

## 5 LANDSCAPE AND VISUAL IMPACTS

### 5.1 Introduction

5.1.1 The impact of the Project on the landscape and townscape has been assessed in detail in the Outline Landscaping and Visual Assessment Report. The EIA and Landscape & Visual Assessment Reports have been submitted concurrently, with the conclusions and recommendations of the Landscape and Visual Assessment Report included in this EIA Report for completeness. The Landscape and Visual Assessment Report is a ‘stand alone’ report suitable for review by all interested agencies.

#### *Objectives*

5.1.2 The purpose of the Landscape and Visual Assessment is to determine the impact of R9 on key elements of the landscape within the study area and on sensitive visual receivers. Mitigation measures are proposed and their effectiveness assessed over a ten-year period. Based on the nature and severity of the potential impacts, practical mitigation measures are proposed in line with the urban and industrial setting of the alignment. The assessment analyses the existing landscape character of the study area and identifies the degree of compatibility of the Project with its environs.

5.1.3 The objectives of the Landscape and Visual Assessment are:

- to describe the R9 project in terms of its structural components and required construction works areas;
- to describe the affected landscape areas;
- to determine the visibility of the road and to identify key visual receptors and views;
- to assess the nature and severity of the potential landscape and visual impacts; and
- to recommend suitable landscape and visual mitigation measures.

#### *Study Area*

5.1.4 The study area for the landscape assessment is defined by a distance of 500m from the proposed alignment (Figure 1.1). All potentially affected sensitive receivers must be considered in the visual impact assessment, regardless of the distance from the proposed R9 alignment. References to land use zonings of relevant Outline Zoning Plans are detailed in Section 10. In practice, views of R9 will be limited by the SAR’s mountainous topography, the dense urban development areas, and Hong Kong’s frequently hazy visibility.

#### *Legislation and Planning Guidelines*

5.1.5 The Technical Memorandum on the EIA Process published under Section 16(5) of the EIA Ordinance contains guidelines for Landscape and Visual Impact Assessment and criteria for determining the significance of landscape/visual impacts. In addition, the Landscape and Conservation Chapter of the HKPSG outlines design criteria to be considered when planning new developments. The eastern tunnel portal encroaching slightly into the Landscape Protection Area in Tsing Yi as designated in Metroplan.

## 5.2 Methodology

5.2.1 For the purposes of the assessment process, a distinction is drawn between *landscape* and *visual* impacts:

- landscape impacts relate to the effects of development upon the physical fabric or components of the landscape; and
- visual impacts relate to the changes resulting from the Project to individual receptor groups' views of the landscape.

5.2.2 The methodology adopted for this study is defined in detail in the Landscape and Visual Impact Assessment Report and is suitable for the assessment of infrastructure projects of the scale and nature of R9.

### *Landscape Impacts*

5.2.3 Landscape impacts are assessed at three levels in terms of:

- the impact upon individual landscape features;
- the aggregate impact upon discrete areas of the site (Landscape Character Areas, LCAs); and
- the overall impact of R9 on the study area.

5.2.4 This approach builds an overview of the landscape impact across the site. Landscape impacts are predicted primarily on the basis of the order of change to baseline conditions prevalent at the time of assessment.

### *Visual Impacts*

5.2.5 The assessment of visual impact is structured by individual receptor groups. Each receptor group's sensitivity to changes in the nature of their views is evaluated. Receptors are identified through the definition of a Visual Envelope, or Zone of Visual Influence (ZVI), within which views of the Project will be possible, and the categorisation of individuals into 'receptor groups' within the defined envelope area. The sensitivity of receptors is categorised as being high, moderate or low.

### *Assessment Criteria*

5.2.6 The criteria utilised to define potential impacts as one of the three generic categories of Severe, Moderate or Low are given below.

