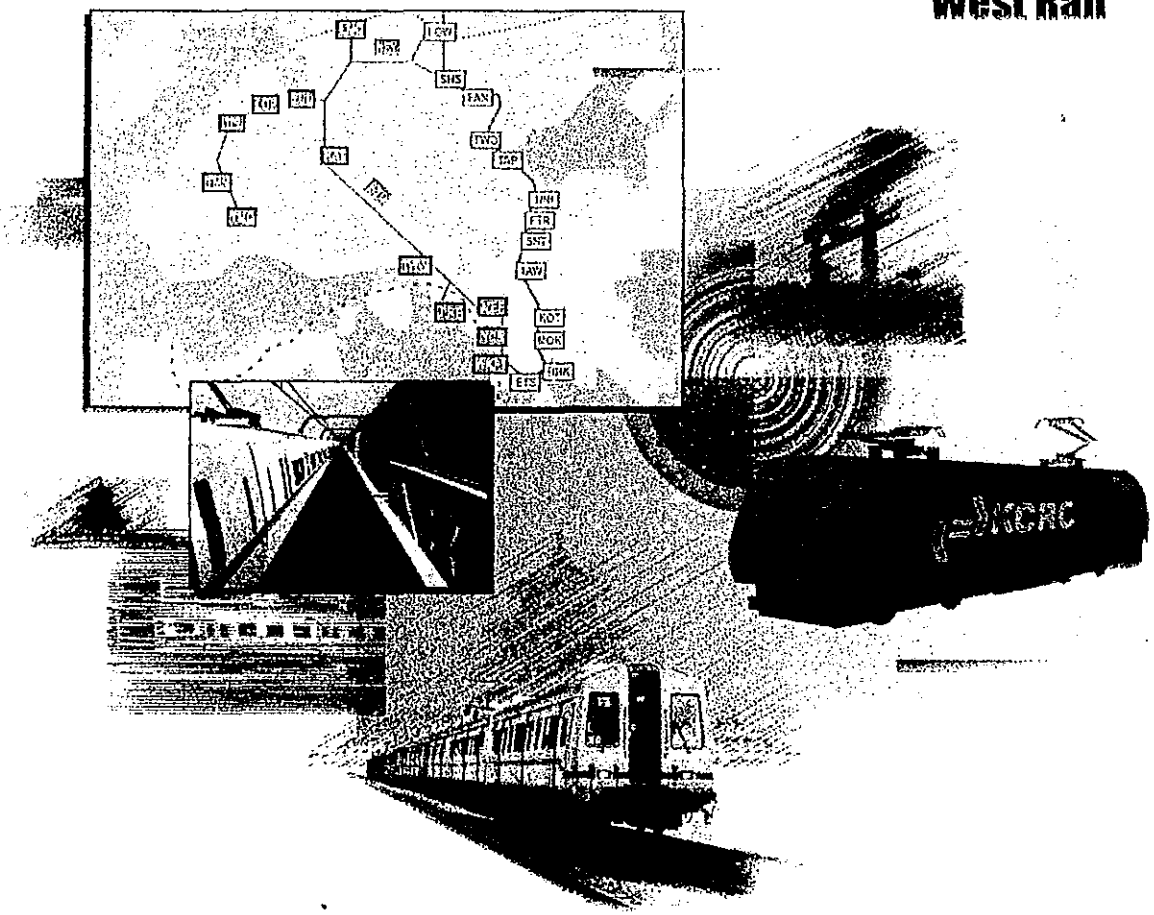
Kowloon-Canton Railway Corporation

West Rail



ERM

KCRC

Contract No. TS-900

Environmental Impact Assessment
Final Landscape Design Strategy Report
Volume 1

Kowloon-Canton Railway Corporation

Contract No. TS-900
West Rail : Environmental Impact Assessment
Final Landscape Design Strategy Report - Volume I

April 1997

Reference C1588

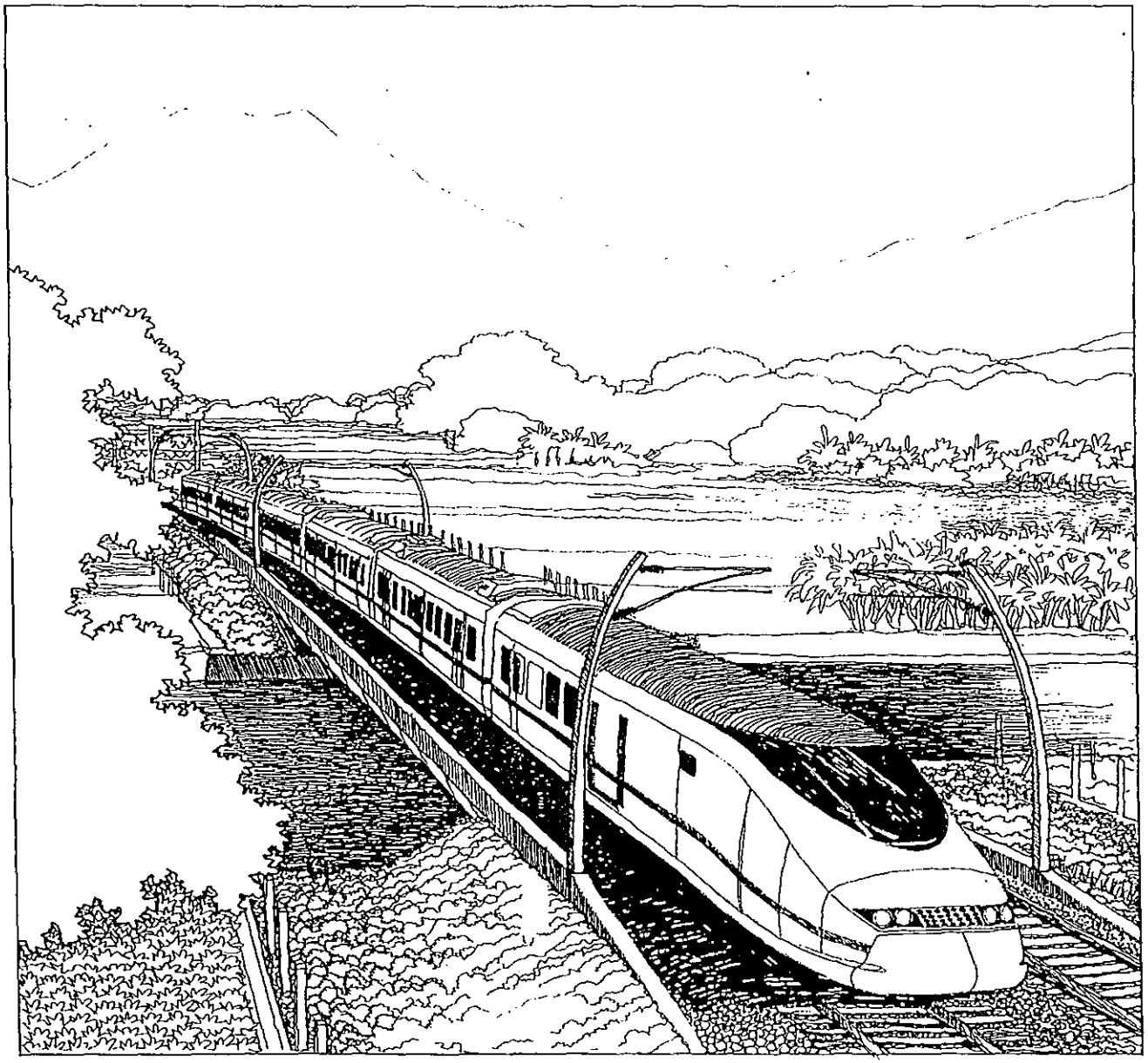
For and on behalf of ERM-Hong Kong, Ltd

Approved by: S.M. LAISTER

Signed:

Position: Deputy Managing Director

Date: 23 April 1997



West Rail
Final Landscape Design Strategy Report

The Kowloon-Canton Railway Corporation
WEST RAIL DIVISION

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List of Acronyms and Abbreviations

AFD	Agriculture & Fisheries Department
AMO	The Antiquities and Monuments Office
CED	Civil Engineering Department
CLP	China Light & Power
EIA	Environmental Impact Assessment
EPD	Environmental Protection Department
Dept.	Department
HKPSG	Hong Kong Planning Standards and Guidelines
KCRC	Kowloon-Canton Railway Corporation
LAR	Lantau and Airport Railway
LRT	Light Rail Terminal
MOR	Ministry of Rail
MTRC	Mass Transit Railway Corporation
NT	New Territories
OHCS	Overhead Catenary System
OZP	Outline Zoning Plans
SSSI	Sites of Special Scientific Interest
TC	Technical Circular
TM	Technical Memorandum
TS	Technical Study
WK	West Kowloon
WWF	World Wide Fund for Nature
USD	Urban Services Department

1.1 West Rail EIA Study

In November 1996 the Kowloon-Canton Railway Corporation (KCRC) commissioned Environmental Resources Management Hong Kong Ltd to undertake an Environmental Impact Assessment of the proposed new Western Corridor Railway known as the West Rail.

The Environmental Impact Assessment is being carried out by a multi-disciplinary team. Urbis Limited are the specialist consultants for the production of the Landscape Design Strategy Report and thereafter for the Landscape and Visual Assessment.

1.2 Objectives of the Landscape Design Strategy

The objective of the Landscape Design Strategy Report is described in Schedule 1 to the Consultancy Agreement - The Services, clause 2.9.6.

As described, the Landscape Design Strategy Report should:

"establish the design principles and guidelines for all landscape and visual aspects of the West Rail to be used by the Other Consultants in formulating the planting and landscape maintenance strategies under the Technical Studies. The Strategy Report will outline the role of landscaping in enhancing the visual connection between stations and adjacent developments/land uses and in promoting a clear public image of the railway and its various facilities. It will consider views to be seen from the trains and recommend how such views can be enhanced and/or protected."

This is complimentary to the broader objectives of the EIA study which are defined in Schedule 1 to the Consultancy Agreement - The Services, clause 1.3 and include, *inter alia*, the requirement to:

"minimise potential pollution and environmental disturbance arising from the construction and operation of the railway;"

and

"identify, assess and specify methods, measures and standards to be included in the design, construction and operation of the railway which are necessary to mitigate the impacts and reduce them to acceptable levels".

The Landscape Design Strategy is necessary to develop and promote a high standard of environmental design around the West Rail operation facilities, one that will encourage improvements within existing adjacent developments and that will inspire co-ordinated ideas for subsequent projects arising from West Rail.

The fact that the Landscape Design Strategy is being developed at an early stage in the overall railway design process means that there is excellent opportunity to establish sound landscape design principles sufficiently early in the design process to identify and "design out" potential landscape and visual problems.

1.3 Definition of Landscape

Landscape is defined in The New Shorter Oxford English Dictionary (1993 Edition) as:

"a tract or region of land with its characteristic topographical features, especially as shaped or modified by (usually natural) processes and agents".

The Dictionary does not provide a definition of Landscape Design but does define Landscape Architecture as:

"(the art of) planning and designing the open air environment, especially with reference to the harmonious fitting of buildings, roads, etc., into the landscape".

These definitions are appropriate for this study which seeks to promote the sensitive shaping and modification of the existing landscape and the harmonious fitting of the West Rail and its associated operational buildings and structures into that landscape.

In this context, landscape design should be concerned not only with the "soft" landscape of trees, shrubs and grasses, but also with the physical and visual relationship of all engineering and architectural components of the West Rail with the surrounding environment.

The Landscape Design Strategy Report therefore addresses the wider landscape implications of these engineering and architectural components and the effect that they will have on the public image of West Rail.

1.4 Report Methodology

Based on site inspections and desk top studies, the West Rail corridor has been classified into landscape character areas. The proposed engineering form and vertical alignment of the railway within each of these character areas has been identified and described, based on the latest information provided by the engineering teams on each of the Technical Studies.

An analysis of the extent of severance or disruption to the existing landscape and visual character has been undertaken for the affected areas underneath and on either side of the proposed railway. Consideration has been taken of the views from the train as experienced by passengers and of external views of the railway as experienced by sensitive receivers located along the West Rail Corridor.

Based on the KCRC's stated objectives for the Landscape Design Strategy Report, a number of Landscape Design Parameters have been formulated which provide a basic philosophy for approaching the specific design issues, constraints and opportunities presented by West Rail.

By synthesising the Design Parameters and the specific contextual constraints and opportunities occurring along West Rail, a series of landscape design strategy proposals have been prepared which provide a means for the expression of the design philosophies embodied in the Design Parameters. The proposals recommend landscape solutions for each situation along the Corridor which reflect and enhance the existing and known proposed character of the surroundings, and, where possible, heighten the passenger experience and public perception of West Rail.

The proposals are subdivided into those which are system-wide and those which are context specific. They are further divided into

- generic design proposals which should be adopted in Phase 1 of the Technical Studies to aid conceptual design and the fine tuning of the rail alignment, and
- more detailed proposals which should be used in later detailed design phases in order to create a co-ordinated range of hard and soft landscape details and materials which will create a consistent theme and image throughout West Rail.

1.5 Report Structure

Chapter 2 of the Report examines the landscape context of the West Rail Corridor, and identifies the passenger experience and the external views of the railway.

Chapter 3 outlines the Design Parameters that form the underlying basis for the Landscape Design Strategy.

Chapter 4 describes the Landscape Design Strategy. The Strategy is described first for the common system-wide elements and subsequently for the site specific contextual elements associated with each geographical section of the railway.

The railway sections are described in the following order:

Southern Section	(TS-400)
Central Section	(TS-300)
West Rail Depot	(TS-600)
Northern Section	(TS-100)
Western Section	(TS-200)
Northern Freight Yard and Port Rail Terminal	(TS-1150)

The landscape setting of individual segments within each geographical section is analysed and then the strategy is proposed for these segments, describing in detail the landscape context, the key issues and the responding strategies.

Technical Appendix I identifies the Detail Landscape Hardworks Strategy. Typical details for common hard landscape elements are proposed.

Technical Appendix II identifies the Detail Landscape Softworks Strategy. Recommended species lists are provided and maintenance regimes proposed.

1.6 How to use this Report

The Landscape Design Strategy Report is structured to be of maximum use to the Other Consultants employed on the Technical Studies.

The Other Consultants should:

- **Understand the Design Parameters outlined in Chapter 3 and use these as the touchstone for all design decisions which impact upon the landscape and the visual experience of West Rail.**
- **Adopt the system-wide landscape strategy proposals outlined in Chapter 4.1.**
- **Adopt the contextual landscape strategy proposals relevant to each of their Technical Studies as outlined in Chapter 4.2 to 4.7.**

It is particularly important that the Other Consultants should use the Landscape Design Strategy Report in Phase 1 of the Technical Studies to influence the design and fine tuning of the railway alignment in order to cause the minimum landscape and visual disturbance. The strategies outlined in Chapter 4 of the report provide guidance at a general level of detail appropriate to the level of design detail investigated in Phase 1 of the Technical Studies.

The Technical Appendices I and II expand upon Chapter 4 and provide more detailed proposals specific to Hard and Soft Landscape Design and are more appropriate for reference during Phase II of the Technical Studies and during the subsequent detailed design of the West Rail.

2.1 Description of the proposed West Rail Route

The proposed alignment of West Rail is shown in Figure 2A.

Southern Section (TS-400)

The West Rail will start immediately north of the proposed West Kowloon station and will run north across the West Kowloon Reclamation parallel to the West Kowloon Expressway and the MTRC Lantau and Airport Railway to Mei Foo station, where it will curve north across the Mei Foo Buffer Zone and Lai Chi Kok Park (Section 2) to the proposed station, immediately west of Mei Foo Sun Chuen. It is proposed that the railway will be constructed in cut-and-cover tunnel from West Kowloon station to Road D7/Prince Edward Road except for a section of soft ground bored tunnel under Cherry Street under pass. From Road D7/Prince Edward Road to Mei Foo station the railway will be constructed in a series of at grade enclosed box and cut and cover tunnels. The physical profile of the earth mound over the tunnel will be visible at ground level, except for the section under Lai Wan Interchange.

This section also includes the proposed Yen Chow Street station which will be jointly operated by the KCRC and MTRC and will serve as a major interchange station providing passenger access and transfer between each mode of transport.

Central Section (TS-300)

The railway will run in at grade enclosed box tunnel from the proposed Mei Foo station under Lai Chi Kok Park (Section 1) and Ching Cheung Road. It will enter bored tunnel under the high rock plateau at Cho Yiu Chuen and will emerge as cut and cover tunnel under a park area between Kwai Chung Road nullah and Kwai Fuk Road.

The railway then continues north in cut and cover tunnel under Kwai Fuk Road as far as Hing Shin Road where it enters bored tunnel. The bored tunnel crosses under the foundations of Kwai Chung Road and passes into cut and cover tunnel between Paul Y and Wah Kei buildings and continues under ground along the shoreline east of Tsuen Wan Bay.

From Tsuen Wan Bay the railway proceeds north in cut and cover tunnel and enters bored tunnel under Tuen Mun Road into Tai Lam Country Park. The railway emerges from the tunnel through the North Portal into the Kam Tin valley.

West Rail Depot in the Kam Tin Valley (TS-600)

The section of West Rail including the West Rail Depot will begin to the immediate north of the northern portal of the Tai Lam Country Park Tunnel at the interface with the TS-300 section and will run on a series of shallow cuttings and embankments, falling slowly to the site of the proposed Kam Tin station at the southern end of the TS-100 section.

Noise barriers may be required mainly along the east side of the Depot site, and from there north along the tracks as far as Kam Tin station.

The West Rail Depot will be located on either side of the main through tracks and will comprise a range of maintenance facilities and control centre.

Northern Section (TS-100)

The Northern Section starts at the Kam Tin station and heads north to the Au Tau Interchange on viaduct, where two passenger lines head west to the Yuen Long station within the Western Section. The two centre tracks which serve as a shuttle service will merge with the 2 outer tracks to head north in the direction of Lok Ma Chau.

Noise barriers are likely to be required along the east side of the route immediately north of Kam Tin station, with an enclosing noise structure to both sides, as the route passes villages along Kam Tin Road.

The line from Yuen Long station would need to have noise barriers for much of its length to protect the series of villages around the Small Traders New Village.

The two railway lines will continue north on embankment towards Pok Wai, with an alternating series of noise barriers and enclosures on the east side. From there the route will head north east to Tam Mi Camp where it will drop in to cutting for a short length before entering a tunnel some 500 metres long, and then re-emerging at Shek Wu Wai.

The alignment will continue in a north-easterly direction parallel to the N.T. Circular Road running alternately in cutting and on embankment to Chau Tau where the two tracks will split. Much of this length will require noise barriers to one or both sides.

At Chau Tau one of the lines will head north west to Lok Ma Chau with the tracks largely on embankment. Noise barriers would be required on both sides. Just before the border the route will turn to the south west on viaduct to enter the proposed Lok Ma Chau station.

The other line will run in an easterly direction from Chau Tau on viaduct and then in cutting to Kwu Tung, with either noise barriers or enclosure to either side.

The freight lines enter the Northern Freight Yard at Kwu Tung, while the remaining passenger track will continue east, running to the south of the Freight Yard, with one serving as a shuttle service for passengers from Lok Ma Chau and Kam Tin stations to Lo Wu and Sheung Shui, and the other as the main line railway for through passengers to the Lo Wu Border.

Both lines will rise on embankment east of the entrance to the Northern Freight Yard until the lines separate at Ho Sheung Heung.

One line will proceed north, mainly on embankment, to the existing station at Lo Wu. Noise barriers would be required along the tracks.

The other line will run south east on a viaduct to Sheung Shui. Noise barriers are likely to be required.

Western Section (TS-200)

The Western Section of the West Rail will start at the proposed Yuen Long station to the east of Sun Yuen Long Plaza. From there it will follow the line of Yuen Long Nullah to the proposed station at Long Ping Estate, from where it will continue in a broadly westerly direction on viaduct to Tin Tsz Road where it will turn south west to the proposed station at Tin Shui Wai. Noise barriers are likely to be required along both sides of the tracks.

From Tin Shui Wai station, the railway will continue in a south-westerly direction on viaduct crossing various watercourses and access roads as far as Tin Sam, where the viaduct ends. Again the railway would be likely to require noise barriers on both sides.

From Tin Sam the railway runs in a south-westerly direction at grade across open areas of mixed agricultural / residential / commercial land to Lam Tei, where it rises again on viaduct. Noise barriers would be required to protect the village areas to the west over much of this portion of the route.

From Lam Tei, the railway continues south-west, parallel to Castle Peak Road, on viaduct to the proposed Tuen Mun North, located just north of the Tuen Mun Hospital. Noise barriers would be likely to be required over extensive lengths of the railway on both sides

From Tuen Mun North, the railway will continue southwards at grade along the west side of Tuen Mun Nullah, under the LRT Bridge and Tin Tsing Road Flyover, crossing the nullah on viaduct just south of Affluence Gardens and just north of the proposed Tuen Mun *Centre* station.

Tuen Mun *Centre* station will located on the east side of the Tuen Mun River, adjacent to San Fat Estate and the railway will terminate here, with a short overrun over Pui To Road.

Northern Freight Yard and Port Rail Terminal (TS -1150)

The Northern Freight Yard is located to the north of the Sheung Shui and Lok Ma Chau shuttle line and is the point of interchange between West Rail and the *MOR freight trains.*

Within the yard the transfer of containers will take place between freight trains operated by West Rail and the *MOR* freight trains. Other facilities will include maintenance buildings, car parking and open storage areas.

The yard will be at grade and high noise barriers would be required where residential blocks are nearby.

The Port Rail Terminal is located in the Kwai Chung port facility at the northern end of the TS-400 section of the alignment. It is the southern terminus of the West Rail freight operations and will provide services for the containerised freight to and from the marine container terminals. The Terminal will be accessed by freight lines which will run at grade to the west of the proposed Mei Foo station.

2.2 The Passenger Experience

Passenger experience is a fundamental element to be considered in the development of the Landscape Design Strategy.

Passengers travelling on the West Rail will experience extended periods of their journey where there are either no views out from the train or where there will be expansive views on one or both sides. The timing and sequence of these periods are illustrated in Figure 2B.

No Views from the train

For the whole of the Southern and Central Sections (just over half the total journey time to Tuen Mun Centre) the railway will be either in cut and cover, at grade enclosed box or bored tunnel. There will be no external views. Only when in the station boxes at Yen Chow Street, Mei Foo station or Tsuen Wan West, will the passengers have views out of the carriage. The treatment of these views will be addressed within the urban design reports of the other Technical Studies.

The journey for passengers travelling north from the West Kowloon station, will start underground and passengers will have no perception of the urban form of the West Kowloon or Tsuen Wan metropolitan areas or of the Tai Lam Country Park, above. This is more significant for passengers travelling south where there will be no visual clues within their arrival sequence to orient them as to their location within Kowloon.

The transition into / out of tunnel at Kam Tin will happen abruptly as the trains pass directly out of tunnel onto embankment. This will tend to be a dramatic experience for northbound travellers, although may be toned down to some extent by a transitional zone of noise barriers along the eastern side.

The only other length of the route for which passengers will be in tunnels will be the section between Tai Mi Camp and Shek Wu Wai.

Views from the train

For nearly the whole length of the route in the Northern and Western Sections, the railway will be open to the sky. The railway will run for much of these Sections on embankment or viaduct structure, with the possibility of clear views out over the surrounding Countryside.

Views from the train will be restricted, however, either where the route is in cutting, or where high opaque noise barriers or enclosures are required.

It is assumed that passenger eye level (some 2.0 metres above track level) will be sufficiently higher than the top of some lower noise barriers for views to be unrestricted. In addition the degree to which the higher noise barriers will restrict views can be varied by the incorporation of vision panels into the barrier design, subject to detailed requirements for noise attenuation.

Where the tracks are in cutting higher than passenger eye level views out will be severely limited, although it is proposed that all soil cut slopes be revegetated to soften these views.

Views in the West Rail Depot

From the tunnel portal to Kam Tin station there will be clear views of the natural hillside of Tai Lam Country Park to the west over the West Rail Depot. Views may be restricted by the noise barriers to the east side of the West Rail Depot and both sides of Kam Tin station if barriers are opaque and above passenger eye level. However it is recommended that noise barriers should be transparent at passenger height to maintain views.

Although the operations of the West Rail Depot may be of some interest to passengers, views out are likely to consist mainly of maintenance buildings and storage yards, and will be in sharp contrast to the surrounding agricultural landscape.

Views in the Northern Section

North from Kam Tin station as far as the Au Tau Interchange, where the railway will be largely on embankment or viaduct, there will be clear views of both the natural hillside, and of the agricultural farmland of the Kam Tin Valley to the east. Views will only be restricted if opaque noise barriers are required.

To the north of the Au Tau Interchange, as far as Pok Wai, there will be clear views over the fish ponds and agricultural fields of the Lower Kam Tin Valley to the natural hillside of Lam Tsuen Country Park to the east, and across the NT Circular Road to the fishponds to the west. These views will become restricted by the noise barriers at the village areas around Mo Fan Heung.

