</td>
<td>Hillside Residential Area Planting</td>
<td>02</td>
<td>13,14</td>
</tr>
<tr>
<td>LR 6</td>
<td>Flatland Institutional and Open Space Planting</td>
<td>02</td>
<td>N/A</td>
</tr>
<tr>
<td>LR 7</td>
<td>Hillside Institutional Planting</td>
<td>02</td>
<td>14</td>
</tr>
<tr>
<td>LR 8</td>
<td>Hilltop Grassland</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>LR 9</td>
<td>Hillside Shrubs and Small Trees</td>
<td>02,04,06,07,08,12</td>
<td>01,02,03,04,05,06,08,09,11,12, 18, 19</td>
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<tr>
<td>LR 10</td>
<td>Dense Disturbed Hillside Vegetation</td>
<td>02,04,07,08</td>
<td>01,02,03,04,05,06,08,11,12</td>
</tr>
<tr>
<td>LR 11</td>
<td>Dense Semi-natural Hillside Vegetation</td>
<td>01,04,07,08, 12</td>
<td>01,02,03,04,05,06,08, 09,11,12, 18</td>
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<tr>
<td>LR 12</td>
<td>Natural Rocky Seashore</td>
<td>06</td>
<td>06</td>
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<tr>
<td>LR 13</td>
<td>Semi-natural Shoreline and Manmade Waterfront</td>
<td>08,13</td>
<td>06</td>
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<td>LR14</td>
<td>Water bodies surrounding Nam Long Shan Peninsula</td>
<td>N/A</td>
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Table 4.10  Recommended Mitigation Measures and Residual Impact AFTER Mitigation for LCA

<table>
<thead>
<tr>
<th>Identity No.</th>
<th>Landscape Character Area</th>
<th>Recommended Mitigation Measures</th>
<th>Residual Impact Significance Threshold</th>
<th>AFTER Mitigation</th>
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<tbody>
<tr>
<td>LCA 1</td>
<td>Theme Park on Low Ground</td>
<td>02, 03,05, 06, 07, 08, 09, 14</td>
<td>01,02, 03, 04, 06, 07, 11, 12, 14, 15, 16, 17, 18, 19</td>
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<tr>
<td>LCA 2</td>
<td>Theme Park on High Ground</td>
<td>01,02,03,05,06,07,08,09,12,13</td>
<td>01,02,03,04, 05, 06, 07, 09, 11, 12, 15, 16, 17, 18, 19</td>
<td>Moderate</td>
</tr>
<tr>
<td>LCA 3</td>
<td>Exposed Hillside Landscape</td>
<td>01, 02, 03, 05, 07, 08, 09, 12</td>
<td>01,02,03,04,05,06,09,11,12, 13, 15, 16, 17, 18, 19</td>
<td>Moderate</td>
</tr>
<tr>
<td>LCA 4</td>
<td>Semi-natural Seashore Landscape</td>
<td>02,03,05,08,09,13</td>
<td>N/A</td>
<td>Moderate</td>
</tr>
<tr>
<td>LCA 5</td>
<td>Secluded Hilly Road</td>
<td>01, 02, 03,05,07,08,13</td>
<td>01,02,03,04,06,11,12</td>
<td>Slight</td>
</tr>
<tr>
<td>LCA 6</td>
<td>Hillside Urban Fringe Landscape</td>
<td>N/A</td>
<td>N/A</td>
<td>Insubstantial</td>
</tr>
<tr>
<td>LCA 7</td>
<td>Mix-use Urban Landscape</td>
<td>N/A</td>
<td>N/A</td>
<td>Insubstantial</td>
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<tr>
<td>LCA 8</td>
<td>Open Institutional Landscape</td>
<td>03,05,06,09,14</td>
<td>01, 06, 07, 11, 12, 13, 14, 15, 16, 17, 18, 19</td>
<td>Slight</td>
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<tr>
<td>LCA 9</td>
<td>Industrial Urban Landscape</td>
<td>N/A</td>
<td>N/A</td>
<td>Insubstantial</td>
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<tr>
<td>LCA 10</td>
<td>Secluded Institutional Landscape</td>
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<td>N/A</td>
<td>Insubstantial</td>