5.2.7 The degree of impact on landscape resources depends on:

- the character and quality of the existing landscape;
- key features of the existing landscape;
- the nature of predicted impacts;
- the degree of change to key features;
- the ability of the landscape to accommodate change (i.e. sensitivity); and
- the significance of any change within a local and regional context.

5.2.8 The degree of impact on visual amenity depends on:

- the value of existing and future views;
- the degree of change to existing and future views;
- the proximity of the receptor;
- the sensitivity of the receptor;
- the number of receptors in group; and
- the availability and amenity value of alternative views.

5.2.9 The effects of the development, which are considered negligible in their impact (i.e. low), are termed *insignificant* whereas **moderate** and **severe** impacts are considered as *significant*.

5.2.10 As a result of the highly interdependent nature of the effects of Project, proposals to mitigate adverse landscape and visual impacts are considered together.

5.2.11 Landscape and visual impacts have, wherever possible, been reduced through the engineering design or have been the subject of specific mitigation proposals. These proposals vary in scope from general criteria for the appearance of the major highway elements and lighting details to the introduction of specific revegetation proposals. Additional mitigation proposals are outlined for the construction and operational phases of the Project.

5.2.12 Mitigation proposals in relation to both landscape and visual impacts may, in some instances, only be effective in the long-term (i.e. by Year 10) e.g. through the provision of screen or slope planting. The acceptability of residual impacts, which remain after all effective mitigation is introduced, is also assessed.

### 5.3 Summary of Landscape and Visual Assessment

5.3.1 The R9 corridor is located within the existing urban/industrial/container terminal areas of Tsing Yi and West Kowloon. The western highway section connects with the major highway structures of R3 and crosses the generally undeveloped industrial zone on Sai Tso Wan reclamation platform of northwest Tsing Yi. The highway emerges from the East Nam Wan Tunnel Portals in a steep hillside valley above Tsing Yi Road. The valley supports a natural tall scrubland cover and contains a seasonal rocky stream course, which will be affected by the portal works.

5.3.2 The southeast Tsing Yi Interchange section of R9 will link Stonecutter's Bridge with the port backup area to the north. The bridge will span the Rambler Channel, extending from the planned CT9 to CT8, and will be set against the dense urban development areas to the north as well as the adjacent container terminals and industrial areas. The Ngong Shuen Chau Viaduct corridor is between CT8 and Stonecutter's Base and extends towards the Lai Wan Interchange on the WKR. The interchange will eventually link the WKH, R3 and the local road network at Lai Chi Kok/ Cheung Sha Wan.

5.3.3 Given the existing character and features of the area, the overall long-term landscape impact of R9 will be low. R9 structures linking the north Tsing Yi interchange with the western portal will be visually compatible and will merge with the other roads in the vicinity. The landscape impact will be low. The only significant adverse landscape

impact will be the local landform and vegetation disturbance at the eastern Nam Wan Tunnel portal. With site reinstatement and slope revegetation, the landscape impact in this area in Year 10 will be moderate and will further decrease as the plantings mature.

- 5.3.4 Stonecutter's Bridge will form a feature of the Western Harbour, the design should be sympathetic to the surrounding environment. The remainder of the highway structures, with suitable attention to design and lighting details, will blend with the existing and planned highways, container terminals and industrial uses in the area.
- 5.3.5 Views of R9 will generally be subject to visual intrusion from the industrial, urban and residential development areas and highway and container terminal infrastructure. Stonecutter's Bridge will be the most visible section of R9 and will form a feature of the overall landscape.
- 5.3.6 The majority of the visual receptors for the R9 project are classified as being of low sensitivity given their distance from the alignment and/or the quality of their existing views. The construction, day of opening and long-term visual impacts for the majority of the visual receptors will be low given the urban/industrial setting of the alignment, the viewing distance, and partial screening by the intervening development areas and topography. Stonecutter's Bridge will be a visual focus for the alignment.
- 5.3.7 Residents of the closest areas on east Tsing Yi are considered to be the only high sensitivity receptors for the Project, and will be subject to moderate visual impacts during construction of the southeast Tsing Yi Interchange. The long-term visual impact of this section of viaduct will be low in the context of the port backup area and CT9.
- 5.3.8 The future residents of the proposed developments on eastern Ma Wan form the medium sensitivity receptor group for R9. The visual impacts of the western R9 section will be low given the viewing distance and the visual context of the existing highway infrastructure, reclamation areas and industrial premises on northwest Tsing Yi.
- 5.3.9 It is as yet undecided if the road should be tolled, therefore contingency should be made for provision of a toll plaza. This will be located at southeast Tsing Yi, adjacent to the tunnel portal. This would also accommodate the administration building (2 storeys). The portal structure will be located at a height of approximately 65m, however, the visual impact assessment concludes that the receivers are sufficiently distant that there should not be adverse visual impact. The receivers affected would be recreational users on Tsing Yi.