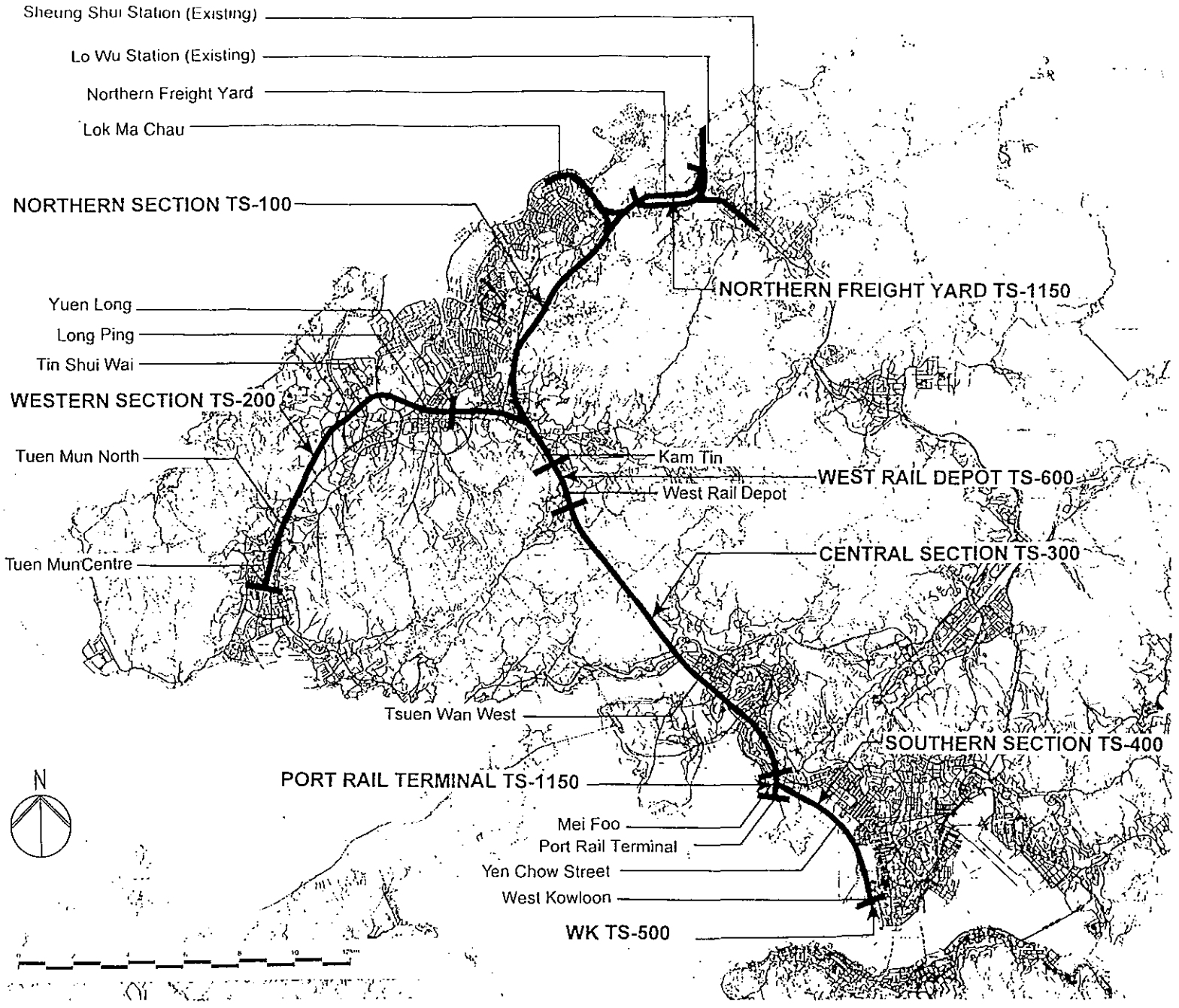
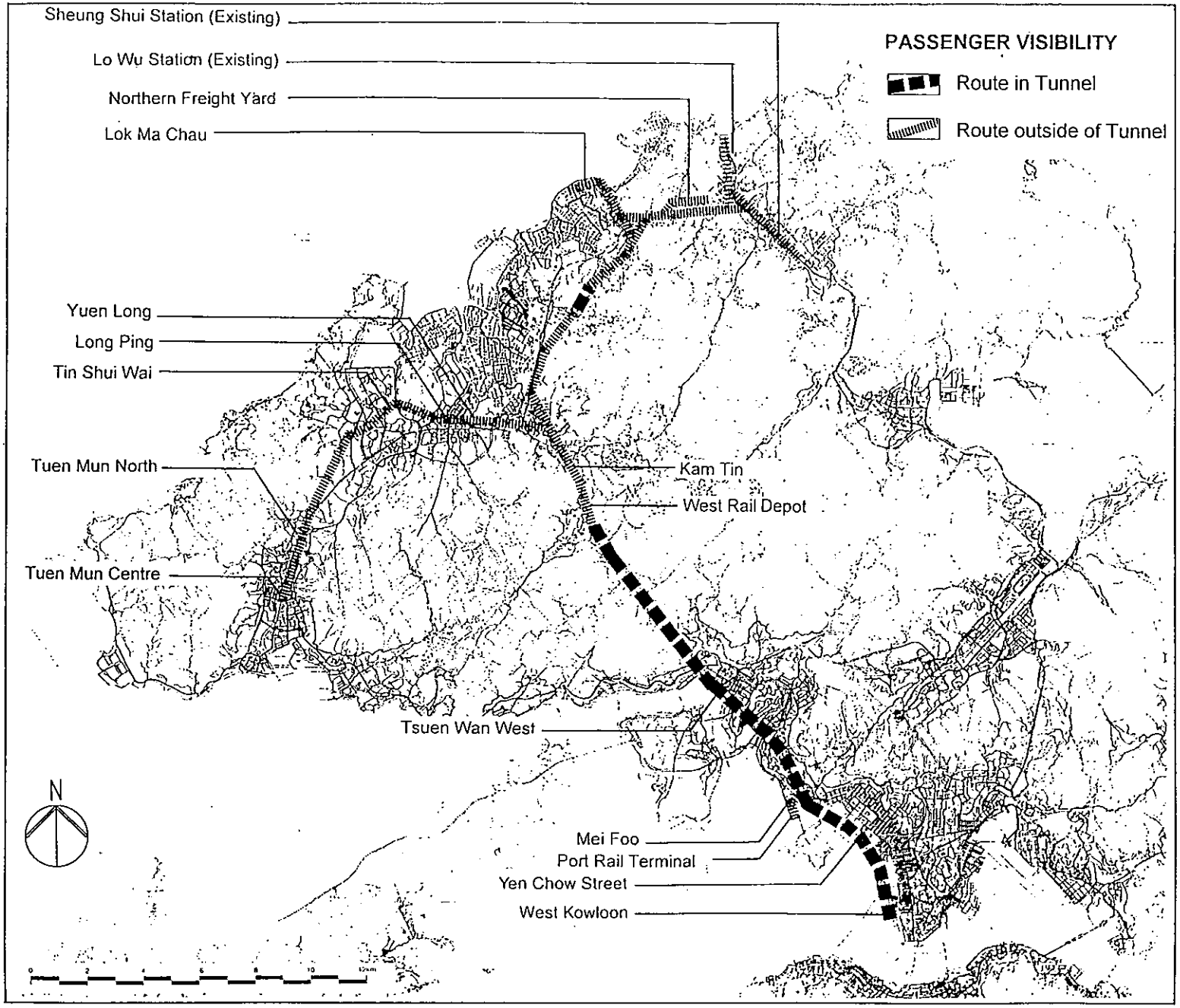


Fig. 2A
Plan of West Rail



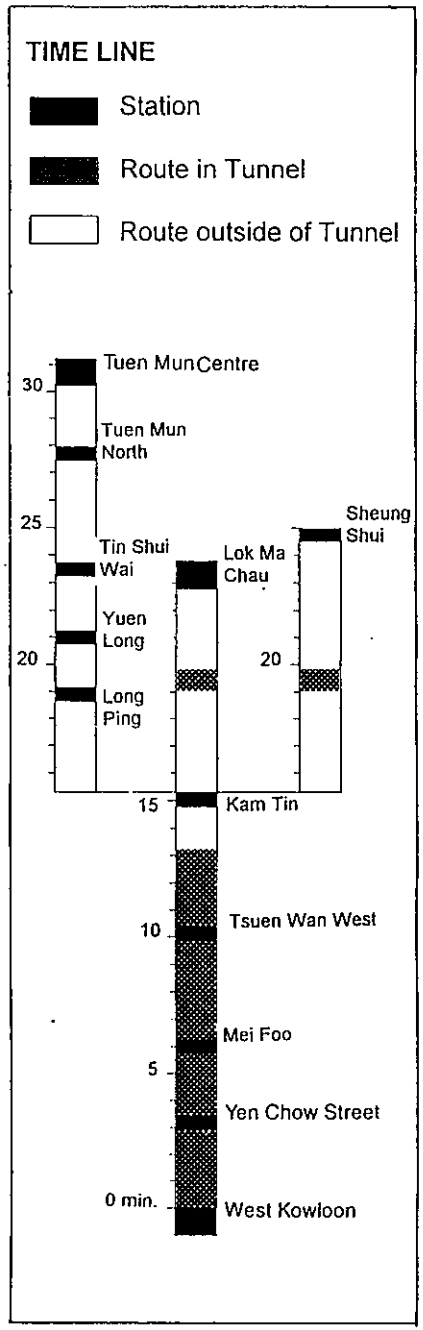


Fig. 2B
Passenger Experience Diagram

From Pok Wai to the start of the bored tunnel at Tam Mi Camp there will be potential views of the surrounding farmland of the Ngau Tam Mei Valley extending to the northern hills of Lam Tsuen Country Park in the east and as far as the NT Circular Road in the west. These views will generally be restricted, with a series of cuttings and, where the railway is on intervening embankments, by the need for noise barriers to protect the local village communities.

The tracks emerge from the tunnel at Shek Wu Wai into cutting and then pass through a series of embankments and cuttings as far as Chau Tau. As the need for high noise barriers is likely to be limited to the north side at Shek Wu Wai, there will be intermittent views on both sides of the open farmland with distant views of the hills of the Lam Tsuen Country Park to the south east.

There will be panoramic views from the two lines to Lok Ma Chau station across the landscape of fish ponds around San Tin, although these may be restricted in short sections by noise barriers. As the route turns to enter the station passengers will enjoy dramatic and unusual views over Deep Bay.

To the east of Chau Tau, potential views from the train of the surrounding farmland and village settlements and longer distance views south to the low hill slopes of Kei Lun Shan will be generally very restricted, first as the tracks pass the Northern Freight Yard in cutting, and then on viaduct until the lines separate at Ho Sheung Heung, where extensive sections will require high noise barriers.

Passengers approaching Sheung Shui station will have views out from the elevated alignment over the farmland and fish ponds surrounding the Sheung Yue Ho River to the north and as far as the NT Circular Road to the south. Then as the route turns south east of industrial and open storage land uses immediately west of Sheung Shui. High noise barriers, however, will tend to obscure views of the temporary housing in this area.

Passengers travelling north from Ho Sheung Heung to Lo Wu will also have elevated views out over the farmland and fish ponds as the route crosses the Sheung Yue Ho River. On approach to the station views of the low lying farmland either side of the Ng Tung Ho River will be restricted where the tracks are in cutting and then by high noise barriers on the viaduct entering the station.

Views in the Western Section

The Western Section is considered to be the most open and visually interesting part of the whole West Rail in terms of passenger views from the train. Long sections of this route afford both expansive views over a diverse and heavily used landscape to distant hillsides and new town developments, and more local scale interest as it passes through the Yuen Long and Tuen Mun New Towns along urban river / nullah corridors.

As the route runs north from the Tuen Mun Centre station, on viaduct, there should be largely uninterrupted views of the residential and commercial G/IC land uses either side of the Tuen Mun River, and the extensive structures of the road network north of Tuen Mun. As the route continues north, at grade, there will be views to either side, but limited by the existing vegetation and residential and commercial / industrial buildings.

Views will become more expansive as the route rises onto viaduct approaching Tin Shui Wai, and as far as Long Ping station there will be panoramic views out over the mixed farmland and low rise residential and commercial / industrial buildings to the high rise residential towers of Tin Shui Wai and Yuen Long.

Through Yuen Long station the route will be elevated above the Yuen Long Nullah with uninterrupted views of the industrial and commercial land uses either side.

Views in the Northern Freight Yard and Port Rail Terminal

As the services using the Northern Freight Yard and Port Rail Terminal are not likely to carry passengers the views from the train have not been considered here.

2.3 The External View of West Rail

The visibility of the West Rail corridor has significant implications on the Landscape Design Strategy as sensitive receivers will perceive the West Rail landscape components as part of the KCRC's public image.

The exact extent of the visibility of the alignment of the railway will be assessed as part of the Landscape and Visual Assessment of the EIA. For the purposes of the Landscape Design Strategy however the visibility of the line will be described in broad terms.

The visibility of the project during construction will be assessed during the EIA study, including the impact temporary works, and storage areas, import/export of the very large quantities of material from site, and off site impacts. Although cut and cover tunnel, bored and rock tunnels may not have any adverse operational impacts they are likely to have a significant construction stage impact due to the earthworks involved.

Views in the Southern Section

In the Southern Section West Rail will be under ground within a cut and cover tunnel from West Kowloon station to D7 road/ Prince Edward Road and in a soft ground bored tunnel under Cherry Street Underpass and will not be visible at ground level. Thereafter however the railway enters a series of cut and cover and at grade box tunnels which will be appropriately landscaped to integrate with the surroundings. The physical profile of the earth mounding over the tunnels will be visible from Yen Chow Street station to Mei Foo station, except for the section under Lai Wan Interchange.

The Southern Section of West Rail runs through two distinct character zones. The first zone is the West Kowloon Reclamation site, the second is around the residential area of Mei Foo Sun Chuen including Lai Chi Kok Park Stages 1,2 and 3.

The landform across the West Kowloon Reclamation site is flat and open and the space is divided by the elevated structure of the West Kowloon Expressway. Current development on the Reclamation site is industrial and of low intensity and the physical profile of the earth mound over the railway tunnel will be visible from existing adjacent properties in Yau Ma Tai, Tai Kok Tsui and Sham Shui Po.

As development of the Reclamation site proceeds and the range of landuses and density of properties changes the earth mound over the railway will become less visible.

The scenic value of the area however is low and the landscaped tunnel will be seen against the more dramatic back drop of Hong Kong Harbour to the south west.

The second character zone is centred on Lai Chi Kok Park which is bound by the West Kowloon Expressway, the residential area of Mei Foo Sun Chuen and Ching Chung Road. The Park is an important district open space providing active and passive recreation opportunities for residents. The Park is of significant local scenic and landscape value and provides a vital buffer zone between the residential area of Mei Foo Sun Chuen and the major transportation corridor comprising the West Kowloon Expressway and the Lantau and Airport Railway, and the industrial land beyond.

Visual disturbance from the cut and cover and at grade box tunnels and portals and associated engineering structures is likely to be high particularly on the adjacent high rise residential developments at Mei Foo and on neighbouring open spaces. However it should be possible to redesign Lai Chi Kok Park to conceal the railway underneath.

Views into the Central Section

Within the Central Section West Rail runs through a series of tunnels beginning at Mei Foo station, through Hai Kwai Chung, Tsuen Wan Bay area and Tai Lam Country Park until it appears through the North Portal in the Kam Tin Valley in shallow cutting.

The alignment of the railway passes through 5 character zones in the Central Section: Hai Kwai Chung, from Kwai Ching Road to Wing Shun Street, Tsuen Wan Bay area and Kam Tin Valley.

Hai Kwai Chung is a plateau with areas of mixed recreational and residential use on top and mature hillside vegetation on the slopes. The raised landform of this character zone separates the West Kowloon Reclamation site from the Tsuen Wan Bay area and provides a scenic green backdrop to the areas below. West Rail will be in a bored tunnel throughout this area and the landscape at ground level on the top and sides of the plateau will not be affected by the tunnel.

From Kwai Ching Road to Wing Shun Street, West Rail will be in cut and cover tunnel and bored tunnel and will pass through an urban area of mixed commercial, industrial and residential use which includes several major roads. This zone is of low scenic value and the physical profile of West Rail will not be visible at ground level although there will be disruption at ground level from the construction of the cut and cover tunnel.

West Rail runs through Tsuen Wan Bay area in cut and cover tunnel. The landscape in this zone is flat and industrial and the area is enclosed by the hills of Tai Lam Country Park to the north and Ha Kwai to the south. The character of the area will undergo change with the future relocation of the Public Cargo Works Area to Stonecutters Island and the creation of a temporary promenade as part of the Tsuen Wan Bay further reclamation. The physical profile of West Rail will not be visible at ground level as it passes through this area although there will be disruption at ground level from the construction operations of the cut and cover tunnel.

West Rail will be within bored tunnel under Tai Lam Country Park and views within the park will not be affected. However, developments associated with the construction of the North Portal, i.e. the ventilation buildings currently to be positioned on top of the tunnel portal and its associated ramped access road, will be visible from the Kam Tin valley and from the surrounding hillsides of the Tai Lam Country Park.

West Rail emerges from the Northern Portal and runs in a series of shallow cuttings and embankments towards the West Rail Depot at the interface of the Northern and Central Section.

Views into the West Rail Depot in Kam Tin valley.

In the Kam Tin Valley West Rail runs from the North Portal to the West Rail Depot and beyond to Kam Tin station.

The Kam Tin Valley is an area of high scenic value, the valley floor is wide and relatively flat and enclosed by the wooded hills of the Tai Lam Country Park. The valley floor contains an attractive mixture of woodland, pockets of farmland, streams, fishponds and several rural villages.

Due to the size and open nature of the West Rail Depot there will be disruptions to existing long distance views of the valley from the surrounding hillsides and from the view points along the Catchwater Road and other hiking trails in the Country Park. Already the high scenic value of the Kam Tin Valley has been reduced by the removal of vegetation and earthworks as part of the construction of Route 3 along the foothills of the western slopes.

The West Rail Depot will also disrupt short to middle distant views from the Countryside and villages of the valley floor.

Views into the Northern Section

From Kam Tin station the Northern Section passes through many different character zones as it extends to Yuen Long in the west, Lok Ma Chow and Lo Wu to the north, and Sheung Shui to the north east.

From Kam Tin to Yuen Long and Mo Fan Heung the landscape comprises major infrastructure such as NTCR, Route 3 and Pylons; open storage areas, agricultural land, fish ponds, and a mixture of temporary and permanent villages. The landform is generally low lying ground with occasional knolls around Au Tau. The landscape character of this area is suburban, small in scale and intimate, but of relatively low scenic value. West Rail will be elevated on embankment and viaduct along this section except for a short section of cutting and the railway will in general be highly visible.

From Mo Fan Heung to Tam Mi Camp, West Rail passes into the flat agricultural plains and occasional fish ponds around Nau Tam Mei. This area is of medium scenic value and is bordered by Lam Tsuen Country Park to the southeast and Tai Lo Tin Hill to the northeast. West Rail will enter and leave the plain through short sections of cutting and will principally be on embankment through this character zone. The railway will be highly visible from the surrounding rural countryside, villages and Country Park, and there will be disruption to views of the area during both the construction and operational phases.

From Tam Mi Camp to Lok Ma Chau, Kwu Tung and Lo Wu the railway passes across gently undulating rural lowlands and floodplains bound by vegetated hilly slopes. These low-lying areas are of medium scenic value and there are several viewing points from the adjacent hillsides.

Rural villages are scattered throughout the lowlands from Tam Mi Camp to Lok Ma Chau and much of the land and former fishponds are used for open storage. West Rail will pass through this area on a series of cuttings, embankments and viaducts and a section of bored tunnel and will pass over the N.T. Circular Road, San Sham Road and Ng Tung River. There will be disruption to views into the lowlands of this character area during the construction and operational phases.

From Kwu Tung to Fanling and Sheung Shui the landscape character changes from rural village settlements set with farmland to a mixture of urban residential and industrial developments. The landform is relatively flat and Shek Sheung River runs along the north east side of the urban area. West rail will be on viaduct from Kwu Tung across the areas of agricultural land and the scattered fish ponds and will be visible from the rural developments and from residents in the high rise developments of Fanling and Sheung Shui. The railway will be at grade within the urban fringe adjacent to East Rail and the realignment of the existing track will cause disruption during the construction phase but is unlikely to cause residual intrusion in its operation due to the presence of the existing railway running though the urban area.

Views into the Western Section

The Western Section being entirely on viaduct or at grade, will be the most visible Section of the West Rail.

The railway passes through five character zones in the Western section: the three urban settings of Yuen Long, Tin Shui Wai and Tuen Mun, and the rural areas separating these towns.

Through the urban area of Yuen Long the route will be visible from many of the ground level areas along the Yuen Long Nullah corridor, as well as the low and high rise residential developments alongside. The elevated structures will be seen in the context of the nullah and associated road corridors and against a backdrop of the largely industrial and commercial land uses of Yuen Long.

Between Yuen Long and Tin Shui Wai the viaduct passes across an area of lowlands of medium scenic value where the landscape is small in scale due to the dispersal of pockets of farmland, the presence of streams and fishponds and the location of the rural settlements. There will be short, middle and long range views of the elevated structure from surrounding Countryside. The impact of the viaduct on the landscape will be reduced however as the route approaches the high rise towers of Tin Shui Wai.

Within Tin Shui Wai the route will be elevated and will be seen in the context of low and high rise urban developments to the north of Tin Fuk Road. To the south of the route alignment the landscape is flat, open and less developed than the northern area of Tin Shui Wai.

In the northern section from Tin Shui Wai West Rail will be on viaduct as the route passes over low lying land and there will be short, middle and long range views of the elevated structure from the surrounding Countryside. The landscape is flat and of low scenic value.

From Lam Tei village the railway will be on embankment and will be visible from the surrounding lowland Countryside where the principle land use is agriculture, small scale industry and open storage dispersed within village settlements.

As the route runs south towards the Tuen Mun valley the landscape character changes from open lowlands countryside to a more suburban intimate area enclosed by the hills to the east and west of Tuen Mun. West Rail will run on viaduct across Castle Peak Road and the Light Rail Transit and will be visible from the rural villages of the surrounding Countryside.

Tuen Mun is located in the valley between the hills of Castle Peak and Tai Lam Country Park. The route runs on viaduct in a southerly direction to Tuen Mun North and will be visible from the community buildings and residential properties in the villages to the north of the station area. From Tuen Mun North to Affluence Garden to the route will be at grade. It will be seen in the context of the nullah and associated road corridors and against a backdrop of the largely commercial and residential land uses. From Affluence Garden Housing Estate to Tuen Mun Centre station the railway will be on viaduct and will cross the town nullah. It will be clearly visible from the high rise residential and ground level areas within the Tuen Mun River corridor.

Views into the Northern Freight Yard and Port Rail Terminal

The Northern Freight Yard will be located within an area of gently undulating rural lowland and floodplains bound by hilly slopes. Although relatively low-lying, the Freight Yard will have open storage areas and maintenance buildings which will be visible from the surrounding villages and hillsides and which will obstruct existing views of the Countryside beyond. There will also be distant views of the yard from the high rise residential developments in Fanling and Sheung Shui to the south east.

The Port Rail Terminal will be located on Western Kowloon Reclamation surrounded by the urban industrial landscape of the Kwai Chung Port area and will be visible from the higher floors of the towers within Mei Foo Sun Chuen, but will be seen in the context of the intervening Expressway, Lantau Airport Railway and other road networks, and in the context of the cargo working areas beyond.

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3.1 Primary Design Parameters

In order that the Landscape Design Strategy achieves the EIA Study objectives as outlined in Chapter 1, section 1.2, the Landscape Design Strategy is underpinned by a series of Primary Design Parameters as follows.

The Landscape Design Strategy should:

- enhance public attitudes towards West Rail;
- enhance external views of West Rail;
- enhance the passenger experience of West Rail;
- minimise potential negative impacts that West Rail may have on the existing landscape and visual character of the West Rail Corridor;
- create a consistent design theme for West Rail which finds expression throughout the West Rail Corridor;

In addition to the above, three further Primary Design Parameters that have been identified, namely:

The Landscape Design Strategy should:

- be environmentally friendly;
- promote safety and security;
- be cost effective.

3.2 Secondary Design Parameters

Leading on from each of the Primary Design Parameters it is possible to identify Secondary Design Parameters which amplify and expand upon the Primary Parameters.

As can be seen below, several of these Secondary Parameters are common to more than one Primary Parameter, indicating that these should be particularly emphasised in the Landscape Design Strategy.

The Secondary Parameters are listed below together with the Primary Parameters from which they are derived.

Primary Design Parameter:

The Landscape Design Strategy should enhance public attitudes towards West Rail.

Secondary Design Parameters:

The Landscape Design Strategy should:

- create a modern, technologically efficient 21st century image for the West Rail, employing state of the art design;
- convey that the KCRC is concerned about, and has a responsible attitude towards, disabled access to its facilities;
- convey that the KCRC is concerned about, and has a responsible attitude towards, the environment;
- convey that the KCRC is a forward looking corporation;
- provide an enjoyable, comfortable passenger experience, from the moment that the passenger enters the station at the beginning of the journey until the moment the journey is complete;
- convey that the West Rail is a good neighbour.