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<tr>
<td>LCA 11</td>
<td>Typhoon Shelter Landscape</td>
<td>N/A</td>
<td>N/A</td>
<td>Insubstantial</td>
</tr>
<tr>
<td>LCA 12</td>
<td>Natural Seashore Landscape</td>
<td>N/A</td>
<td>N/A</td>
<td>Insubstantial</td>
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<tr>
<td>LCA 13</td>
<td>Beach Landscape</td>
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<tr>
<td>LCA 14</td>
<td>Low-density Residential Urban Fringe Landscape</td>
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<td>LCA 15</td>
<td>Transportation Corridor Landscape</td>
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<td>N/A</td>
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<td>LCA 16</td>
<td>Hillside Institutional Landscape</td>
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<tr>
<td>ID No.</td>
<td>Key Visual sensitive receiver (VSR)</td>
<td>Recommended Specific Mitigation Measures</td>
<td>Residual Impact Significance Threshold AFTER Mitigation (Insubstantial, Slight, Moderate, Substantial)</td>
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<td>Operation</td>
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<td>CM-</td>
<td>OM-</td>
<td>CONSTRUCTION</td>
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<td>DAY 1</td>
<td>YEAR 10</td>
<td></td>
</tr>
<tr>
<td>VSR 1</td>
<td>Ocean Park “Waterfront” 01, 02, 03, 05, 06, 07, 08, 09, 14</td>
<td>01, 02, 03, 04, 06, 07, 11, 12, 13, 14, 15, 16, 18</td>
<td>Moderate (Daytime Glare)</td>
<td>Insubstantial</td>
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<tr>
<td>VSR 2</td>
<td>Cable Car 01, 03, 05, 06, 07, 08, 09, 14</td>
<td>01, 02, 03, 04, 06, 07, 08, 09, 11, 12, 15, 16, 17, 19</td>
<td>Moderate (Daytime Glare)</td>
<td>Insubstantial</td>
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<tr>
<td>VSR 3</td>
<td>Ocean Park “The Summit” 01, 02, 03, 05, 06, 07, 08, 09, 14</td>
<td>01, 02, 03, 04, 05, 06, 07, 09, 11, 12, 15, 16, 17, 18</td>
<td>Moderate (Daytime Glare)</td>
<td>Slight</td>
</tr>
<tr>
<td>VSR 4</td>
<td>Tai Shue Wan 01, 02, 03, 05, 07, 08, 09, 13, 14</td>
<td>N/A</td>
<td>Slight</td>
<td>Slight</td>
</tr>
<tr>
<td>VSR 5</td>
<td>Nam Long Shan Road 03, 05, 06, 09, 13, 14</td>
<td>N/A</td>
<td>Slight</td>
<td>Insubstantial</td>
</tr>
<tr>
<td>VSR 6</td>
<td>Police School and Aberdeen Sports Centre</td>
<td>02, 03, 05, 06, 09, 14</td>
<td>06, 07, 13, 15, 16, 18</td>
<td>Slight</td>
</tr>
<tr>
<td>VSR 7</td>
<td>Southwest Nam Fung Road</td>
<td>03, 09, 14</td>
<td>13, 15, 16, 18</td>
<td>Moderate</td>
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<tr>
<td>VSR 8</td>
<td>Wong Chuk Hang Industrial Zone</td>
<td>N/A</td>
<td>N/A</td>
<td>Insubstantial</td>
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<tr>
<td>VSR 9</td>
<td>Wong Chuk Hang Estate and Welfare Road</td>
<td>03, 09, 14</td>
<td>11, 13, 15, 16, 18</td>
<td>Insubstantial</td>
</tr>
<tr>
<td>VSR 10</td>
<td>Aberdeen Typhoon Shelter &amp; Po Chong Wan</td>
<td>02, 03, 05, 09, 13, 14</td>
<td>02, 04, 06, 09, 11, 15, 16, 18</td>
<td>Slight</td>
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<tr>
<td>VSR 11</td>
<td>Ap Lei Chau</td>
<td>02, 03, 05, 13, 14</td>
<td>02, 04, 06, 09, 11, 15, 16, 18</td>