#### **5.4 Landscape and Visual Impact Mitigation**

- 5.4.1 A range of construction and operational phase landscape and visual impact mitigation measures are recommended to blend the highway with the adjacent development areas and to minimise the identified adverse impacts. These mitigation proposals include:
- retention of vegetation at the Nam Wan Tunnel Portals;
  - protection of portal vegetation and the stream below the East Nam Wan Tunnel Portals during construction;
  - minimisation of the land requirements and associated vegetation and stream disturbance for the temporary construction access road to the eastern Nam Wan Tunnel portals;

- erection, painting and maintenance of site hoardings around works and storage areas;
- restrictions on the height of material/spoil stockpiles;
- prompt hydroseeding of disturbed areas and cut/fill slopes prior to the permanent landscaping works;
- reinstatement of the east Nam Wan Tunnel portals construction access road corridor and works areas around viaduct columns;
- compatible design of highway structures and associated works with the major adjoining highway infrastructure;
- highway lighting design to minimise leakage of light and glare disturbance;
- use of reflective paints and signage to reduce the highway lighting requirements;
- visually unobtrusive design of portal structures and buildings;
- location of the eastern Nam Wan Tunnel portals buildings between the portals or over the portal structures to reduce the platform area and associated slope works;
- screen planting around the eastern Nam Wan Tunnel portal buildings;
- minimisation and blending of slope works at eastern Nam Wan Tunnel portal;
- conservation of topsoil where practical;
- avoidance of chunam or shotcreting slope treatments;
- wider slope berm to allow plantation / vegetation;
- site litter patrols and regular site waste collection; and
- maintenance of planting

5.4.2 Landscaping works are proposed for the cut/fill slopes at the Nam Wan Tunnel portal east, and the site reinstatement areas below the portals. Additional landscaping treatments should be considered for the areas below the viaduct sections and around the viaduct columns near local road junctions and sensitive areas. Additional small potential landscaping areas may be identified at the detailed design stage.

5.4.3 Regular landscaping monitoring should be undertaken for at least two growing seasons post-planting, with routine maintenance works on an ongoing basis. A list of suitable trees and shrubs for replanting any loss is provided in Section 6.

## 5.5 Summary

5.5.1 The analysis has demonstrated that impacts will be insignificant in most areas given the extent of other major highway infrastructure in the area. Nevertheless mitigation measures have been recommended to minimise the adverse effects. The main thrust of the mitigation measures includes retention of vegetation, protection of the stream below the eastern Nam Wan Tunnel portal, minimisation of the land requirements and stream disturbance, prompt hydroseeding of disturbed areas and cut/fill slopes prior to the permanent landscaping works, reinstatement of construction access road corridors and works areas, highway lighting design to minimise glare disturbance, visually unobtrusive design of portal buildings, and avoidance of shotcreting slope treatments.

- 5.5.2 Stonecutters Bridge has the potential to constitute a feature contributing to the urban fabric. It will be visible from the western harbour, west Hong Kong Island, Kwai Chung, Lai Chi Kok, and will establish a significant entrance point to the main built-up area.