Primary Design Parameter:

The Landscape Design Strategy should enhance external views of the West Rail.

Secondary Design Parameters:

The Landscape Design Strategy should:

- create a modern, technologically efficient 21st century image for the West Rail, employing state of the art design;
- promote landscape solutions which address problems associated with large scale earth moving in the countryside at an early stage in the engineering design process so that potential negative impacts can be "designed out";
- promote designs for major engineering structures such as bridges, viaducts, and portals which present an attractive co-ordinated image;
- promote designs which avoid trackside clutter and create a clean and tidy image;
- screen unattractive elements of the West Rail through careful siting of those elements and by provision of screen planting.

Primary Design Parameter:

The Landscape Design Strategy should enhance the passenger experience of West Rail.

Secondary Design Parameters:

The Landscape Design Strategy should:

- create a modern, technologically efficient 21st century image for the West Rail, employing state of the art design;
- provide an enjoyable, comfortable passenger experience, from the moment that the passenger enters the station at the beginning of the journey until the moment the journey is complete;
- promote station forecourt designs which reinforce circulation patterns and provide visual clues to location and place;
- promote panoramic views from the train at all times - generally speaking, no view is too ugly not to be of interest to the passing traveller and therefore no views should be considered to require screening;
- promote framing of attractive views to heighten their attractiveness.

Primary Design Parameter:

The Landscape Design Strategy should minimise potential negative impacts that West Rail may have on the existing landscape and visual character of the West Rail Corridor.

Secondary Design Parameters:

The Landscape Design Strategy should:

- promote engineering solutions which achieve a cut and fill balance and thereby minimise external impacts resulting from either the sourcing or the disposal of large quantities of fill;
- promote engineering solutions which minimise cut into existing hillsides;
- promote engineering solutions which minimise extensive embankments and thereby reduce requirements for land resumption, reduce requirements for filling material, reduce traffic and visual severance and reduce the potential for flooding of hinterland areas;
- promote fine tuning of the railway alignment which preserves important cultural and historical components of the landscape, such as fung shui groves and historical temples.

Primary Design Parameter:

The Landscape Design Strategy should create a consistent design theme for West Rail which finds expression throughout the West Rail Corridor.

Secondary Design Parameters:

The Landscape Design Strategy should:

- create a modern, technologically efficient 21st century image for the West Rail, employing state of the art design;
- promote designs for major engineering structures such as bridges, viaducts, and portals which present an attractive co-ordinated image;
- create standard designs for repetitive hard landscape elements such as fences, noise barriers, signage etc.;
- provide recommended species lists of plants which create a consistent palette of plants for use throughout West Rail;
- promote a consistent approach to the design of soft landscape areas.

Primary Design Parameter:

The Landscape Design Strategy should be environmentally friendly.

Secondary Design Parameters:

The Landscape Design Strategy should:

- promote the use of indigenous plants which provide shelter and food for local bird-life;
- promote the use of drought tolerant plants which require minimal irrigation;
- promote the use of hard landscape materials which are manufactured in an environmentally sustainable manner;
- promote maintenance regimes for hard and soft landscape materials which are energy efficient.

Primary Design Parameter:

The Landscape Design Strategy should promote safety and security.

Secondary Design Parameters:

The Landscape Design Strategy should:

- promote hard landscape detailing which allows for safety in construction, operation and maintenance;
- promote soft landscape design which avoids potential interference with the operation of West Rail, specifically in relation to the safety of the track and the Overhead Catenary System;
- promote a boundary demarcation system which provides security where this is required.

Primary Design Parameter:

The Landscape Design Strategy should be cost effective.

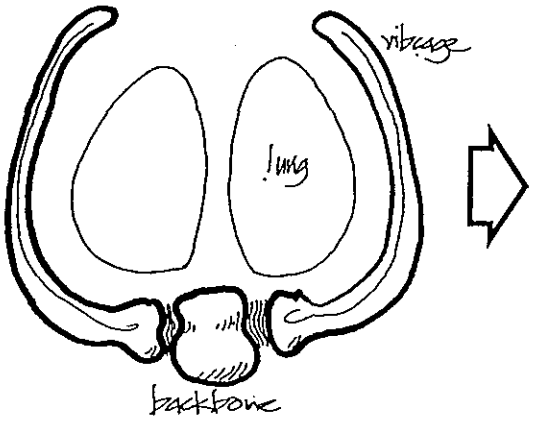
Secondary Design Parameters:

The Landscape Design Strategy should:

- promote designs which take into account recurrent maintenance costs as well as capital costs;
- promote designs which require minimal maintenance in terms of manpower and replacement of equipment and materials;
- promote designs which are modular for ease and economy of construction and maintenance;
- promote the use of standard details which produce economies of scale in construction, maintenance and storage of replacement stock.

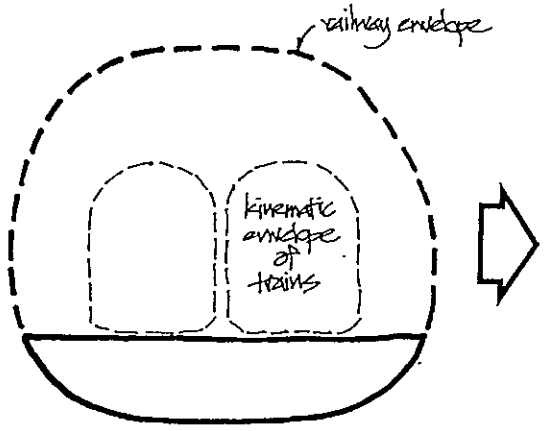
(i) The "Railway Envelope"

- One of the key design parameters identified in Chapter 3 is the need to create a modern, efficient, high technology, 21st century image for West Rail, employing state of the art, cutting edge design.
- Although the adoption of standard details for hard landscape elements which are repeated throughout the West Rail (such as fences, railings and paving etc.) will help to convey a co-ordinated theme or approach to the railway design, the image of West Rail will be created primarily through the public's perception of the major engineering and architectural structures associated with the railway, i.e. the stations, bridges, viaducts and portals etc..
- It is proposed that the major engineering structures required throughout West Rail should adopt physical forms which convey the desired image of a modern, efficient, 21st century, state of the art, facility. Furthermore, it is proposed that a design concept for the "railway envelope" is established which is then used as a template for the detailed design of all trackside structural engineering components.
- The "railway envelope" is defined as the space occupied by the trains, the trackside hardware such as Overhead Catenary System (OHCS) and Noise barriers, and the bridge or viaduct decks that support the tracks.



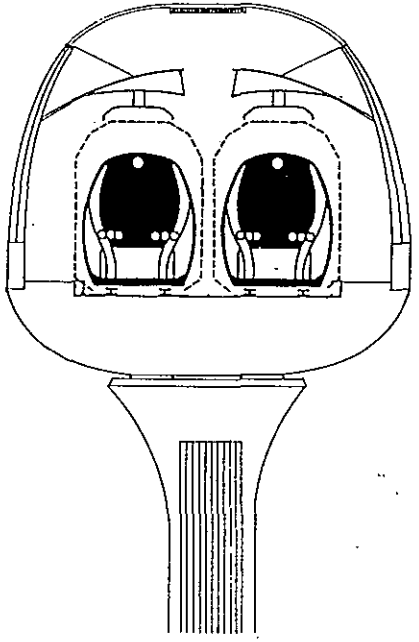
(ii) The "Ovoid Template"

- The diagrams below illustrate the "Ovoid Template" that is proposed as a conceptual device to be used as the design guide for track related engineering throughout West Rail.
- This Ovoid Template, if used consistently, will promote a clear co-ordinated image of modernity, high speed and streamlined efficiency which will provide an attractive and distinctive identity for West Rail that is unique amongst railways in Hong Kong.
- The Template is conceived as a large ribcage or tube which envelopes the track and its associated structures, enclosing within it the smaller kinematic envelopes (lungs) of the trains themselves.
- This conceptual form will find physical expression in the shape of viaduct and bridge decks, the curve of OHCS masts and noise barriers, the shape of portal openings and the completely enclosed form of noise enclosures.
- All these structures will be seen to form part of a unified vision that promotes West Rail as the "Railway of the 21st Century".
- The rounded form and the absence of sharp corners and angles will also ensure that potential negative impacts associated with the intrusion of viaducts and bridges into both urban and rural settings will be minimised.



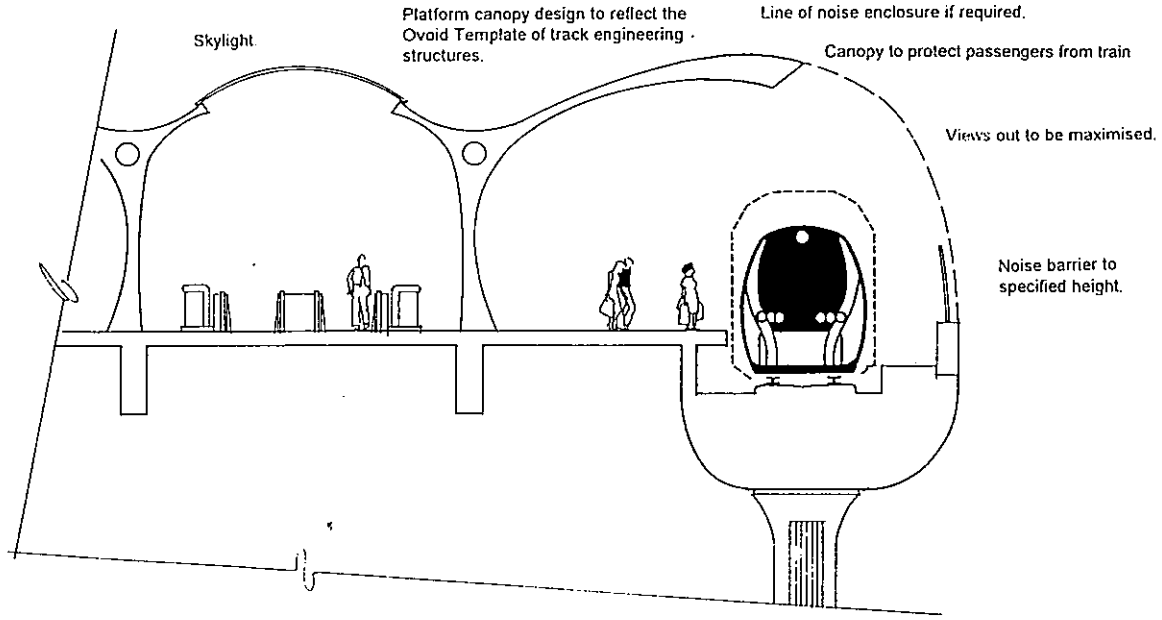
(iii) Rolling Stock

- Although it is outside the scope of this report to discuss the rolling stock, it is obvious that the external appearance of the rolling stock, in particular the passenger carriages and engines, will play a significant role in the public's perception of West Rail.
- It is proposed that the rolling stock should be designed with a stylised streamlined appearance that further promotes the West Rail as a product of the next century.



(i) Building Form

- The stations will be one of the principal elements influencing public perception of West Rail.
- Each station design will be required to respond to a different urban context and, consequently, a different set of detailed design parameters. Furthermore it is likely that some stations will have commercial or residential development above them. The building forms of the stations will be a distillation of all these factors, and also of architects' aesthetic concepts.
- In order that that a strong "line identity" is created for West Rail, it is recommended that, as far as possible, the structural form of the stations themselves is kept visually distinct from any associated commercial or residential development and further that this form are consistent for all stations.
- An architectural consultant should be appointed to advise on how the West Rail "line identity" should be manifested in station design.
- The best opportunities to create distinctive station identities will be in the Northern (TS100) and Western (TS200) Sections, where the track is either at grade or elevated. There are likely to be two basic types of station - those with development above, and those without.
- Where there is no development above the station, excellent opportunity exists to provide a distinctive architectural identity for the station which should be derived from the modern, streamlined image previously described. Elevated station platforms should maximise the sensation of being open to the sky, and lateral visual connections with the surrounding landscape context should be maximised. Similarly, visual connections with the railway corridor at either end of the station should be encouraged and the curvilinear architectural language adopted in the "Ovoid Template" should be extended to the platform canopies so that the visual connection between the station and the railway corridor is emphasised. Platform furniture should also adopt a similar design aesthetic.
- Where the stations are part of a larger residential / commercial development, it is likely that the best opportunities to present consistent external station images will be at the station portals. Where the track is at grade or elevated, it is recommended that an extended portal should be built at either end of each station, projecting a reasonable distance beyond the building line of any associated residential / commercial development.
- These portals should express the "Ovoid Template" of the railway corridor "envelope" that is described in the previous section and repeated elsewhere in engineering structures and trackside equipment (see next section "Corridor Proposals").
- It is proposed that stations should be built of materials such as steel and glass which convey a modern, technologically efficient image and which are consistent with the need to generate large spans and a sense of transparency.
- The stations should be bold and innovative structures which use advanced technological knowledge to create light and airy spaces with integral lighting systems, enabling them to become important landmarks in the urban landscape both by day and by night.



Elevated Station, Island Platform Type

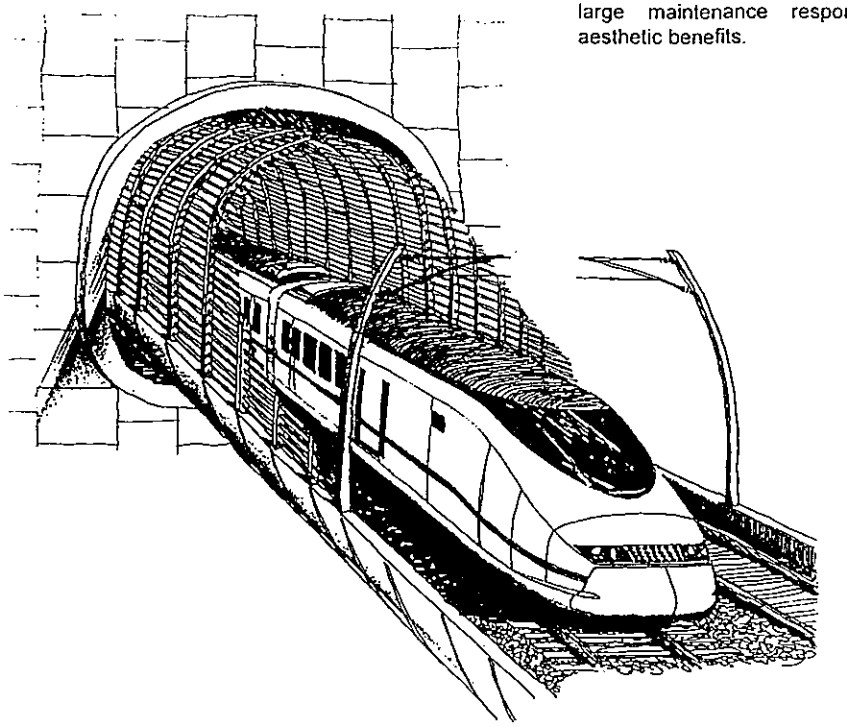
(ii) Station Entrances and Forecourts

Hard Landscape Treatment

- Station entrances and forecourts should be clear and uncluttered, allowing uninterrupted freedom of movement and circulation.
- Disabled access should be provided in a non-discriminatory manner.
- Paving materials should be carefully selected to be hard wearing, non-slip and provision should be made for tactile surfaces for the blind. Details are provided in **Technical Appendix I**.
- Signage should be clear, concise and eye catching. Opportunity exists to create very distinctive signage systems which become a recognisable part of the street-scene and lend an identifiable image and character to the West Rail, much in the same way as the Metro signage in Paris has for decades been a distinctive graphic icon.
- Architectural feature lighting should be use where particular architectural elements or design themes are desired to be emphasised.

Soft Landscape Treatments

- It is likely that space around station entrances and forecourts will be limited and there will few opportunities for extensive planting.
- The requirement that circulation space around entrances should be maximised dictates that planting in these areas should in most cases be limited to trees in tree grilles. These will not restrict pedestrian circulation but will provide an attractive greening effect and will moderate the microclimate, most significantly with regard to the provision of cooling shade.
- Station entrances and associated signage should be clearly visible and should not be obscured by tree canopies. Nevertheless, street trees enrich the quality of the urban environment and architects' preferences for unobscured views of station elevations should not be at the expense of the provision of street trees.
- It is recommended that station interiors should not be planted as the areas that would be available for planting are likely to be very small and would therefore incur disproportionately large maintenance responsibilities for relatively small aesthetic benefits.



Portal at Elevated Station with Development above

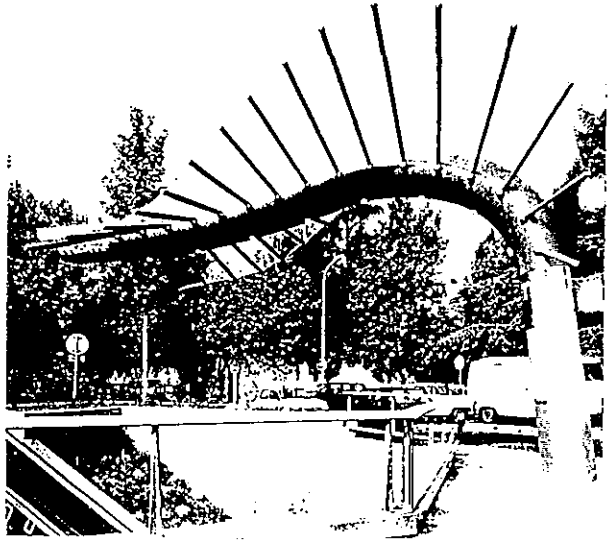
(iii) Relationship with surroundings

Hard Landscape Treatments

- All station developments must establish strong connectivity with the surrounding urban context. Directional signage should be frequent, clearly visible and concise.
- Footbridge connections should be provided with adjacent residential developments to increase ridership and ease pedestrian flows.
- Paving patterns should be developed which complement the station architecture and relate to surrounding open spaces.
- Adequate paved circulation space should be allowed at pedestrian road crossings.
- At "Kiss and Ride" and other drop off areas, canopies should be provided to provide shelter from rain whilst people are disembarking from cars. Canopy design should be consistent with the curvilinear theme adopted for other structures throughout the railway.

Soft Landscape Treatments

- Soft landscape design should be bold and robust, using colour, texture and form to provide interest. Planting themes should be responsive to the context and should provide continuity with local urban landscape themes (e.g. types of street trees).

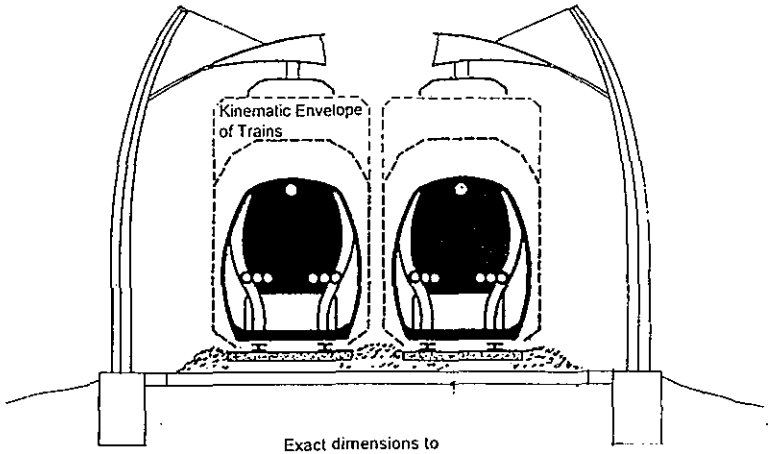


Metro Signage, Lyon, France

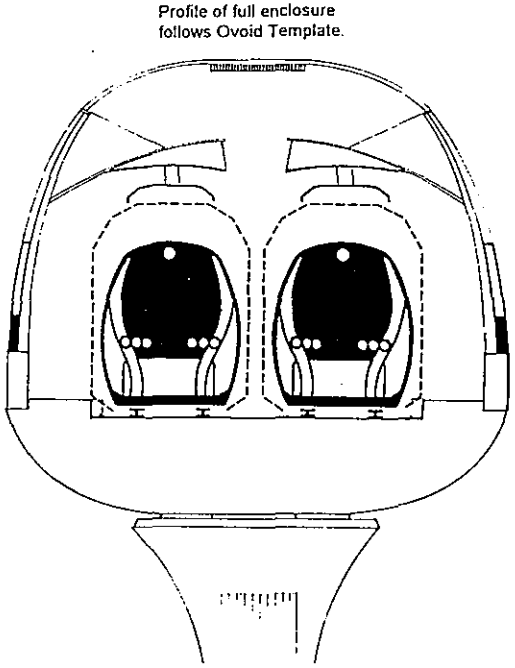
(i) Overhead Catenary System (OHCS)

Hard Landscape Treatment

- The Overhead Catenary System (OHCS) will be a major visual component of the railway, and its design will contribute to the public image of West Rail.
- The design of the OHCS should be consistent throughout the railway, whether situated on embankments, in cuttings, or on bridge or viaduct decks. It should reflect the "Ovoid Template" described previously, and should be designed to appear as an integral component of larger structures such as bridges and viaducts.
- Masts supporting the OHCS should be fabricated to a standard curvature which is constant throughout the railway for a specific track configuration. Different track configurations will call for different degrees of curvature, but there will be a limited number of typical configurations.
- The mast curvature should be designed to continue the ovoid cross-sectional profile of viaduct and bridge decks and parapet walls in such a way as to create the impression of an large ovoid envelope enclosing the smaller kinematic envelopes of the trains.
- The spacing of the masts should be as regular as possible and the positioning of masts on viaduct and bridge decks should be consistent with the "ribbing" of the concrete finishes to the deck elevations.
- Masts should either be hot dip galvanised or be finished with powder-coated paint so as to minimise maintenance requirements. If painted, colour schemes should be neutral and should be selected to minimise visual intrusion (e.g. in rural areas, dark earth tones are recommended).
- The armatures may also be curved to continue the curvilinear design theme.
- The exact positioning of the masts relative to the track and the exact degree of curvature that permits adequate safety margins for the kinematic envelopes of the trains can be refined according to the detailed engineering parameters.
- The illustrations below represent a conceptual framework for the OHCS design which can be refined according to these detailed engineering parameters, whilst retaining the spirit of the design concept.



Overhead Catenary System



Noise Barriers

(ii) Noise Barriers and Noise Enclosures

Hard Landscape Treatment

- Noise barriers and noise enclosures should be designed to appear to be an integral part of larger engineering structures such as viaducts and bridges. They should continue the "Ovoid Template" theme of other engineering structures, following the curved profile generated by the OHCS masts.
- Noise barriers should be of modular design for flexibility and economy. They should be supported by curved steel posts which echo the design of the OHCS masts. The posts should be finished with powder-coated paint in neutral colours to match the colour scheme of the OHCS masts.
- Noise barriers may be clear or opaque depending primarily on the degree of noise attenuation / absorption required and secondarily on the need for passenger views from the train. Generally, passenger views should be maximised in order to enhance the passenger experience and therefore clear barriers are preferred where noise attenuation requirements permit. Although clear barriers will require more maintenance (for cleansing) than opaque barriers, the benefit gained from the view is considered to outweigh the disadvantage of the extra maintenance.
- Noise barriers would be visible from both sides and should be designed accordingly. Patterned effects on opaque barriers should be used to provide interest. Pattern designs on the train-side of barriers should take into account the design speed of the train at that point.
- Standard detail designs for noise barriers are presented in **Technical Appendix I.**

Noise barriers to be integrated with parapet design and follow same profile as OHCS masts. Height of noise barriers varies.

Transparent barrier to permit passenger views to surroundings (where noise attenuation parameters permit).

Lower portions of barriers can be opaque.