<td>Slight</td>
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<tr>
<td>VSR 12</td>
<td>Yuk Kwai Shan &amp; Ap Lei Pai</td>
<td>02, 03, 05, 13, 14</td>
<td>02, 04, 06, 11, 15</td>
<td>Insubstantial</td>
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<tr>
<td>VSR 13</td>
<td>Aberdeen Urban Area</td>
<td>N/A</td>
<td>N/A</td>
<td>Insubstantial</td>
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<tr>
<td>VSR 14</td>
<td>Shouson Hill</td>
<td>01, 03, 05, 09, 14</td>
<td>01, 04, 05, 06, 13, 14, 15, 16, 18, 19</td>
<td>Moderate (Daytime Glare)</td>
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<tr>
<td>VSR 15</td>
<td>Deep Water Bay</td>
<td>01, 03, 05, 07, 08, 09, 14</td>
<td>01, 04, 05, 09, 15, 16, 18, 19</td>
<td>Moderate (Night time Glare / Light Pollution)</td>
</tr>
<tr>
<td>VSR 16</td>
<td>Repulse Bay &amp; South Bay</td>
<td>01, 03, 09, 14</td>
<td>01, 04, 05, 06, 09, 15, 16, 19</td>
<td>Moderate</td>
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<tr>
<td>VSR 17</td>
<td>Chung Hom Kok</td>
<td>01, 03, 14</td>
<td>N/A</td>
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<td>VSR 18</td>
<td>East Lamma Channel</td>
<td>N/A</td>
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<td>VSR 19</td>
<td>Lamma Island</td>
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<td>N/A</td>
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<td>ID No.</td>
<td>Key Visual sensitive receiver (VSR)</td>
<td>Recommended Specific Mitigation Measures</td>
<td>Residual Impact Significance Threshold AFTER Mitigation (Insubstantial, Slight, Moderate, Substantial)</td>
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<td>CONSTRUCTION</td>
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<td>OM-</td>
<td>DAY 1</td>
</tr>
<tr>
<td>VSR 20</td>
<td>Shum Shui Kok</td>
<td>01, 03, 05, 07, 08, 09, 14</td>
<td>01, 02, 04, 05, 06, 09, 15, 16, 19</td>
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<tr>
<td>VSR 21</td>
<td>Tai Tam Country Park</td>
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<tr>
<td>VSR 22</td>
<td>Wong Nai Chung Gap Road</td>
<td>01, 03, 09, 14</td>
<td>15, 16, 19</td>
<td>Insubstantial</td>
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<tr>
<td>VSR 23</td>
<td>Mount Cameron &amp; Mount Nicholson</td>
<td>N/A</td>
<td>N/A</td>
<td>Insubstantial</td>
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<tr>
<td>VSR 24</td>
<td>Aberdeen Reservoir &amp; Magazine Gap</td>
<td>N/A</td>
<td>N/A</td>
<td>Insubstantial</td>
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<tr>
<td>VSR 25</td>
<td>Mount Gough and Mount Kellet</td>
<td>03, 14</td>
<td>15, 16</td>
<td>Insubstantial</td>
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<tr>
<td>VSR 26</td>
<td>Victoria Peak &amp; Pok Fu Lam Country Park</td>
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<td>N/A</td>
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<tr>
<td>VSR 27</td>
<td>Aberdeen Tunnel</td>
<td>N/A</td>
<td>N/A</td>
<td>Insubstantial</td>
</tr>
</tbody>
</table>
| VSR 28 | Manly Villa                        | 01, 02, 03, 04, 05, 06, 07, 08, 09, 12, 14 | 01, 02, 03, 04, 05, 06, 07, 11, 12, 14, 15, 16, 17, 18 | Moderate | Moderate | Slight | (Night time Glare)