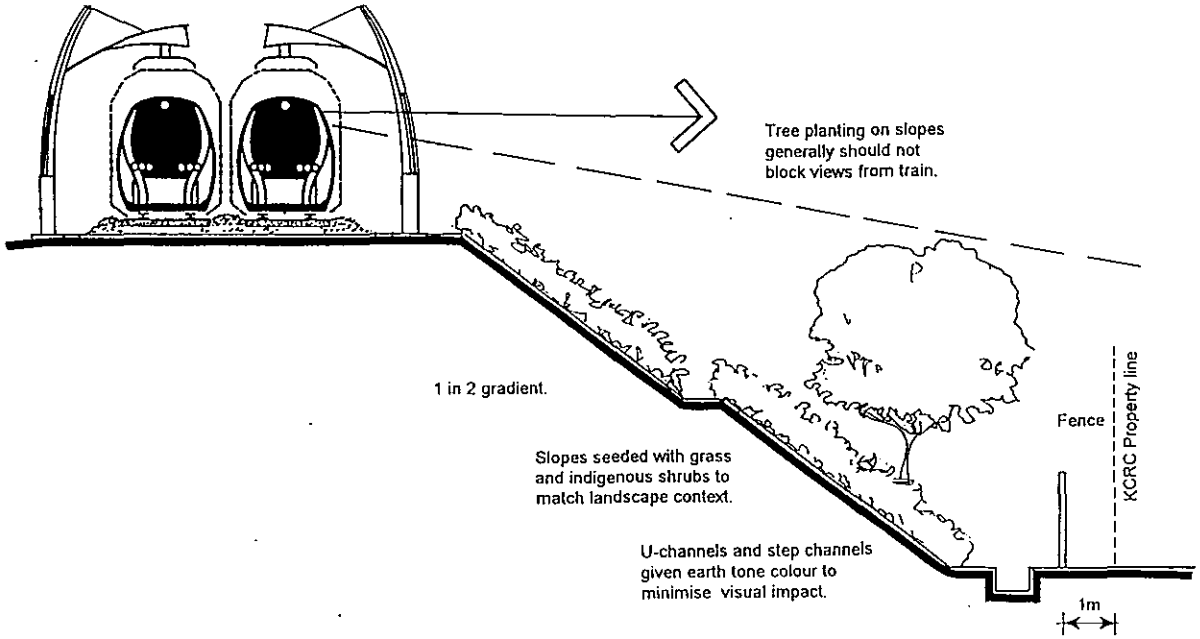
(iii) Embankments

Hard Landscape Treatment

- Within acceptable cost parameters, embankments should be replaced by viaducts when their height is 10m or more above the surrounding land. This will reduce requirements for fill, reduce land take, reduce potential flooding, reduce traffic severance and reduce visual severance.
- Embankments should be formed to 1:2 gradients so as to minimise the width of the railway corridor whilst permitting soft landscape treatments on the embankment slopes.
- U-channels, step-channels and adjacent splash guards/paths should be in coloured concrete (e.g. Shadecrete) to blend the concrete with the local earth colour and thereby reduce glare and associated negative visual impacts. The width of splash guards should be minimised.
- Where access paths are required at the base of the embankments, these should be in concrete and also coloured in earth tones, as per the U-channels.

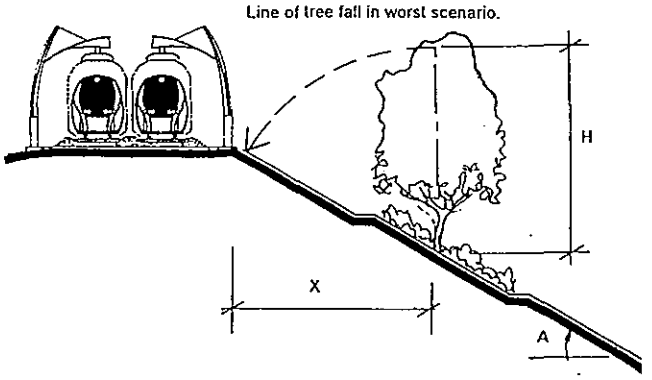
Soft Landscape Treatment

- A 1.5m high fence should be provided 1m inside the KCRC boundary line. Beyond this there should be a 1m wide path for KCRC access long the fence line.
- Adequate soil cover should be provided on the embankment for the establishment and maintenance of trees, shrubs and grass - at least 1m graded earth fill over rock.
- The planting regime on embankments should be as follows:
  - on the verge between track and top of embankment - no grass or planting.
  - on embankment - hydroseeding of indigenous grass shrub mix with pit planting of trees/shrubs where appropriate.
- Trees, shrubs and grasses should be selected from the recommended species lists and chosen to match with the indigenous vegetation pattern in the surrounding landscape.
- Trees and shrubs should be positioned to provide the required degree of screening or open views from the train as recommended later in this chapter for each specific section of track.
- Trees and tall shrubs should not be planted in close proximity to the track so as to prevent potential damage to the track and OHCS by fallen trees. The distance from the track within which trees and tall shrubs may be planted varies according to the ultimate height of the tree/shrub (i.e. smaller trees may be planted closer to the track than larger ones). The diagram below indicates a simple formula for calculating this distance from the track within which planting is not permitted, described as a function of the tree's ultimate height. Trees and shrubs in the recommended species lists are categorised according to their ultimate height.



For safety reasons, trees on embankments should not be planted within "X" metres of the top of the slope, where X = H x cosine A ,
where "H" is the ultimate tree height and "A" is the angle of the slope.

For a 1 in 2 slope the formula is - "X" = 0.9H



Calculation of minimum distance from track within which trees can be planted on embankments

(iv) Cuttings

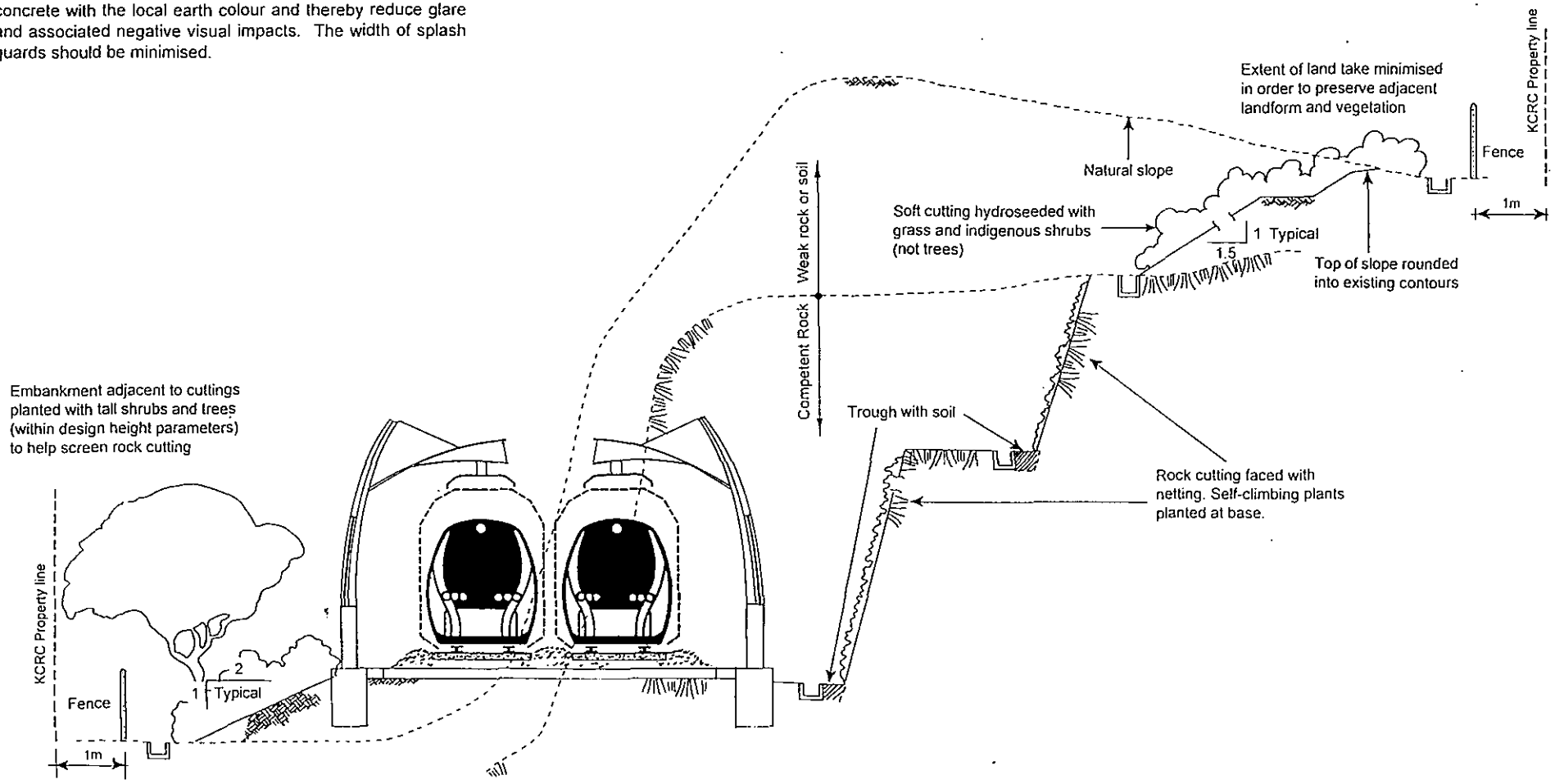
Hard Landscape Treatment

- The railway should be aligned horizontally and vertically to minimise cutting.
- Cutting in rock should be as near vertical as geotechnically acceptable so as to minimise the volume of cut.
- Sprayed concrete should not be used on rock faces.
- To prevent rockfall, netting fixed to the rock face should be used in preference to fence guards. Netting should be dark coloured.
- Cutting in soft ground should be at an angle of 1 in 1.5 in order to minimise the upslope extent of the cut.
- U-channels, step-channels and adjacent splash guards/paths should be in coloured concrete (e.g. Shadecrete) to blend the concrete with the local earth colour and thereby reduce glare and associated negative visual impacts. The width of splash guards should be minimised.

Soft Landscape Treatment

- The planting regime for rock cuttings should be as follows:
  - Self-clinging climbing plants should be planted at the base of the rock cut and on rock berms. Trenches to receive these climbing plants should be excavated along the base of the cut face. Drainage channels should be positioned to allow climbing plants between the channels and the cut face;
  - self-clinging climbing plants should be planted at the junction between rock cut and soft cut and at the edges of the rock cut.

- The planting regime for soft cuttings should be as follows:
  - on the verge between track and bottom of cut - no grass or planting.
  - on the cutting - hydroseeding of indigenous grass/shrub mix with pit planting of shrubs where appropriate.
- Shrubs and grasses should be selected from the recommended species lists and chosen to match with the indigenous vegetation pattern in the surrounding landscape.
- Trees should not be planted on cuttings so as to avoid potential damage to the track and OHCS by fallen trees.



(v) Viaducts

Hard Landscape Treatment

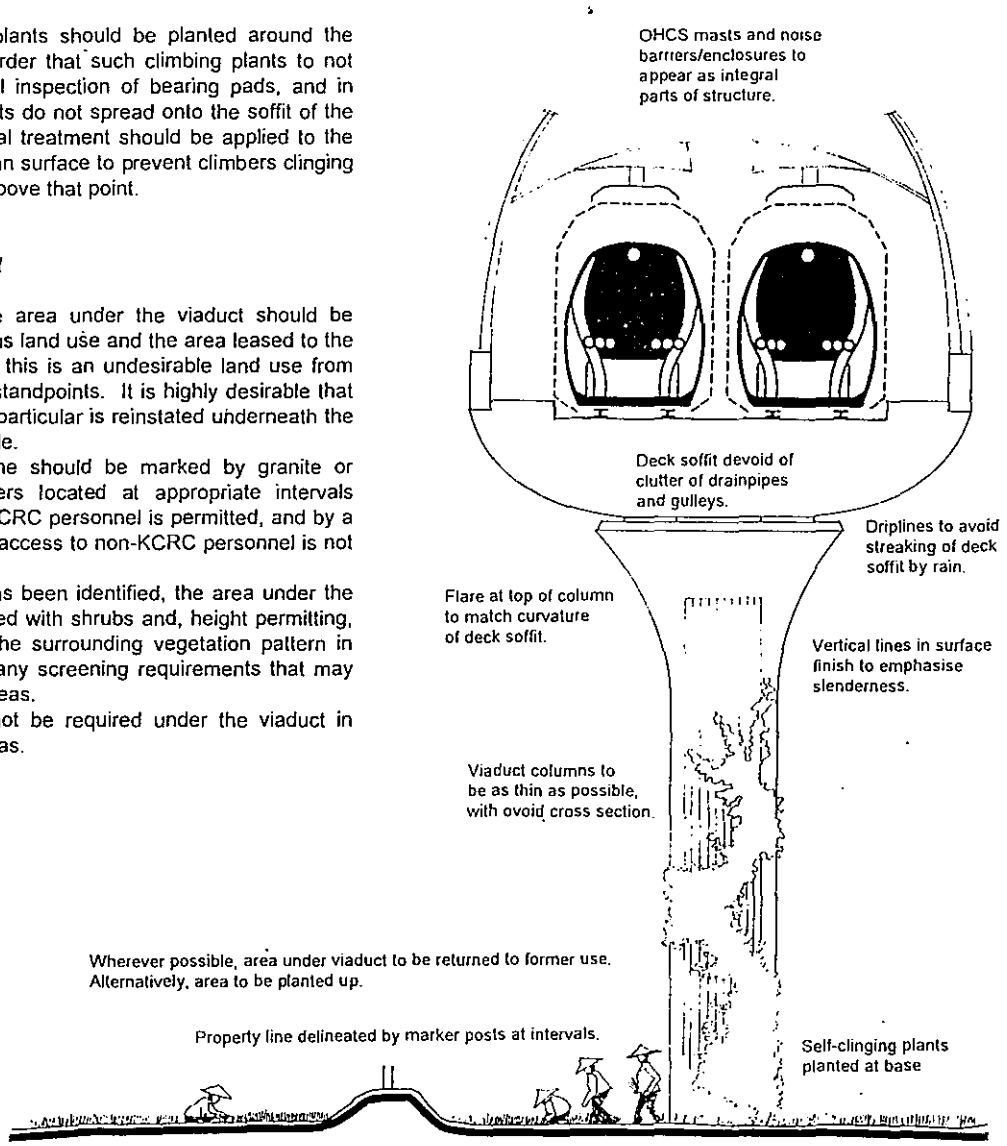
- Within acceptable cost parameters, viaducts are preferred to embankments when the track is 10m or more above the surrounding land. Viaducts reduce fill requirements, reduce land take, reduce potential flooding, reduce traffic severance and reduce visual severance.
- Large radius curves should be incorporated into the vertical profile so that the profile is elegant and flowing in appearance. This is an important consideration both from the point of view of passenger experience and also because many external views of the viaducts will be oblique views where changes in the vertical profile are strongly evident due to the foreshortening effect.
- The viaduct design should be based on the ovoid template outlined in section 4.1.1.
- The viaduct and supporting columns should be as thin as possible so as to convey a lightweight appearance.
- The viaduct and supporting columns should adopt rounded and curvilinear forms, avoiding sharp edges.
- The viaduct deck soffit should be devoid of any clutter associated with drainage requirements. Drainpipes and gulleys should be hidden within the deck and column structures.
- Horizontal lines may be incorporated in the surface detailing of the parapet walls in order to give the deck a visually slender appearance.
- Columns should be ovoid in plan section, narrow at the base and gently flared towards the top, in both front and side elevations. The curvature of the flare should be designed to be tangential with the curvature of the parapet wall.
- Vertical lines should be incorporated in the surface detailing of the column (e.g. by formwork detailing) in order to give the columns a visually slender appearance.
- Drip lines should be applied to the underside of the deck parapet so as to prevent unsightly streaking of the deck soffit by rainwater.
- Noise barriers, when required, should be designed so as to appear as a wholly integrated part of the structure and not an "add-on".

Soft Landscape Treatment

- Self clinging climbing plants should be planted around the base of columns. In order that such climbing plants to not interfere with the visual inspection of bearing pads, and in order that climbing plants do not spread onto the soffit of the viaduct deck, a chemical treatment should be applied to the top 500mm of the column surface to prevent climbers clinging to the column surface above that point.

Land Use under the Viaduct

- Wherever possible, the area under the viaduct should be reinstated to the previous land use and the area leased to the previous tenant, unless this is an undesirable land use from KCRC or Government standpoints. It is highly desirable that agricultural land use in particular is reinstated underneath the viaduct wherever feasible.
- The KCRC property line should be marked by granite or concrete bollard markers located at appropriate intervals where access by non-KCRC personnel is permitted, and by a 1.5m high fence where access to non-KCRC personnel is not permitted.
- If no active land use has been identified, the area under the viaduct should be planted with shrubs and, height permitting, trees so as to match the surrounding vegetation pattern in rural areas, or to fulfil any screening requirements that may be desirable in urban areas.
- Access paths should not be required under the viaduct in either rural or urban areas.



(vi) Bridges

Hard Landscape Treatment

- The bridge deck and columns should adopt the same hard landscape design parameters as previously specified for viaducts, based on the ovoid template described in section 4.1.1. The deck and columns should have the same ovoid cross section and plan section respectively as provided for viaducts, so that there is consistency and uniformity in design throughout the railway.
- Noise barriers, if required, should be identical in design to those incorporated in the viaduct design, and should appear to be an integral component of the bridge and not an "add-on".

Soft Landscape Treatment

- Self-clinging climbing plants should be planted around the base of bridge columns. In order that such climbing plants to not interfere with the visual inspection of bearing pads, and in order that climbing plants do not spread onto the underside of the bridge deck, a chemical treatment should be applied to the top 500mm of the column surface to prevent climbers clinging to the column surface above that point.

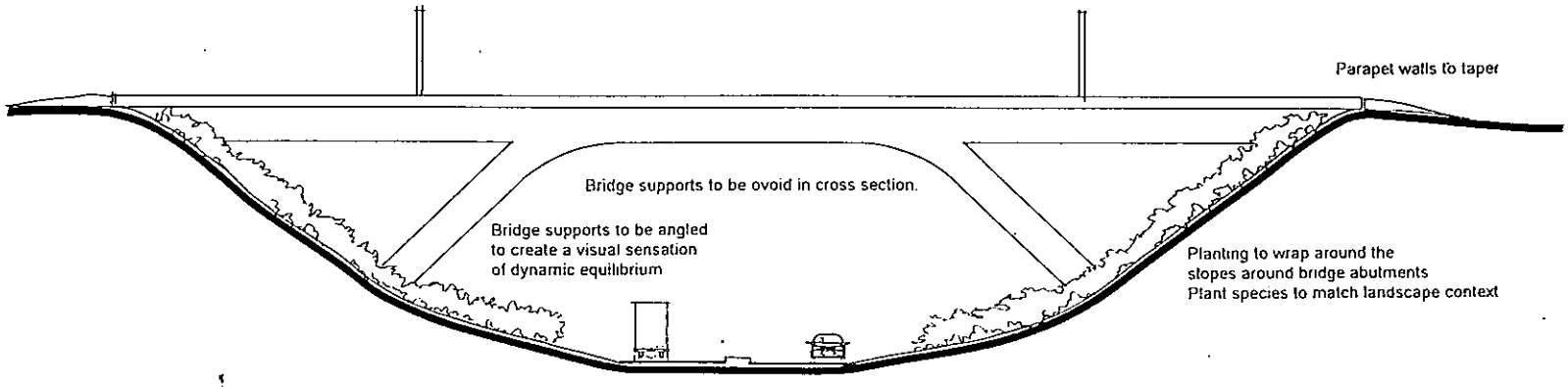
(vii) Viaduct and Bridge Abutments

Hard Landscape Treatment

- Where bridge and viaduct abutments are situated on embankments the embankment should wrap around under the bridge/viaduct at the same angle of slope as on either side of the track. This will create a larger bridge span than would occur if the abutment was vertical, but will create a more open visual effect and greater feeling of space under the deck.
- The abutment slope located immediately beneath the deck should be clad with coloured, patterned concrete or with granite blocks. The width of this area of hard treatment should narrow towards the base of the abutment slope so as to permit the adjacent soft landscape treatments to wrap around underneath the deck.
- Parapet walls on the bridge/viaduct should not stop abruptly at the abutment. Mock parapet walls should extend along the top of the adjacent embankments for a specified distance, the top of the wall tapering smoothly down to ground level.
- Noise barriers, if required, should appear continuous between the bridge/viaduct and the adjacent embankment.
- Where the bridge has a long span which requires intermediate support, this should be provided in the form of angled piers springing from the abutment slope, rather than in the form of vertical columns.
- The angle of such piers should be determined by considering the visual balance between the piers and the angle of slope of the abutment embankment. It is generally preferable that the piers should adopt the same angle as the embankment, but this will depend to a degree on the length of span.
- The cross section of an angled pier should be ovoid, and vertical lines should be incorporated in its surface detailing, in the same manner as previously specified for columns.

Soft Landscape Treatment

- The abutment slopes should be planted with trees and shrubs to match the planting on adjacent embankments, following the guidelines specified above for embankments.



(viii) Cut and Cover Tunnels

Cut and Cover Tunnels vs. Cuttings

- The decision whether or not to place the railway in open cutting or cut and cover tunnel is a function of a number of engineering, environmental and landscape considerations. The principal landscape considerations are:
  - To maximise a positive passenger experience, cuttings are preferable to cut and cover tunnels as the latter prevent any visual connection with the surrounding landscape. This applies to both urban and rural areas.
  - To minimise the potential landscape and visual intrusion of the railway, cut and cover tunnels are preferable to cuttings. This applies more to urban areas than to rural areas.
- Generally, where the West Rail is in the centre of a transport corridor which already in itself constitutes a high visual intrusion, and the railway does not add significantly to the degree of this intrusion, then the railway should be in cutting so as to permit passenger experience of the surroundings.
- On the other hand, where the West Rail runs adjacent to a land use which would benefit significantly from the use of the land over the tunnel (whether for landscape screening purposes or for active land use purposes), then a tunnel is preferred to a cutting.

Hard Landscape Treatment

- A minimum of 1m of earth fill should be provided above cut and cover tunnels for planting purposes.
- Embankments should be graded to blend with adjacent landforms. Where the West Rail abuts open space, the embankments should be designed to flow seamlessly into the open space so as to create a seamless junction.
- Public access should be permitted above the tunnel. Footpaths and cycle-tracks should be designed to exploit the area over the tunnel to provide urban linkages.
- Vent Structures should be designed to blend with the surrounding urban context as far as possible, and should be screened with planting.

Soft Landscape Treatment

- Trees, Shrubs and Grasses should be selected from the recommended species lists and should be chosen to suit their specific landscape purpose in the context of the adjacent land uses. The landscape purpose may be screening, provision of shade to pedestrians and cyclists, structure planting or ornamental planting.

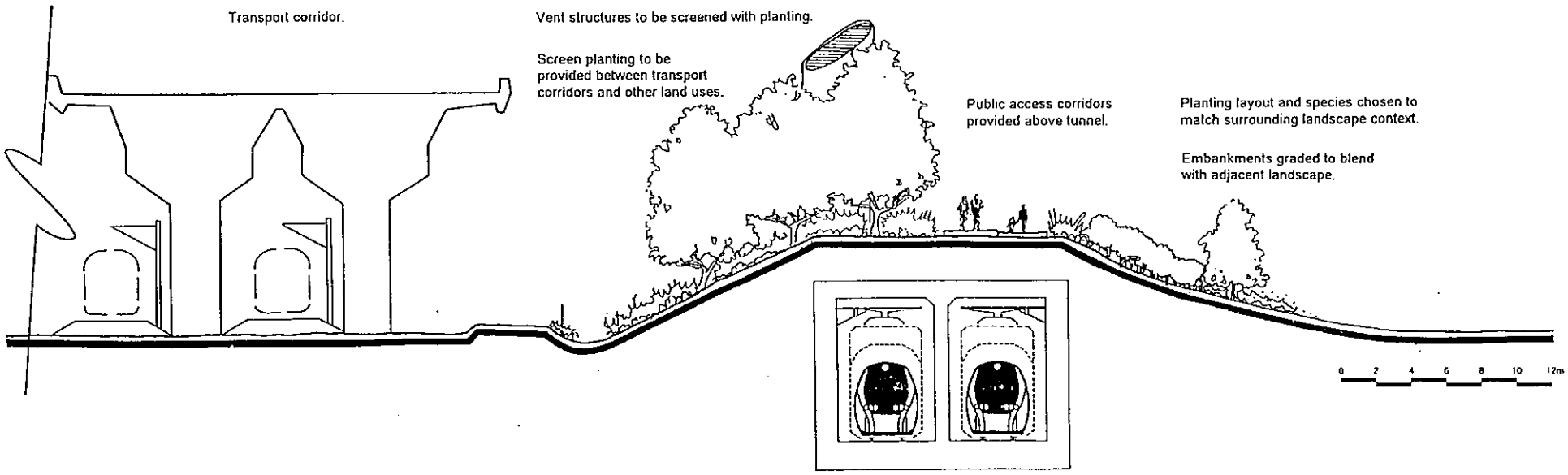
(ix) Portals

Hard Landscape Treatment

- The detailed siting of portals should take into consideration local landform and vegetation so as to minimise disruption to existing landscape features and retain these as elements to screen the portal.
- Portal openings should be ovoid, consistent with the ovoid form of bridge, viaduct and noise barrier structures. The internal arrangement of false ceilings/ducts etc. behind the portal structures may take whatever shape is convenient from an engineering standpoint, provided that this does not compromise the pure ovoid shape presented by the portal itself.
- Where vent structures are required at the portal, the portal should be extended beyond the true tunnel. The extended portal should be covered with soil that is graded to blend with the existing slopes and planted to screen the vent, which should be located at the end of the true tunnel.

Soft Landscape Treatment

- Shrubs and grasses should be planted around the portals to blend with the existing vegetation pattern.
- Trees should not be planted in positions above the portal which may result in fallen trees blocking the track or damaging the OHCS.



(x) Vent Structures

Hard Landscape Treatment

- The siting of vent structures should be carefully selected to minimise visual intrusion.
- Vent structures in rural areas should be finished with earth tone colours so as to blend into the landscape and minimise visual intrusion as far as possible.
- Vent structures in rural areas should be ovoid in plan section so as to match the general design theme of the railway features.
- Vent structures in urban areas should be integrated into the design of adjacent architecture so as to blend into the local urban context as unobtrusively as possible.

Soft Landscape Treatment

- In rural areas self-clinging climbing plants should be planted against vent structures.

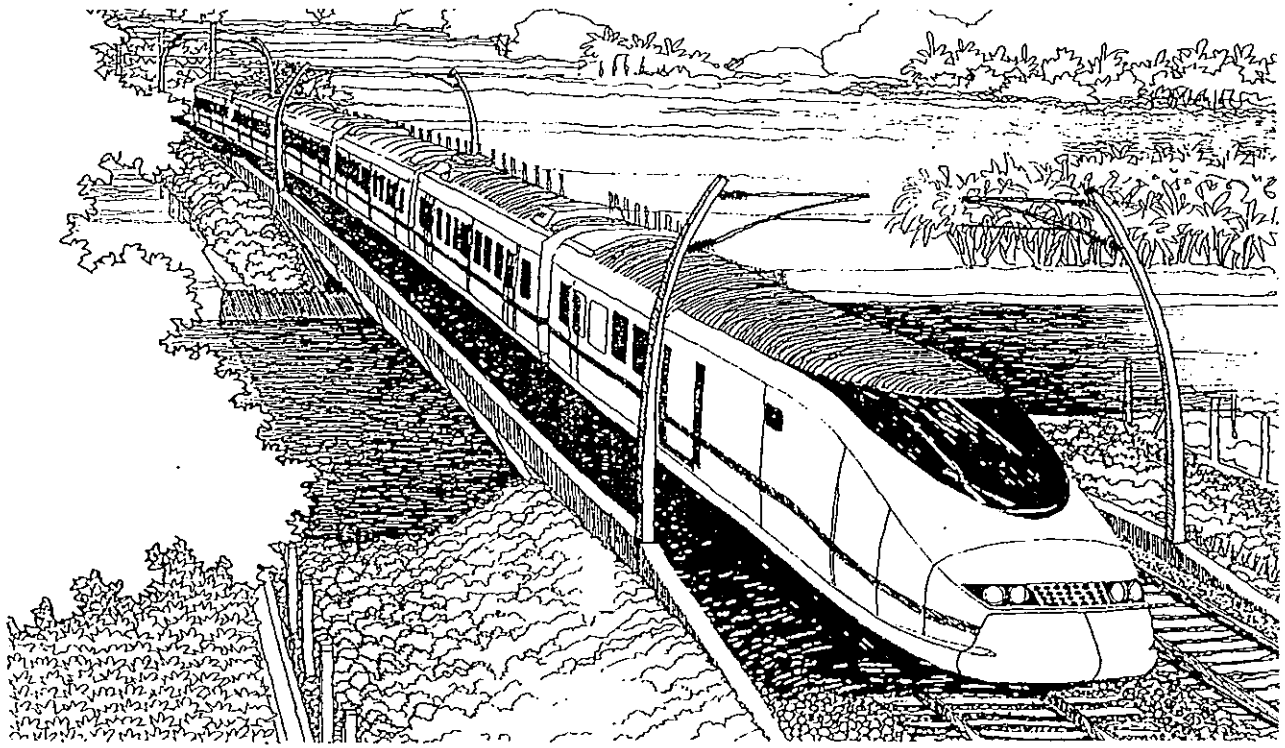
(xi) Trackside Features

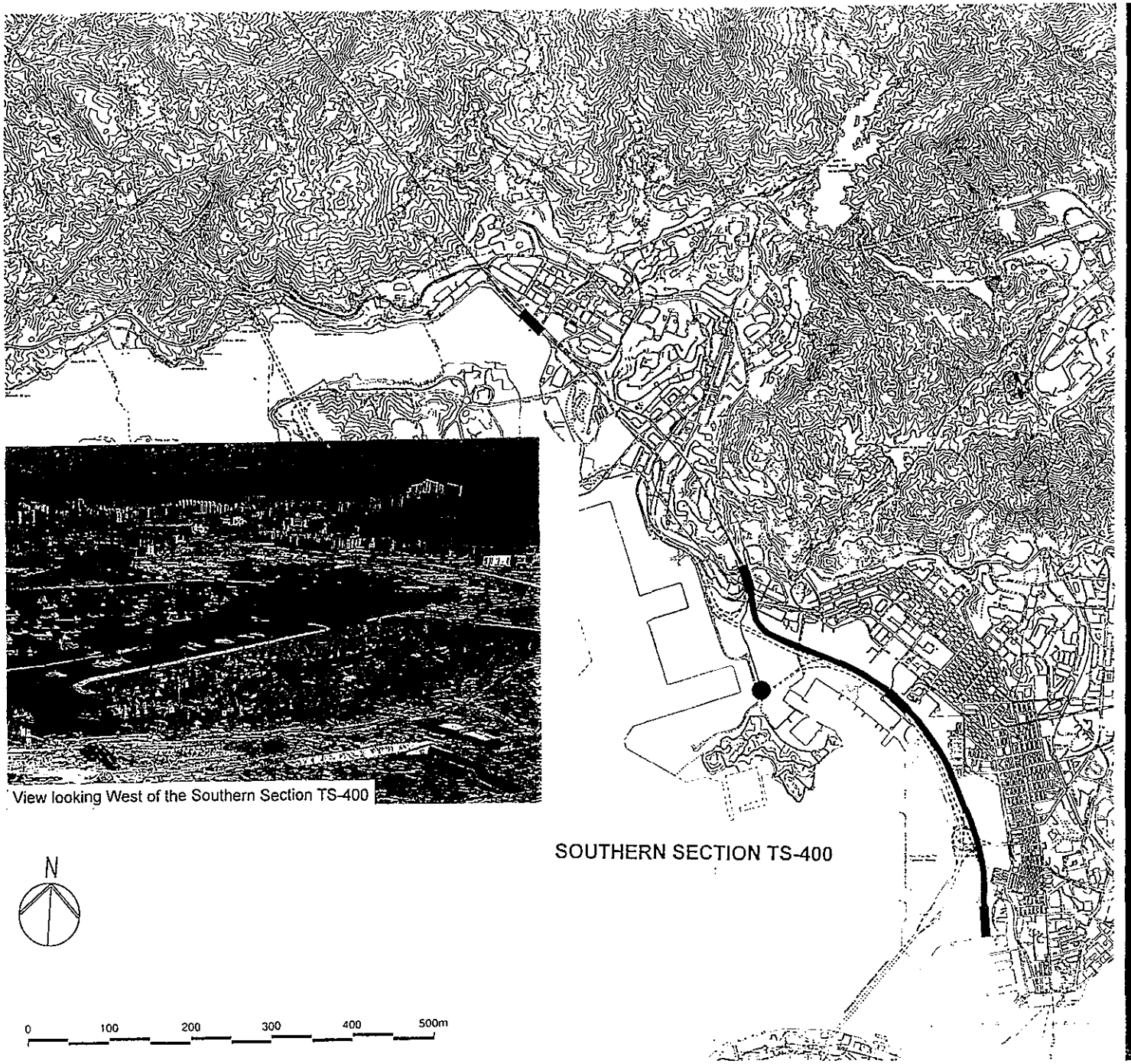
Hard Landscape Treatment

- In addition to the OHCS and noise barriers, it is anticipated that visible trackside features will include transformer stations, signal cabins (near stations), chest boxes for emergency tools, communication stations and fences and gates.
- Trackside clutter should be minimised.
- Trackside features should be sited based on function and where possible they should be located to maintain passenger views.
- Large structures such as transformer stations or signal cabins should be sited so as to be hidden from adjacent sensitive receivers as far as possible.
- The architectural treatment of transformer stations and signal cabins should be consistent with nearby station architecture. In rural areas they should be finished with dark earth tone colours so as to minimise visual intrusion. Bright corporate colours should not be used.
- Smaller features which fulfil emergency functions, such as communication stations and chests for emergency tools, should be given bright corporate colour finishes that make them visible from a considerable distance along the track.
- Fences should be located at the bottom of embankments, 1m inside the property line.
- Fences should be located at the top of cuttings, 1m inside the property line.
- Fences and gates in rural areas should be finished in dark earth tones so as to minimise potential visual intrusion.

Soft Landscape Treatment

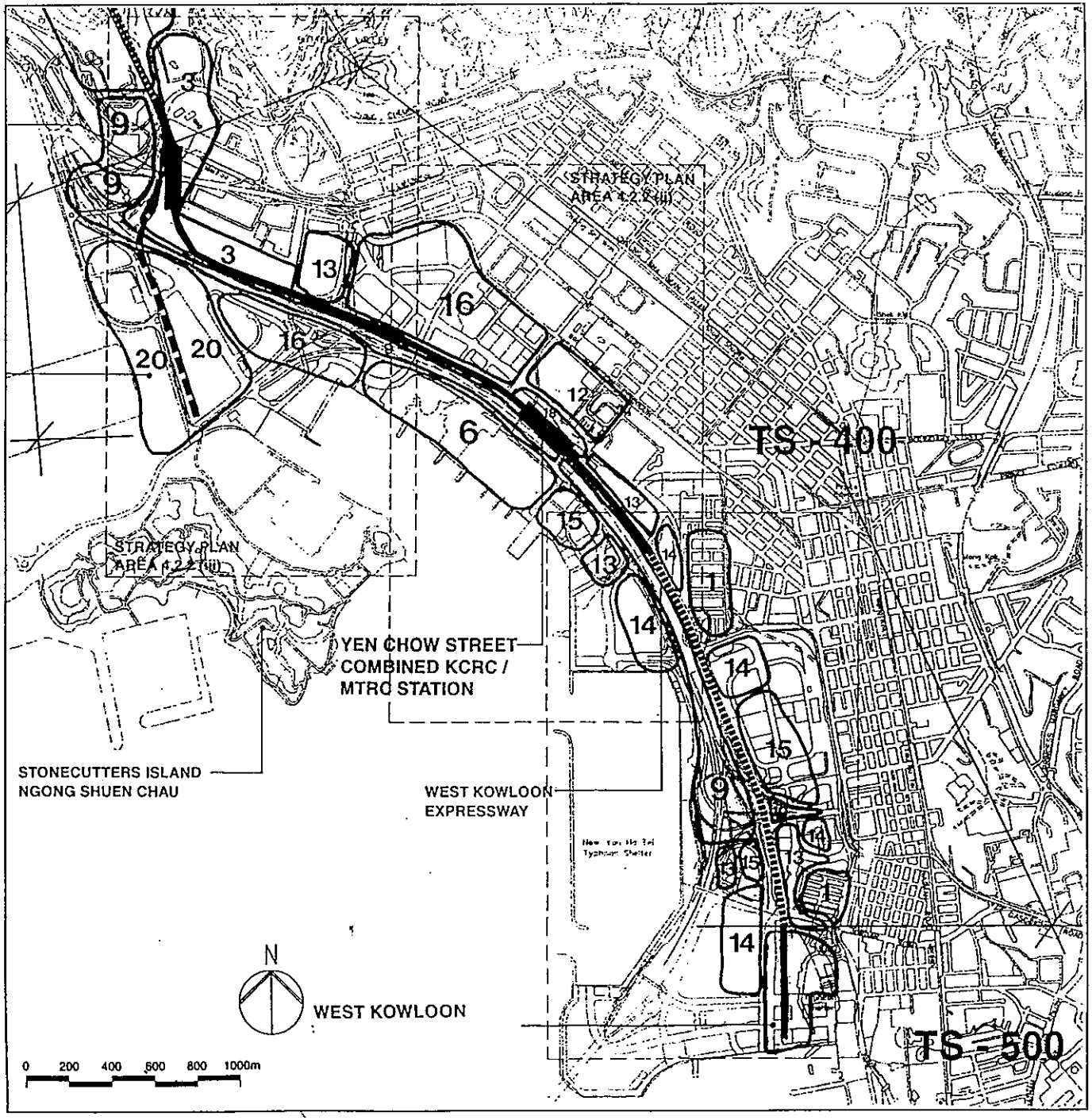
- Larger structures such as transformer stations or signal cabins should be screened from adjacent sensitive visual receivers by tall shrub and tree planting which matches with the local indigenous vegetation pattern. Such planting should not screen views up and down the track from these structures.
- Planting should be used to screen fences at the top of cuttings.





View looking West of the Southern Section TS-400

Fig. 4A
Southern Section (TS400)



EXISTING ADJACENT LANDUSE

1. Urban Residential Area
2. Rural Residential /Farming Area
3. Urban Recreational Area /Public Open Space
4. Rural Recreational Area /Public Open Space
5. Urban Commercial Area
6. Urban Industrial Area
7. Rural Industrial Area
8. Urban Mixed Commercial/Residential Area
9. Transportation Corridor
10. Drainage Channel /River
11. Community Facility (School, Hospital, Bus Station)

ROUTE NATURE

- At Grade
- Cut And Cover Tunnel
- Bored Tunnel
- Embankment
- Cutting
- Viaduct
- Station
- 20 — Yard / Depot

PROPOSED ADJACENT LANDUSE

12. Urban Residential Area
13. Urban Recreational Area /Public Open Space
14. Urban Comprehensive Development Area
15. Urban Development Area
16. Urban Development Area-Container Related
17. Urban Development Area-Hotel Site
18. Urban Mixed Commercial /Residential Area
19. Transportation Corridor
20. Freight /Maintenance Yard
21. Committed Residential Development

CULTURAL AND ENVIRONMENTAL SITES

A. Historical /Ancestral Building
B. Temple /Pagoda /Monastery
C. Fung Shui Site
D. Nullah
E. River /Marsh /Fish Pond
F. Egretry
G. Woodland

VIEWS

- Local View
- Distant View

4.2.2 Landscape Strategy Proposals: (i) West Kowloon Passenger Terminal to Road D7

Context

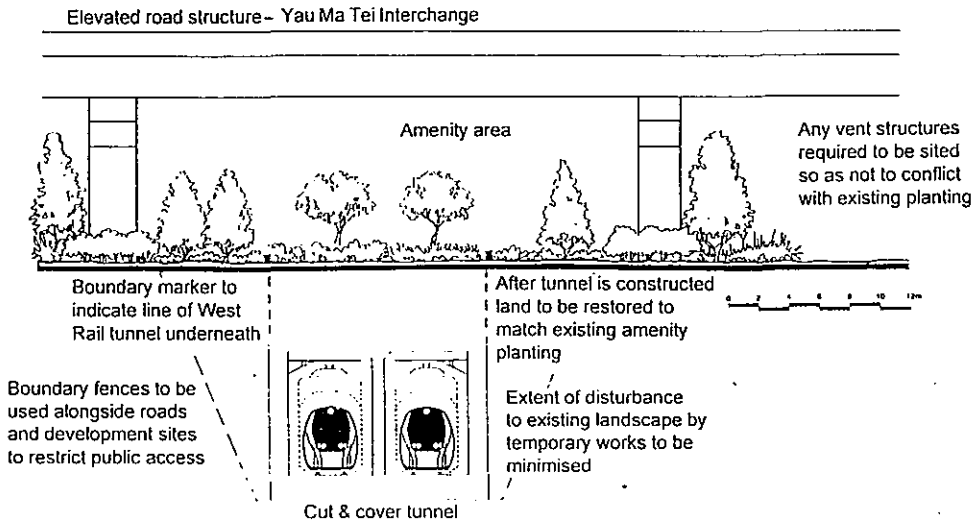
- From north of the proposed West Kowloon station to Road D7 Prince Edward Road, West Rail will run parallel to the West Kowloon Expressway and the LAR. It will be in cut and cover under the Expressway slip roads, so there will be no passenger views.
- The top of the tunnel will vary in depth from -1.0 to -6.5 mPD. Existing ground level either side of the railway will vary be between +5.0 and +11.0 mPD, therefore the physical profile of West Rail will not be visible at ground level.
- Land uses either side of the railway corridor from West Kowloon station comprise a mixture of existing residential areas and proposed uses including public open space, development areas and amenity areas associated with the Yau Ma Tei Interchange.

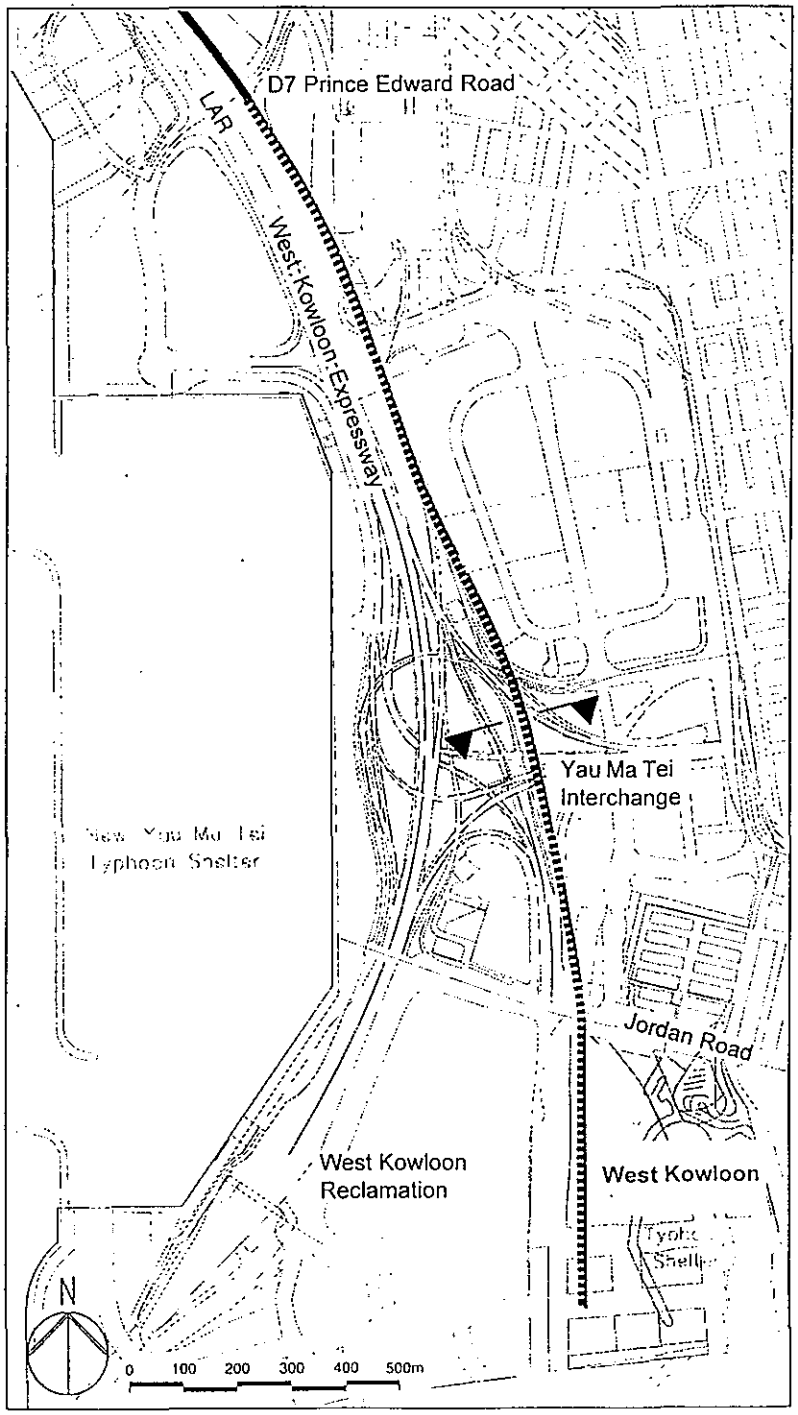
Issues

- **Railway corridor** : Surface treatment along route of tunnel, future use of corridor, and access across tunnel.
- **Property interfaces** : Interface with adjacent land use. Treatment of boundary marker at surface.
- **Visual impact** : Design / location of tunnel vents.
- **Road embankments** : Disruption to slip roads and embankments associated with West Kowloon Expressway from construction of West Rail.

Strategy

- **Railway corridor** : Line of route to be planted with trees and shrubs with footpaths linking existing and planned public open space as shown in landscape analysis section.
- **Property interfaces** : Fencing to be erected on the boundary line, alongside roads and development sites to channel public access to permitted crossing points. No fence required alongside proposed open space to allow pedestrian access, nor adjacent to LAR where there is a corresponding fence.
- **Visual impact** : Number and location of vents not yet determined. Refer to system-wide proposals on vent structures for appearance and location of vents.
- **Road embankments** : Soft and hard landscape treatment to road embankments to match existing. Exact design to be agreed with Highways Department. Refer to systemwide proposals for treatment of embankments and to U-channel, and to Technical Appendices for plant species, surface treatment to footpaths, fencing and markers.





Southern Section (TS400) DESIGN STRATEGY

LANDSCAPE DESIGN STRATEGY REPORT

4.2.2 Landscape Strategy Proposals: (ii) Road D7 to Road D4

Context

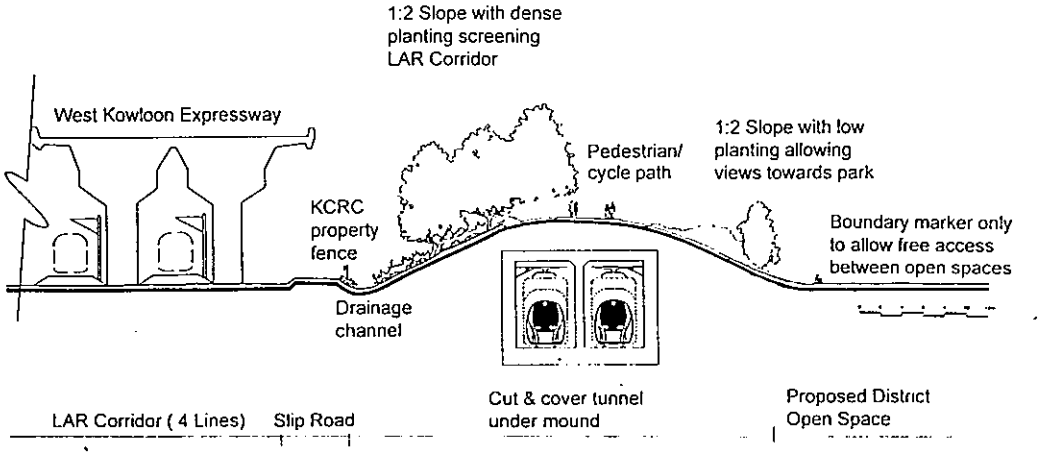
- From Road D7 Prince Edward Road to road D4 Hing Wah Street, West Rail will run north-west parallel to the West Kowloon Expressway and the LAR in cut and cover, so there will be no passenger views. Yen Chow Street combined KCRC / MTRC station is in this area.
- Top of the tunnel will vary in depth from approx. +8.5 to +10.5 mPD. Existing ground level either side of the railway is approx. +5.0 mPD therefore West Rail will be perceived as a linear mound.
- Existing land uses in this area include wholesale fruit / vegetable markets on the west side, two areas of proposed open space, comprehensive development areas, container related development, and amenity areas within the Yau Ma Tai interchange.

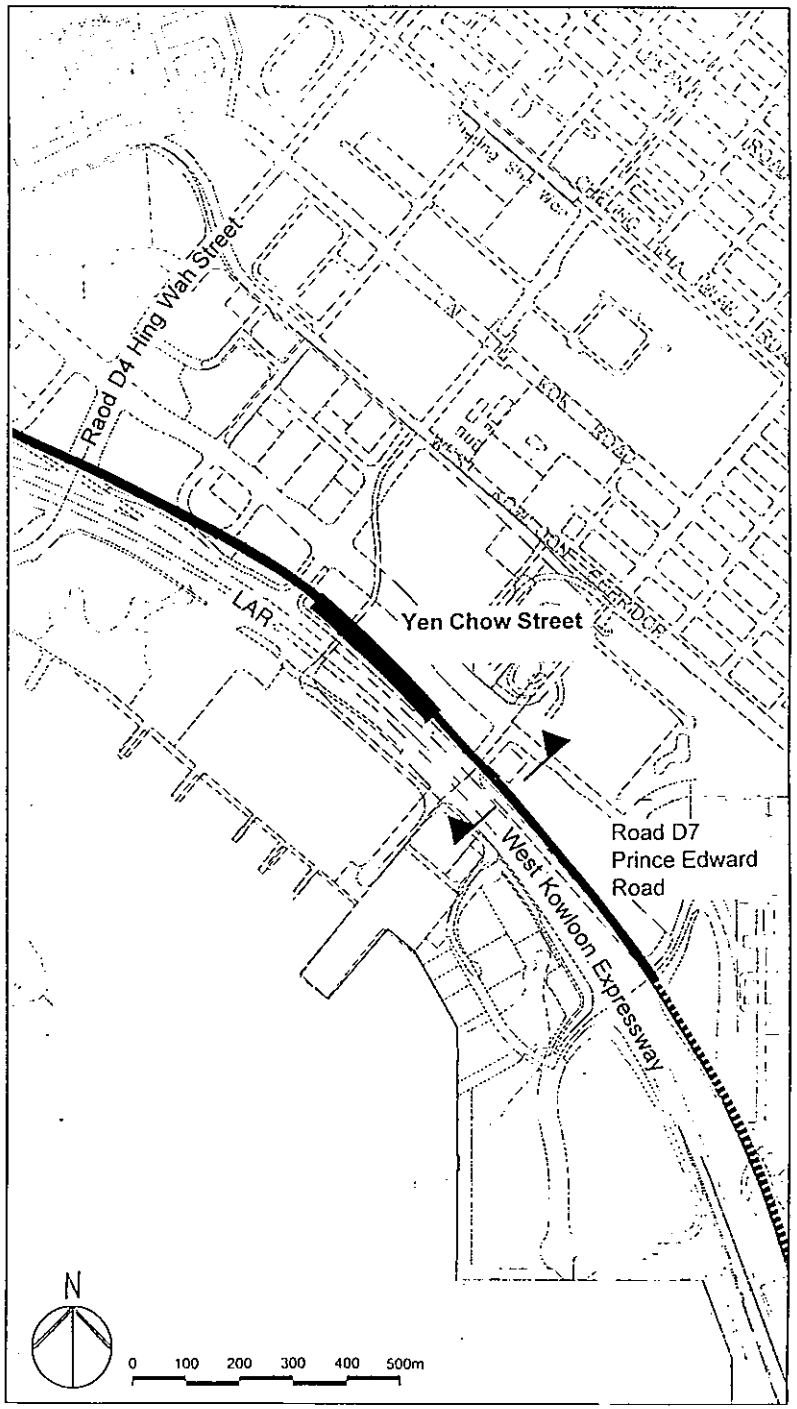
Issues

- **Railway corridor** : Treatment to embankments, access across raised tunnel form and future use of corridor.
- **Property interfaces** : Interface with adjacent Land use. Treatment of boundary marker.
- **Visual impact** : Design and location of vents.
- **Road embankments** : Disruption to slip roads and embankments associated with West Kowloon Expressway from construction of West Rail.

Strategy

- **Railway corridor** : Raised tunnel form to be made into a positive feature by the creation of a planted mound. Line of route to be planted with trees and shrubs with footpaths linking existing / planned public open space, Accesses to be linked to footbridges on the west side. Refer to system-wide proposals on treatment of embankments and to U-channel, and **Technical Appendices** for plant species and surface treatment to footpaths.
- **Property Interfaces** : On eastern side of tunnel where railway corridor adjoins roads or development sites fencing to be erected 1m inside KCRC boundary line, alongside roads and development sites to channel public access to permitted crossing points. No fence required alongside proposed open space or LAR boundary.
- **Visual impact** : Number and location of vents not yet determined. Refer to system-wide proposals on vent structures for general appearance and location of vents.
- **Road embankments** : Restoration of soft and hard landscape treatment to road embankments to match existing. Exact design to be agreed with Highways Department.





4.2.2 Landscape Strategy Proposals: (iii) Road D4 to Mei Foo station

Context

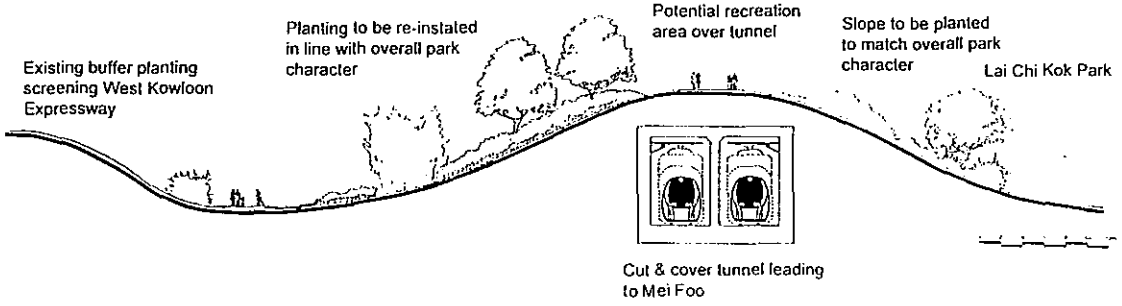
- From Road D4 Hing Wah Street to the southern wall of Mei Foo station, West Rail will run north-west parallel to the West Kowloon Expressway and the LAR, in cut and cover tunnel, so there will be no passenger views.
- Top of the tunnel will vary in depth from approx. +4.0 to +12.5 mPD. Existing ground levels on either side of the railway will vary from approx. +5.0 to +10.5 mPD, therefore West Rail will appear as a linear mound in some sections.
- Current proposed alignment will affect the existing facilities of Lai Chi Kok Park. Proposed land use either side of the alignment comprises open space and proposed container related development areas.

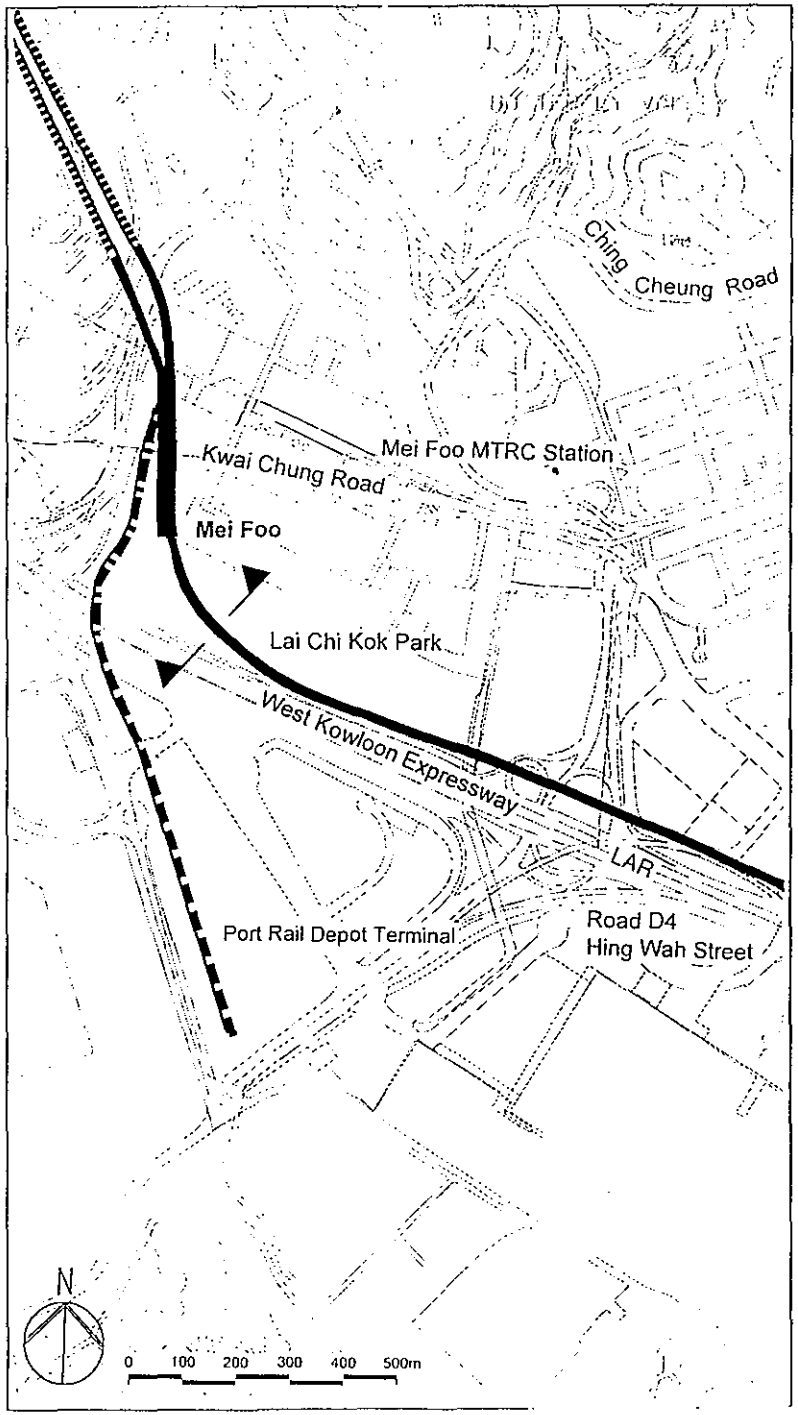
Issues

- **Railway corridor** : Surface treatment along route of tunnel, future use of corridor, pedestrian access across raised tunnel. Use of railway corridor within Lai Chi Kok park will depend on requirements for permanent facilities from Urban Services Department.
- **Property interfaces** : Interface with adjacent land use. Disruption to Lai Chi Kok Park.
- **Visual impact** : Design and location of vents.
- **Road embankments** : Disruption to slip roads and embankments associated with West Kowloon Expressway from construction of West Rail.

Strategy

- **Railway corridor** : Line of route to be planted with trees and shrubs with footpaths linking existing/ planned public open space, as shown in Landscape Analysis. Within Lai Chi Kok Park use of railway corridor should be integrated with permanent park facilities and pedestrian circulation.
- **Property interfaces** : Fencing to be erected on boundary line, alongside roads and development sites to channel public access to permitted crossing points. No fence required alongside areas of existing and proposed open space to allow for ease of pedestrian access, nor adjacent to LAR where corresponding fence exists. Where no fence is used, property line to be indicated by markers at intervals.
- **Visual impact** : Number / location of vents not yet determined. Refer to system-wide proposals on vent structures for appearance and location of vents.
- **Road embankments** : Soft and hard landscape treatment to road embankments to match existing. Exact design to be agreed with Highways Department. Refer to system-wide proposals on treatment of embankments and to U-channel, and to **Technical Appendices** for plant species, surface treatment to footpaths, fencing and markers.





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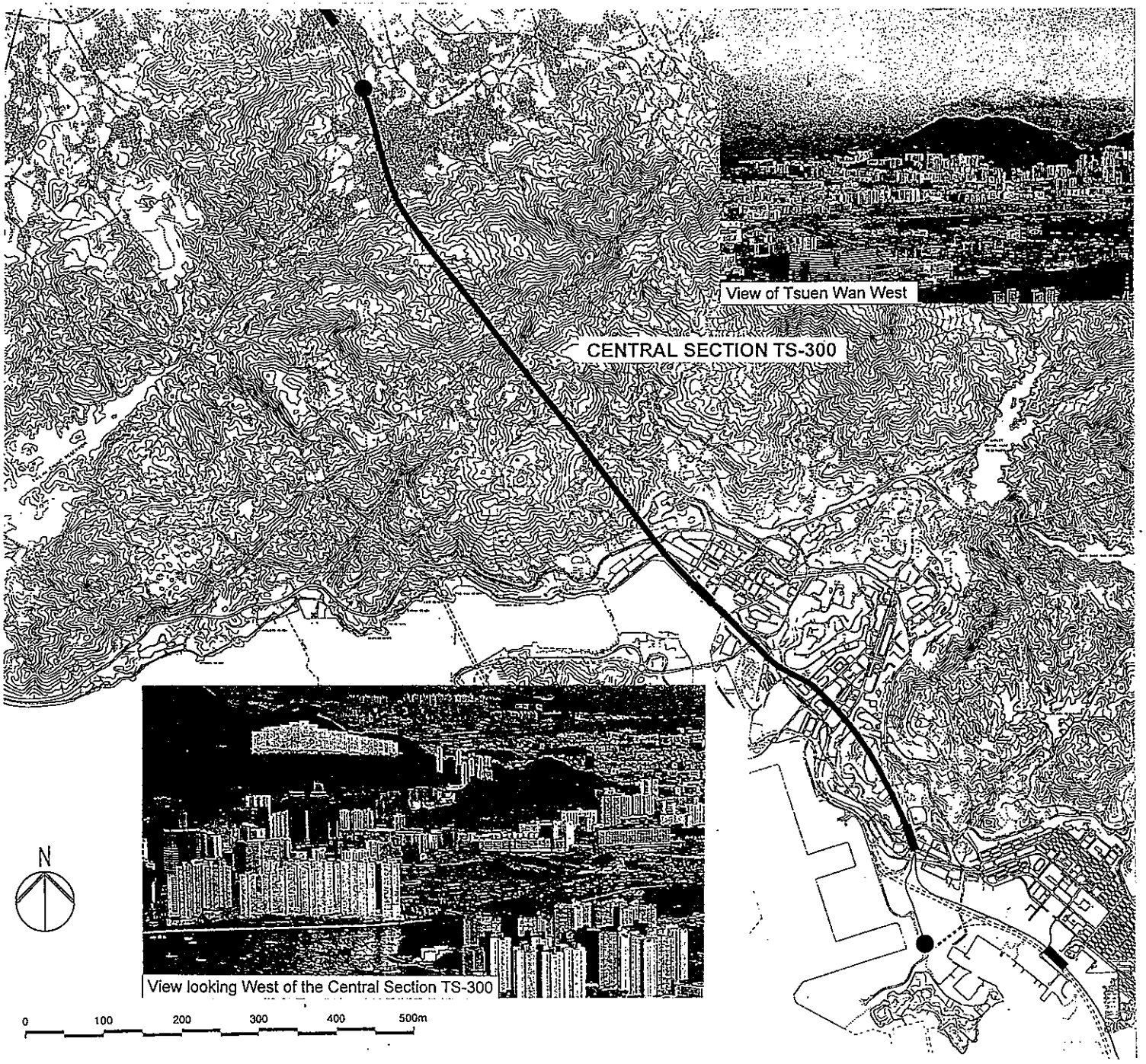
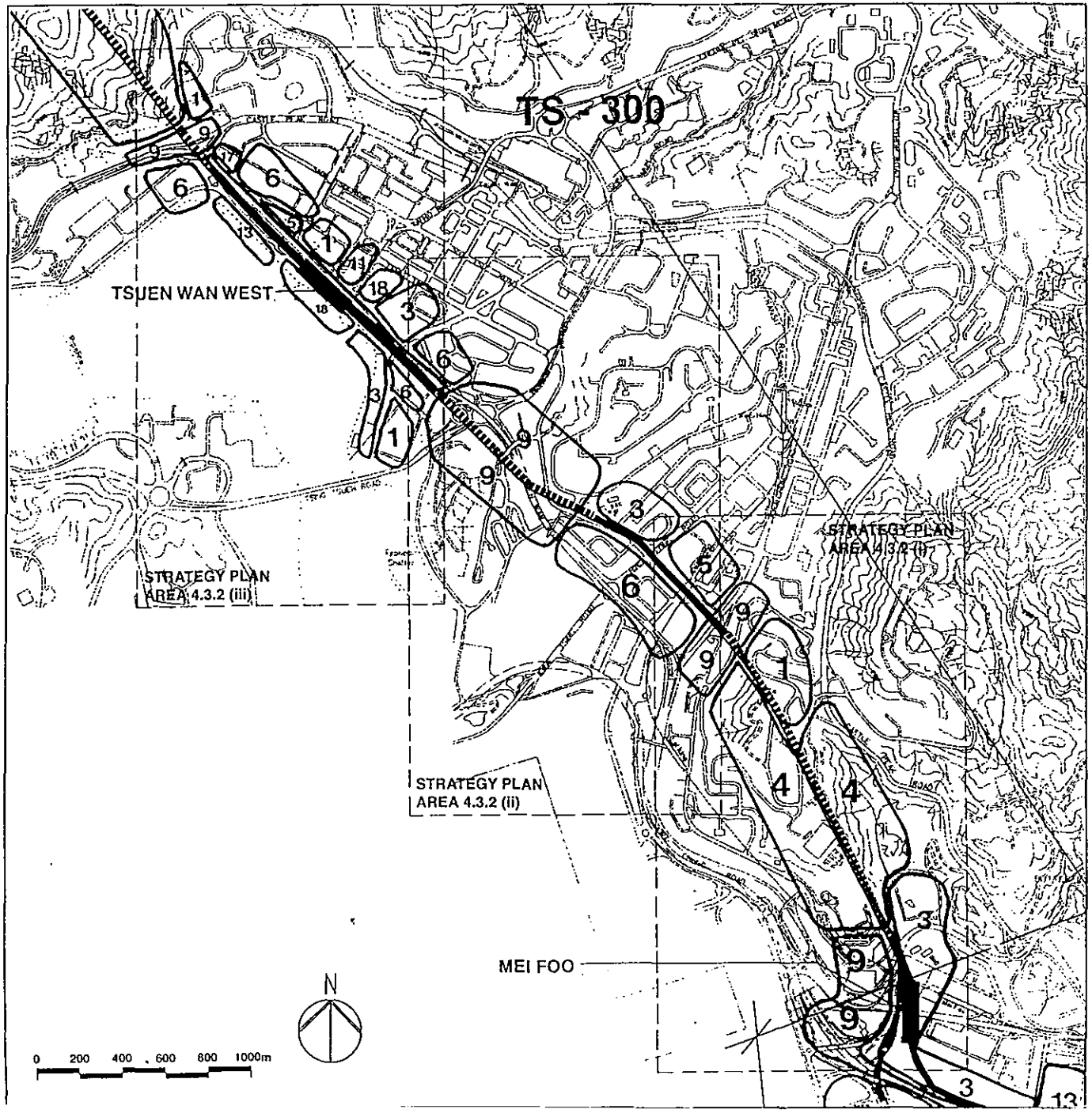


Fig. 4B
Central Section (TS-300)

4.3.1 Landscape Analysis: (i) Mei Foo station to Tsuen Wan Bay



EXISTING ADJACENT LANDUSE

1. Urban Residential Area
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4. Rural Recreational Area /Public Open Space
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6. Urban Industrial Area
7. Rural Industrial Area
8. Urban Mixed Commercial/Residential Area
9. Transportation Corridor
10. Drainage Channel /River
11. Community Facility (School, Hospital, Bus Station)

PROPOSED ADJACENT LANDUSE

12. Urban Residential Area
13. Urban Recreational Area /Public Open Space
14. Urban Comprehensive Development Area
15. Urban Development Area
16. Urban Development Area-Container Related
17. Urban Development Area-Hotel Site
18. Urban Mixed Commercial /Residential Area
19. Transportation Corridor
20. Freight /Maintenance Yard
21. Committed Residential Development

ROUTE NATURE

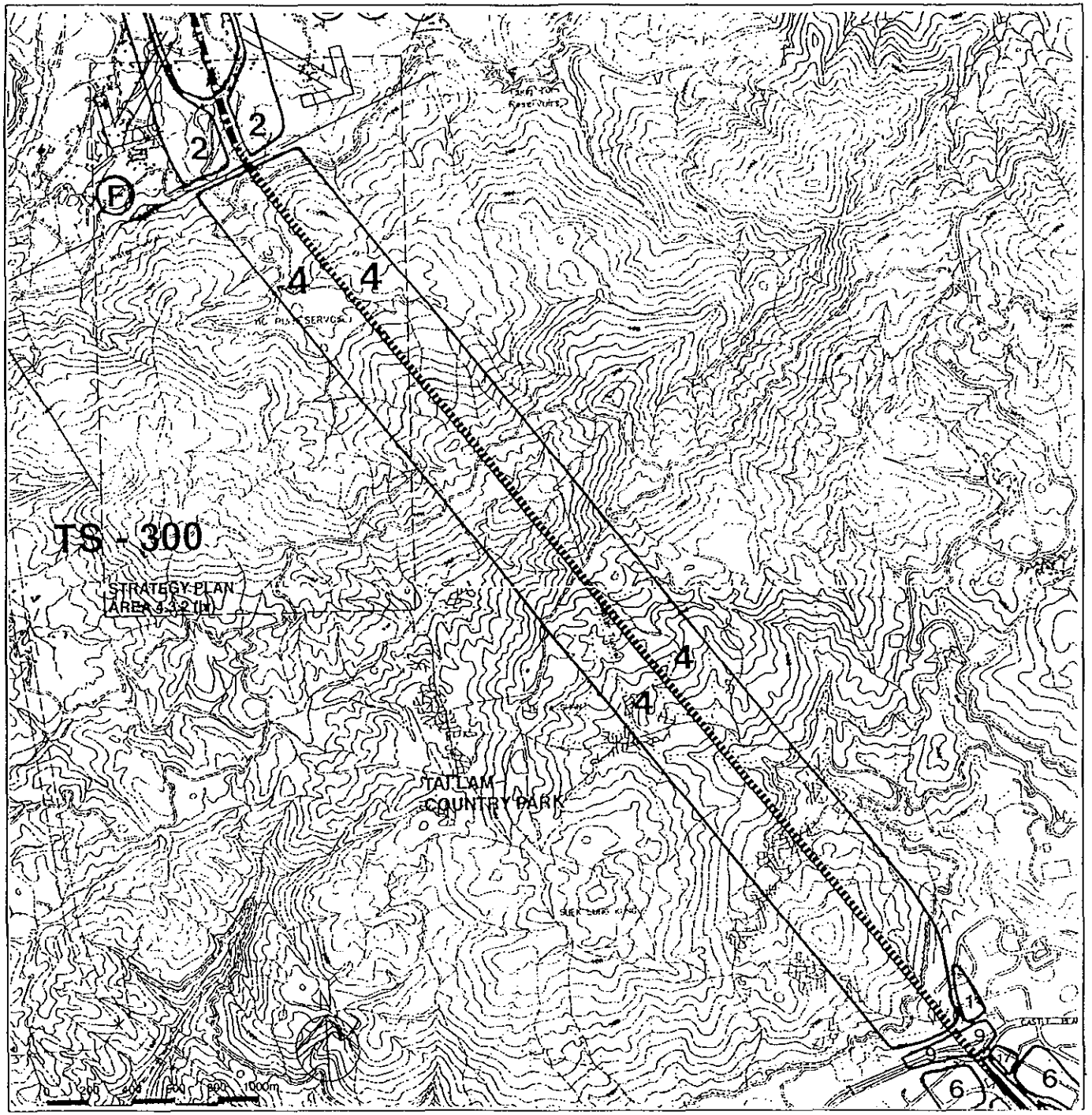
- At Grade
- Cut And Cover Tunnel
- Bored Tunnel
- Embankment
- Cutting
- Viaduct
- Station
- 20 — Yard / Depot

CULTURAL AND ENVIRONMENTAL SITES

A. Historical /Ancestral Building
B. Temple /Pagoda /Monastery
C. Fung Shui Site
D. Nullah
E. River /Marsh /Fish Pond
F. Egretry
G. Woodland

VIEWS

- Local View
- Distant View



EXISTING ADJACENT LANDUSE

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4. Rural Recreational Area /Public Open Space
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7. Rural Industrial Area
8. Urban Mixed Commercial/Residential Area
9. Transportation Corridor
10. Drainage Channel /River
11. Community Facility (School, Hospital, Bus Station)

PROPOSED ADJACENT LANDUSE

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17. Urban Development Area-Hotel Site
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20. Freight /Maintenance Yard
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- F. Egretry
- G. Woodland

VIEWS

- Local View
- Distant View

4.3.2 Landscape Strategy Proposals: (i) Mei Foo station to Kwai Fuk Road

Context

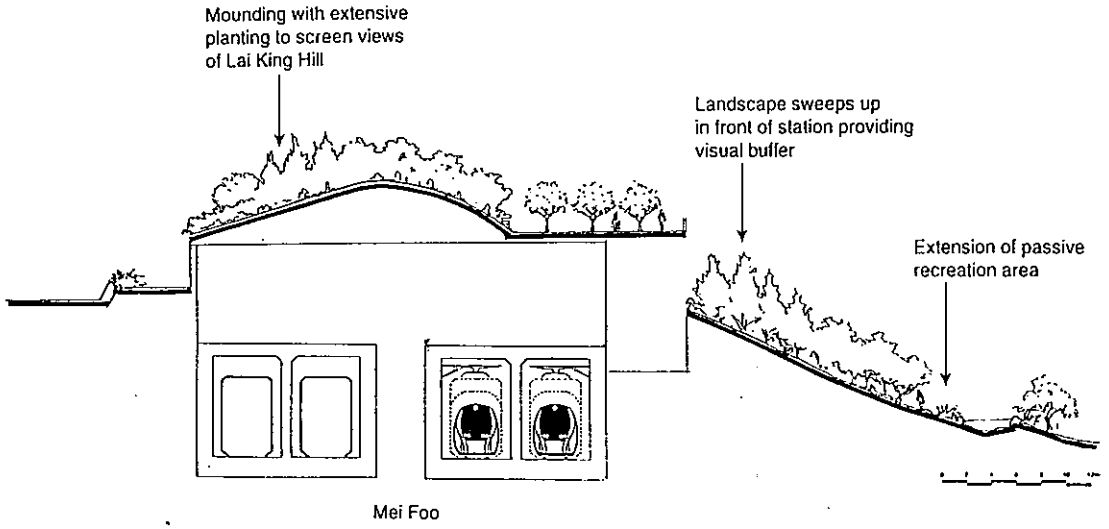
- West Rail will run north from the southern wall of Mei Foo station in at grade enclosed box tunnel through Lai Chi Kok Park (Stage 1) under Ching Cheung Road and Lai King Hill Road. From Lai King Hill Road it enters the Ha Kwai rock tunnel emerging under Kwai Fuk Road in cut and cover. The depth of cover over the tunnel is not known at this stage.
- The railway re-emerges from the bored tunnel at approx. 0.0 mPD and continues in cut and cover tunnel under Kwai Fuk Road. Ground level at Kwai Fuk Road is +7.0 mPD .
- There will be no passenger views within this stretch of West Rail.

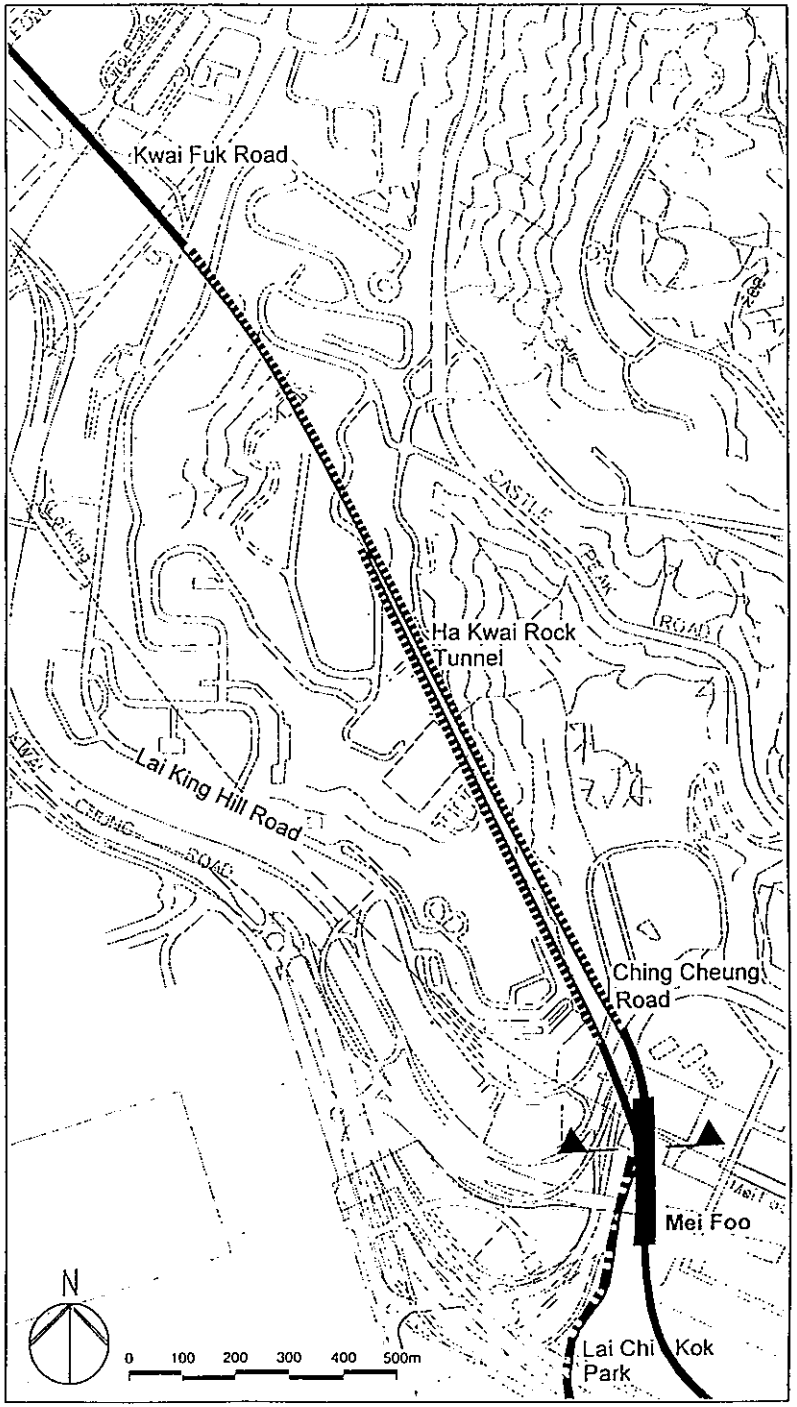
Issues

- **Railway corridor** : Future use of corridor.
- **Property interfaces** : Interface with future layout and use of Lai Chi Kok Park. Restoration treatment to existing property boundaries.
- **Visual impact** : Design and location of vents and tunnel portals. Treatment to the abutment walls of Ching Cheung Road.
- **Road embankments** : Treatment of embankments at Lai King Hill Road and Kwai Fuk Road.

Strategy

- **Railway corridor** : At Kwai Fuk Road the ground over cut and cover corridor should be returned to roadway. Planting within central reservation should be reinstated. Restoration of features to Lai Chi Kok Park to be according to the permanent planning requirements of USD, and should reflect the image of the KCRC while maintaining the landscape character of the park.
- **Property interfaces**: Current extent of engineering underpinning of Ching Cheung Road and Lai King Hill Road has not yet been determined. However restoration work provides an opportunity for on-street environmental improvements i.e. upgrading footpath surfaces, planting of street trees and provision of co-ordinated street furniture. Private fences and walls on Kwai Fuk Road that are disrupted as part of road underpinning to be restored to the previous condition.
- **Visual impact** : Number and location of vents in this section has not yet been determined. Portals will not be visible at ground level. Refer to system-wide proposals on vent structures for general appearance and location of vents. Abutment walls of Ching Cheung Road should be restored to the previous finish.
- **Road embankments** : Treatment to embankments of Lai King Hill Road and Kwai Fuk Road to allow for restoration of tree and shrub planting to match existing. Design to be agreed with Highways Dept.





4.3.2 Landscape Strategy Proposals: (ii) Kwai Fuk Road to Tsing Tsuen Road

Context

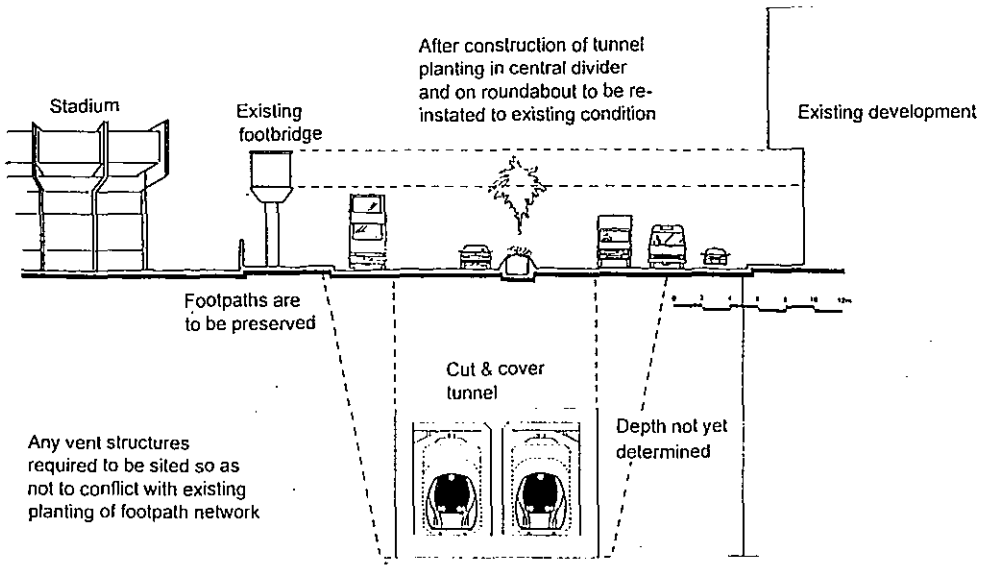
- West Rail will follow Kwai Fuk Road north-west in cut and cover until Shing Fuk Street where it enters bored tunnel until the j/o Tsing Tsuen Road and Texaco Road North. At this junction the railway emerges into cut and cover tunnel within Tsuen Wan.
- The depth of the tunnel within this section has not been determined at this stage.
- There will be no passenger views along this section of the West Rail.

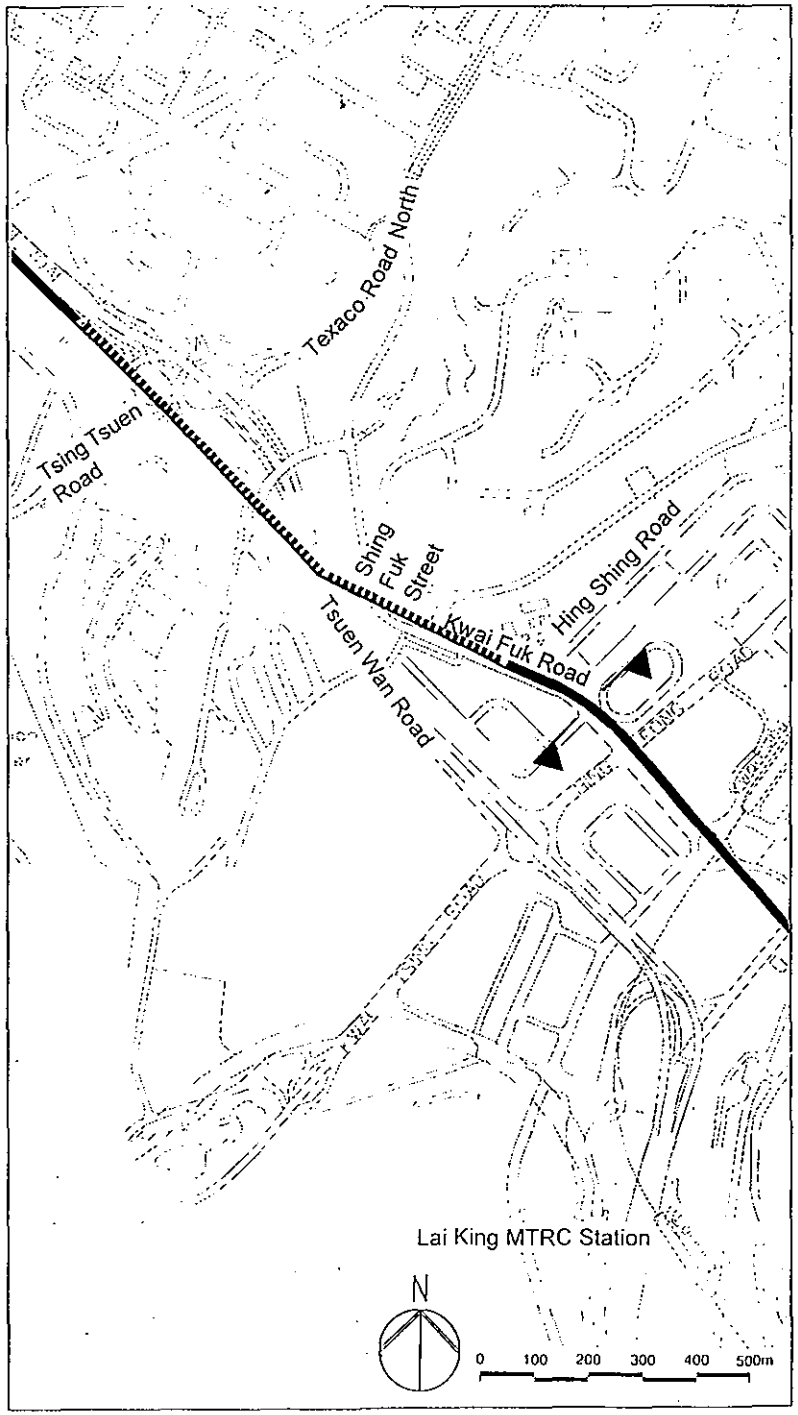
Issues

- **Railway corridor** : The extent of underpinning of Kwai Fuk Road for the cut and cover tunnel and the disruption to surface treatment of footpaths and roads has not been determined at this stage. Central reserve and associated planting of Kwai Fuk Road and Kwai Fuk Road roundabout will be disrupted.
- **Property interfaces** : Disruption to pedestrian circulation at Kwai Fuk Road roundabout as the subways will be closed for the construction of the tunnel. Kwai Fuk Road lorry park will be used as the works area for this section of the route.
- **Visual impact** : Design and location of vents and portals.

Strategy

- **Railway corridor** : Disruption to footpaths for underpinning of Kwai Fuk Road may create opportunities for street improvement works on the southern side by the industrial factories. On the northern side of the street restoration treatment should blend in with the existing open space areas. Restoration should also include replacement of the central reserve planting and the soft and hard treatment of the roundabout. Corridor through Kwai Fuk Road lorry park should be fenced and restored as a level grass area prior to redevelopment of the site
- **Property interfaces** : Under roads, property boundary will not be marked at ground level. Entire area of the lorry park should be fenced upon completion of restoration works associated with the rail corridor. Private fences and walls on Kwai Fuk Road disrupted as part of road underpinning to be restored to the previous condition. Refer to **Technical Appendix I** for design of standard fence.
- **Visual impact** : Number / location of vents in this section has not yet been determined. Portals will not be visible at ground level. Refer to system-wide guidelines on vent structures for general appearance and location of vents.





4.3.2 Landscape Strategy Proposals: (iii) Tsing Tsuen Road to Tsuen Wan Bay

Context

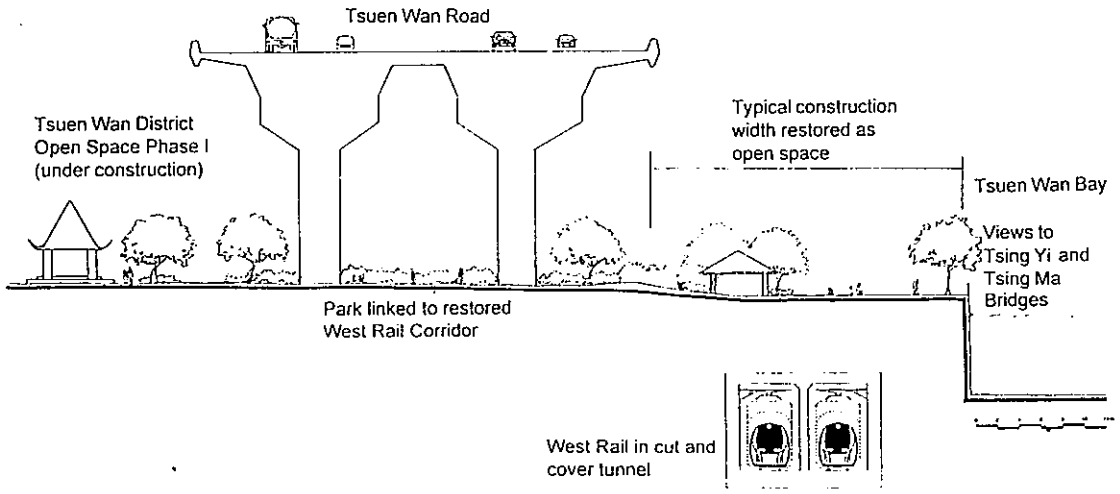
- From Tsing Tsuen Road to the northern end of Hoi Hing Road, West Rail will be in cut and cover. Top of the tunnel will be approx. -5.0 mPD. Thereafter the railway passes under Castle Peak road into bored tunnel. There will be no passenger views from this section
- In Tsuen Wan Bay area, West Rail will run underground parallel with Tsuen Wan Road. Proposed developments to regenerate this area include a new ferry terminal, extended waterfront promenade, a mixed commercial and residential complex and hotel.

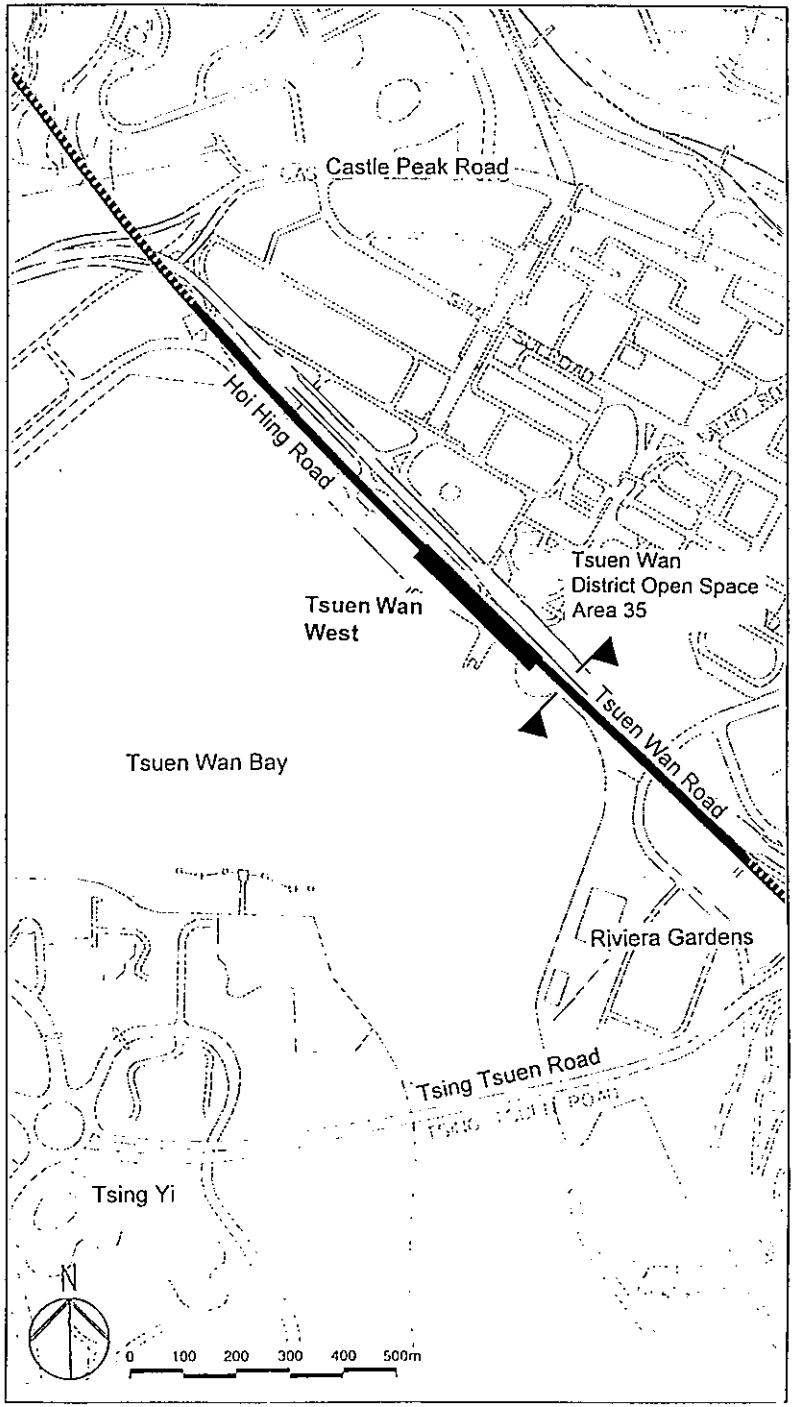
Issues

- **Railway corridor** : Future use of corridor at ground level. Preliminary discussion with RSD has taken place regarding extension of Tsuen Wan Open Space over the West Rail tunnel.
- **Property interfaces** : Underpinning of Hoi Hing Road may mean disruption of surface footpaths and roads. Central reserve planting will be removed for the construction of the tunnel.
- **Visual impact** : Design and location of vents and portals.
- **Road embankments** : Treatment to embankments of Castle Peak Road.

Strategy

- **Railway corridor** : Hoi Hing road will be returned to roadway over cut and cover tunnel and planting within central reservation should be reinstated. Tsuen Wan Open Space will be extended to link with existing promenade of Riviera Gardens. Choice of surface finishes, street furniture and planting materials should compliment phase 1 of the Tsuen Wan Open Space, and the existing promenade. Underpinning of Hoi Hing Road provides an opportunity for on-street environmental improvements including up-grading footpaths, of street tree planting and provision of co-ordinated street furniture. Improvements should relate to the proposed open space at the north end of the bay and commercial/residential areas.
- **Property interfaces** : At ground level along the extension to Tsuen Wan Open Space and the extended waterfront promenade north of the new ferry terminal, Property Interfaces to be marked by boundary stones and not fence, to ensure continuity of the space.
- **Visual impact**: Number / location of vents in this section has not yet been determined. Portals will not be visible at ground level. Refer to system-wide proposals on vent structures for general appearance and location of vents.
- **Road embankments** : Treatment of embankments to Castle Peak Road to include restoration of tree and shrub planting to match existing.





4.3.2 Landscape Strategy Proposals: (iv) North and South Portals in Tai Lam Country Park

Context

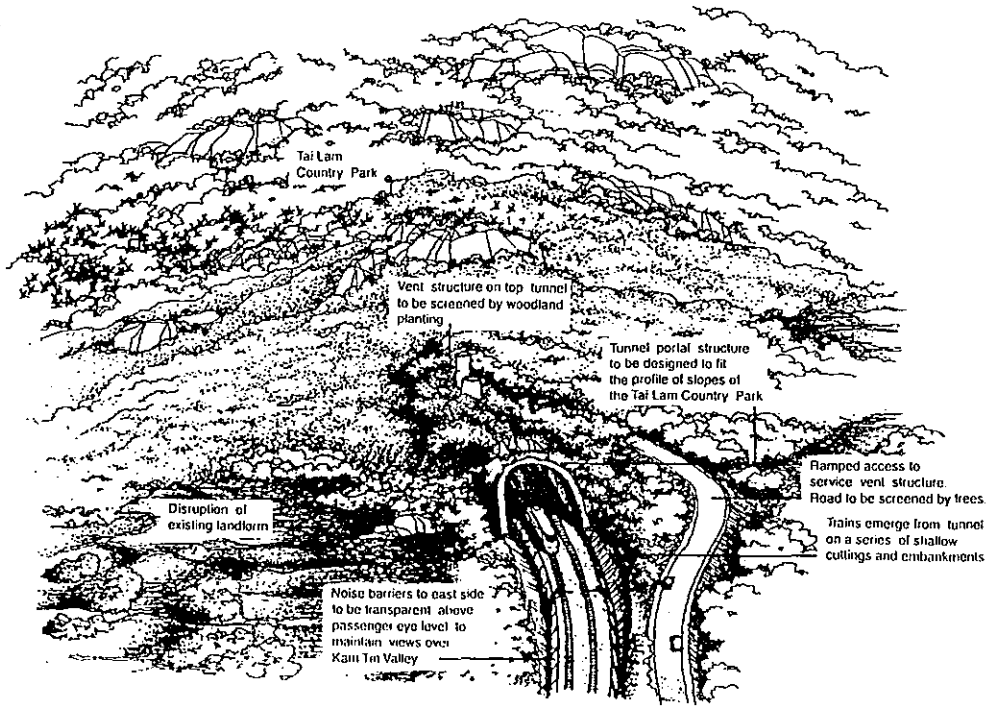
- The northern section of the TS-300 area comprises the northern section of Tsuen Wan Bay where West Rail enters a rock tunnel under Tai Lam Country Park and emerges within the Kam Tin Valley on a series of shallow cuttings and embankments.
- There will be passenger views within the Kam Tin Valley when the train emerges from the North Portal and passes from cutting onto embankment.

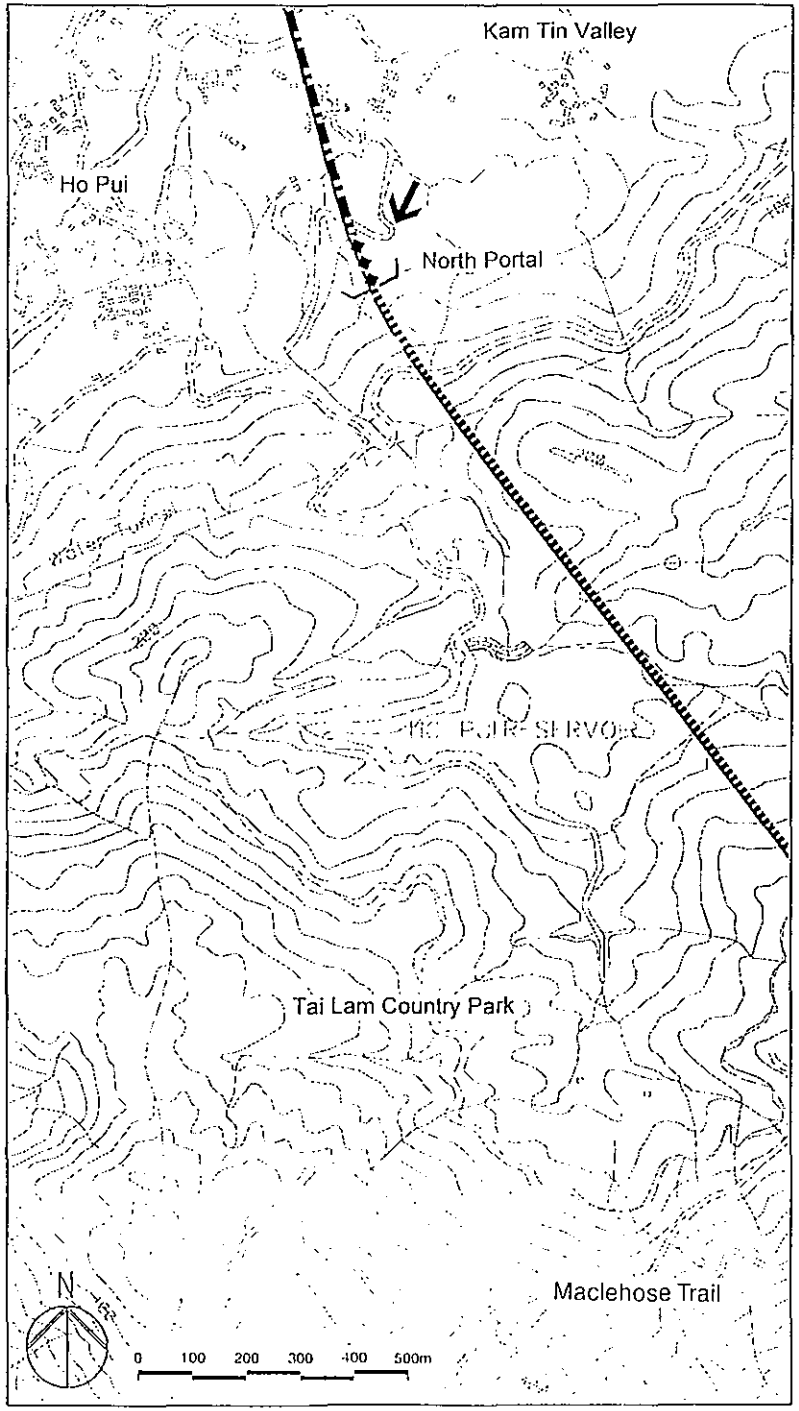
Issues

- **Visual impact** : Design and location of vents and portals. The South Portal will be under Castle Peak Road and will not be visible at ground level. The North Portal and its associated vent structure will be visible from the Kam Tin Valley seen against the backdrop of the Tai Lam Country Park.

Strategy

- **Visual impact** : Design and location of vents and portals to be in accordance with system-wide proposals. Portal materials and finishes to be designed in sympathy with the natural colours and textures of materials of the background of Tai Lam Country Park. The scale and location of vents and any associated buildings should be considered within the context of the character of the Country Park and there should be minimal disruption to existing vegetation. Screen planting to be provided for vents.





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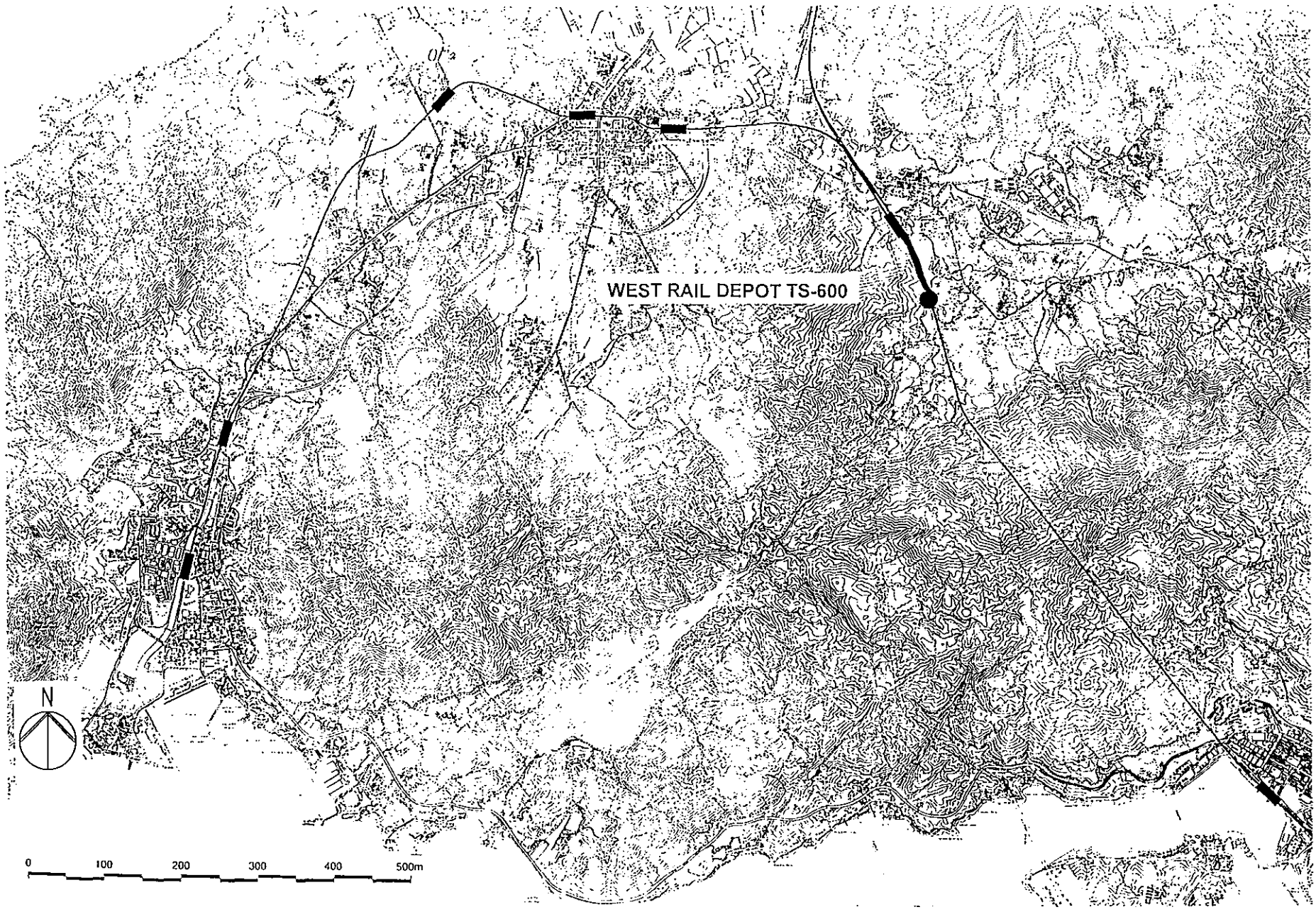
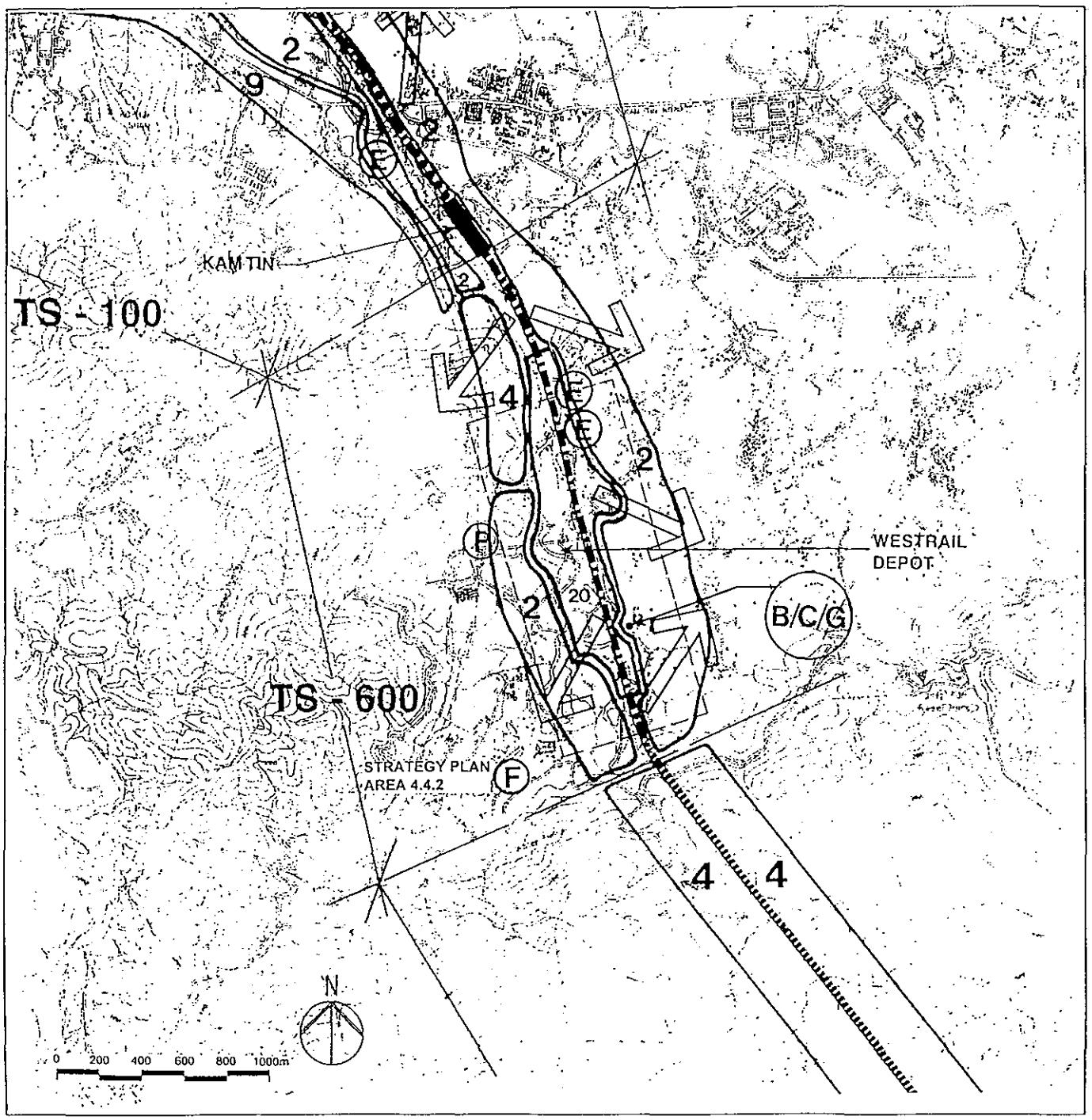


Fig. 4C West Rail Depot (TS600)



EXISTING ADJACENT LANDUSE

1. Urban Residential Area
2. Rural Residential /Farming Area
3. Urban Recreational Area /Public Open Space
4. Rural Recreational Area /Public Open Space
5. Urban Commercial Area
6. Urban Industrial Area
7. Rural Industrial Area
8. Urban Mixed Commercial/Residential Area
9. Transportation Corridor
10. Drainage Channel /River
11. Community Facility (School, Hospital, Bus Station)

ROUTE NATURE

- At Grade
- Cut And Cover Tunnel
- Bored Tunnel
- Embankment
- Cutting
- Viaduct
- Station
- 20 — Yard / Depot

PROPOSED ADJACENT LANDUSE

12. Urban Residential Area
13. Urban Recreational Area /Public Open Space
14. Urban Comprehensive Development Area
15. Urban Development Area
16. Urban Development Area-Container Related
17. Urban Development Area-Hotel Site
18. Urban Mixed Commercial /Residential Area
19. Transportation Corridor
20. Freight /Maintenance Yard
21. Committed Residential Development

CULTURAL AND ENVIRONMENTAL SITES

A. Historical /Ancestral Building
B. Temple /Pagoda /Monastery
C. Fung Shui Site
D. Nullah
E. River /Marsh /Fish Pond
F. Egretry
G. Woodland

VIEWS

- Local View
- Distant View

4.4.2 Landscape Strategy Proposals

Context

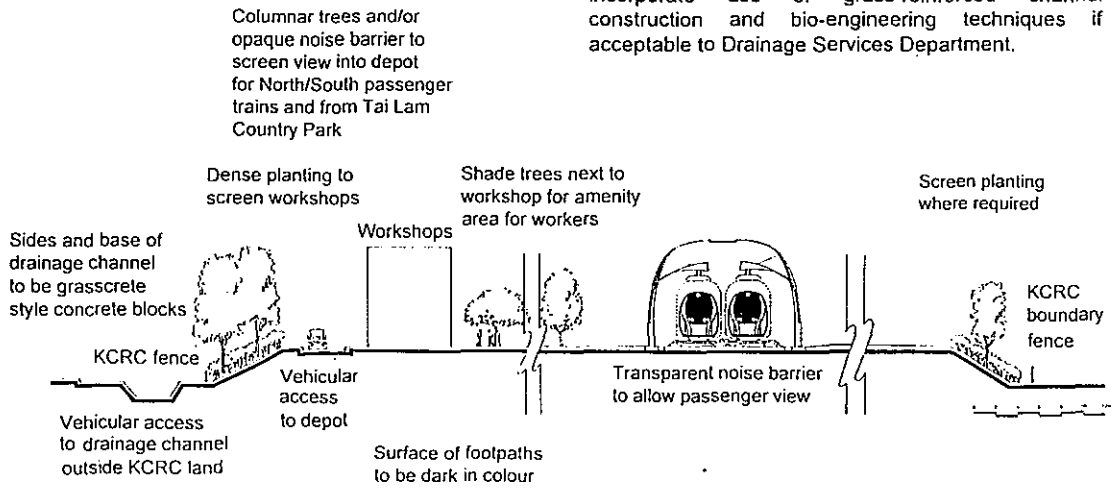
- The Depot is located at the top of the Kam Tin Valley, and will comprise maintenance and workshop buildings and tracks for north and south bound trains. At the southern end the Depot will be in a shallow cut and the rail level is expected to be just below the existing natural surface. At the northern end the Depot is on 3-4m of fill near the drainage channel.

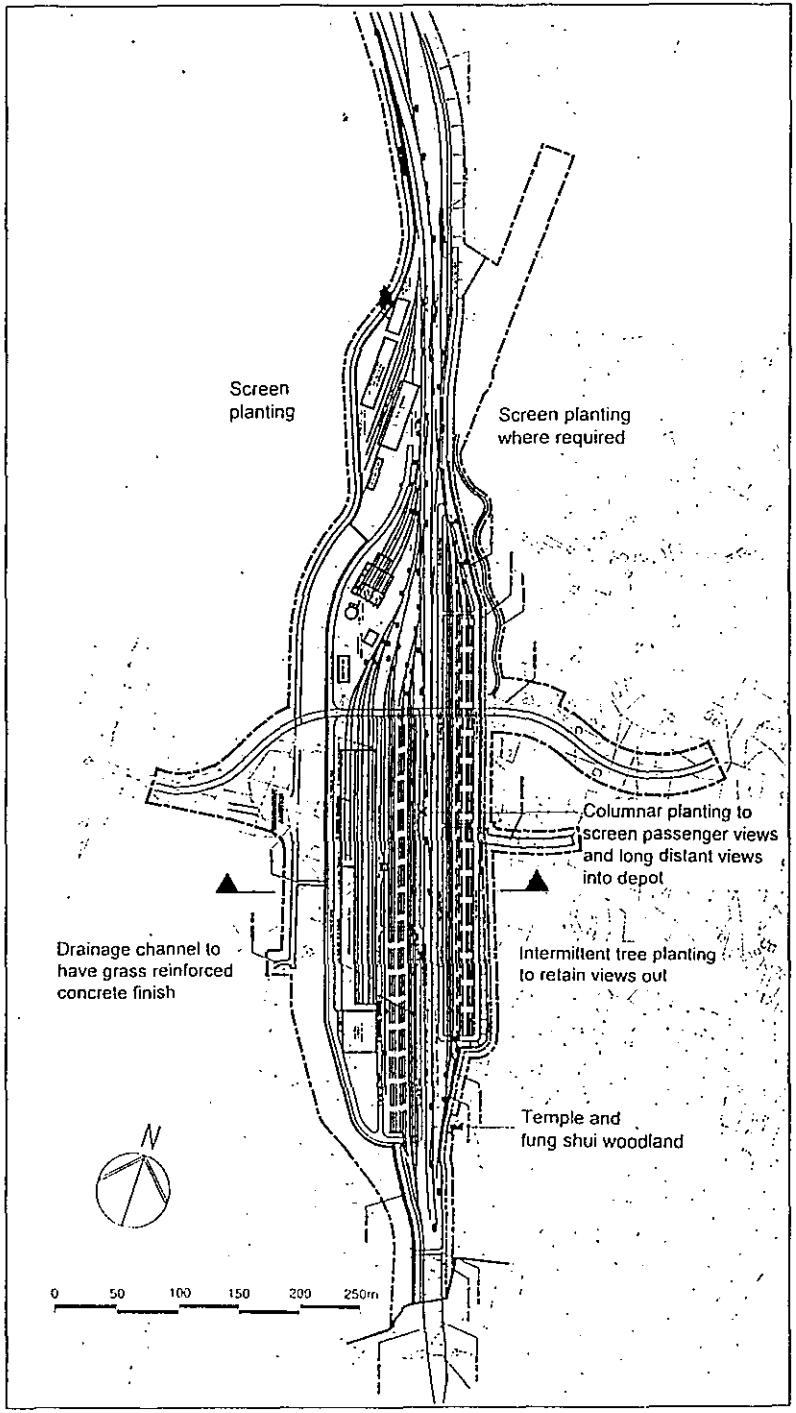
Issues

- **Property interface** : Disruption to adjacent farm land. There will be severance of roads, farm tracks and footpaths across the valley.
- **Visual impact** : Design and appearance of features. The Depot will be visible from adjacent villages, surrounding hillside and Tai Lam Country Park. Workshop buildings likely to be up to 15m high.
- **Lighting** : Location and direction of lighting in the Depot.
- **Noise** : Noise barriers are required, mainly on eastern side of Depot.
- **Sites of historic and cultural interest** : Proximity to Kwan Tai Shing Kung temple (AMO Ungraded) and fung shui grove.
- **Sites of ecological interest** : Proximity to Ho Pui egretry, Toll Plaza egretry, Kam Tin River, and Kam Tin Valley fishponds (AFD Grade B or C).
- **Surface water** : Disruption to existing surface water regime, including diversion or culverting of existing river and construction of a drainage channels.

Strategy

- **Property Interface** : Access to Depot to be restricted by a fence. Refer to system-wide proposals and **Technical Appendices** for design of fence and landscape treatment and location of boundary markers. Private fences to be restored to their previous condition. Severed accesses to be reprovisioned to the north and south ends of the Depot where they are to be located in underpasses beneath the tracks where they are narrowest.
- **Visual impact** : Dense planting on western embankment to screen Depot and columnar trees within maintenance yard, to screen views into depot from adjacent elevated land. Footpaths to be of a dark colour to reduce their visibility from a distance. Underpasses to be used for severed access instead of bridges so as to minimise visual impact.
- **Lighting** : Lighting columns to be as low as possible, with baffles to reduce overspill, located within the depot and not on perimeter and only in areas requiring night security. All lighting to be directed downward.
- **Noise** : Refer to system-wide proposals on shape of noise barriers. Transparent barriers to be used, wherever noise attenuation parameters permit, to maintain passenger views to the countryside.
- **Sites of historic and cultural interest** : Current plans show no disruption to historical temple or fung shui grove. Severed access footpaths from villages to these sites should be reprovisioned.
- **Sites of ecological interest** : Minimise disruption to sites of ecological interest particularly during construction period.
- **Surface water** : Appearance of drainage channel to incorporate use of grass-reinforced channel construction and bio-engineering techniques if acceptable to Drainage Services Department.





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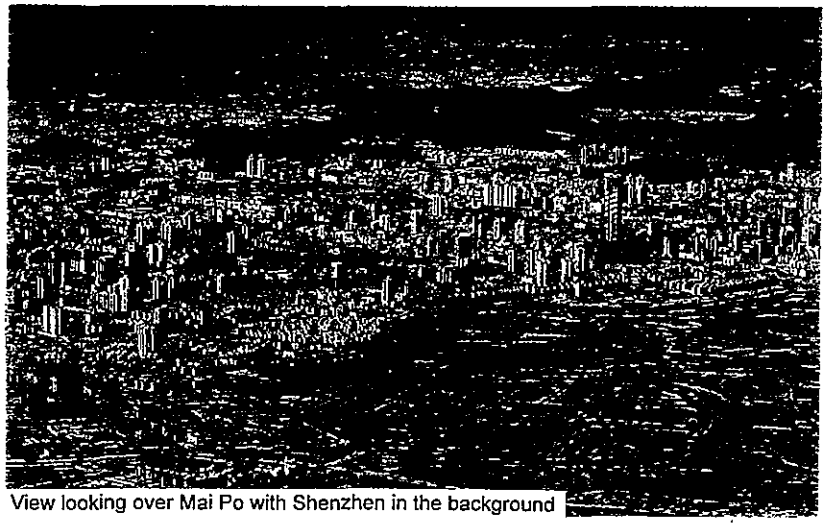
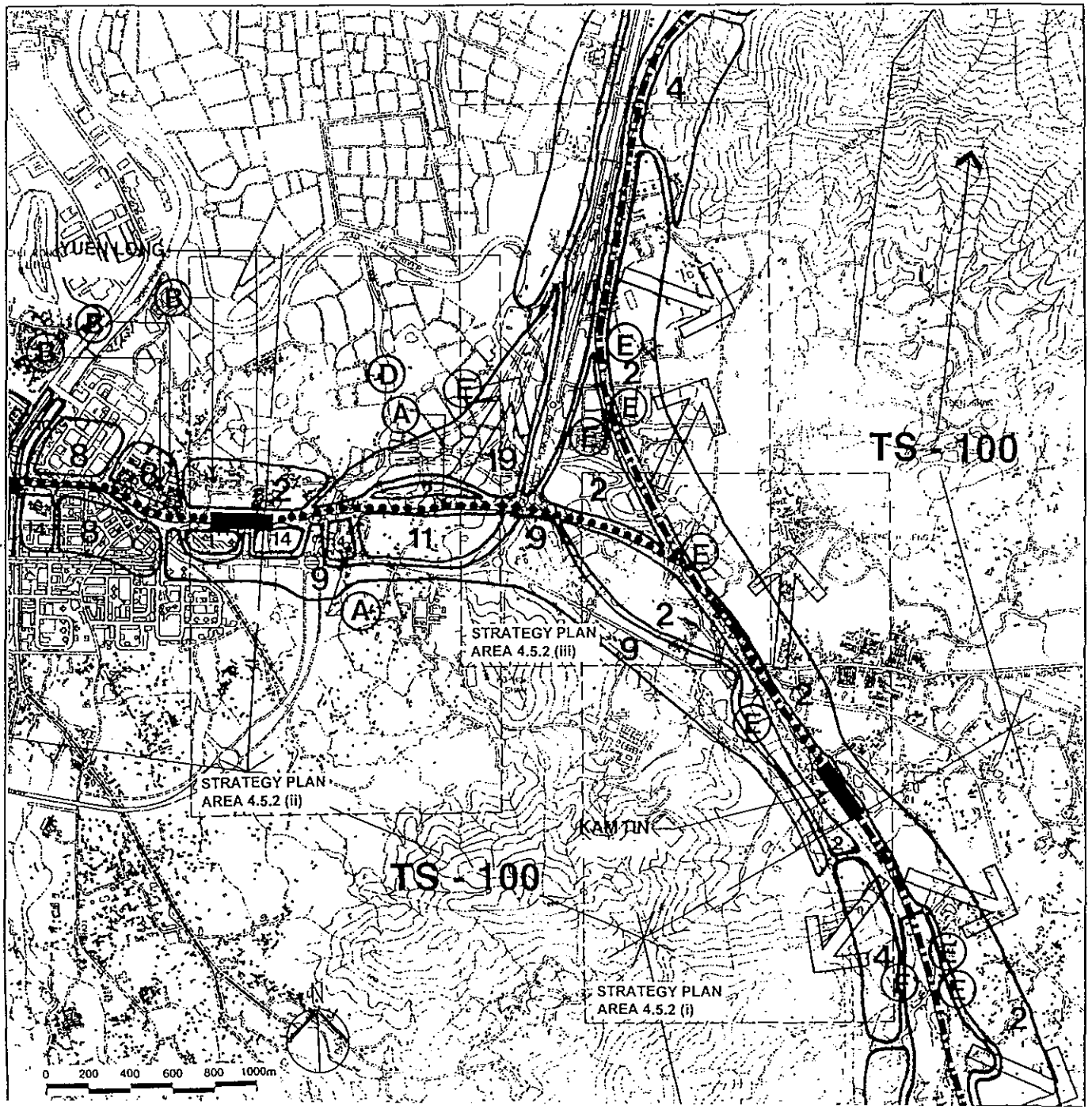


View looking over Mai Po with Shenzhen in the background

View of Mai Po

4.5.1 Landscape Analysis: (i) Kam Tin station to Pok Wai



EXISTING ADJACENT LANDUSE

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7. Rural Industrial Area
8. Urban Mixed Commercial/Residential Area
9. Transportation Corridor
10. Drainage Channel /River
11. Community Facility (School, Hospital, Bus Station)

PROPOSED ADJACENT LANDUSE

12. Urban Residential Area
13. Urban Recreational Area /Public Open Space
14. Urban Comprehensive Development Area
15. Urban Development Area
16. Urban Development Area-Container Related
17. Urban Development Area-Hotel Site
18. Urban Mixed Commercial /Residential Area
19. Transportation Corridor
20. Freight /Maintenance Yard
21. Committed Residential Development

ROUTE NATURE

- At Grade
- Cut And Cover Tunnel
- Bored Tunnel
- Embankment
- Cutting
- Viaduct
- Station
- 20 Yard / Depot

CULTURAL AND ENVIRONMENTAL SITES

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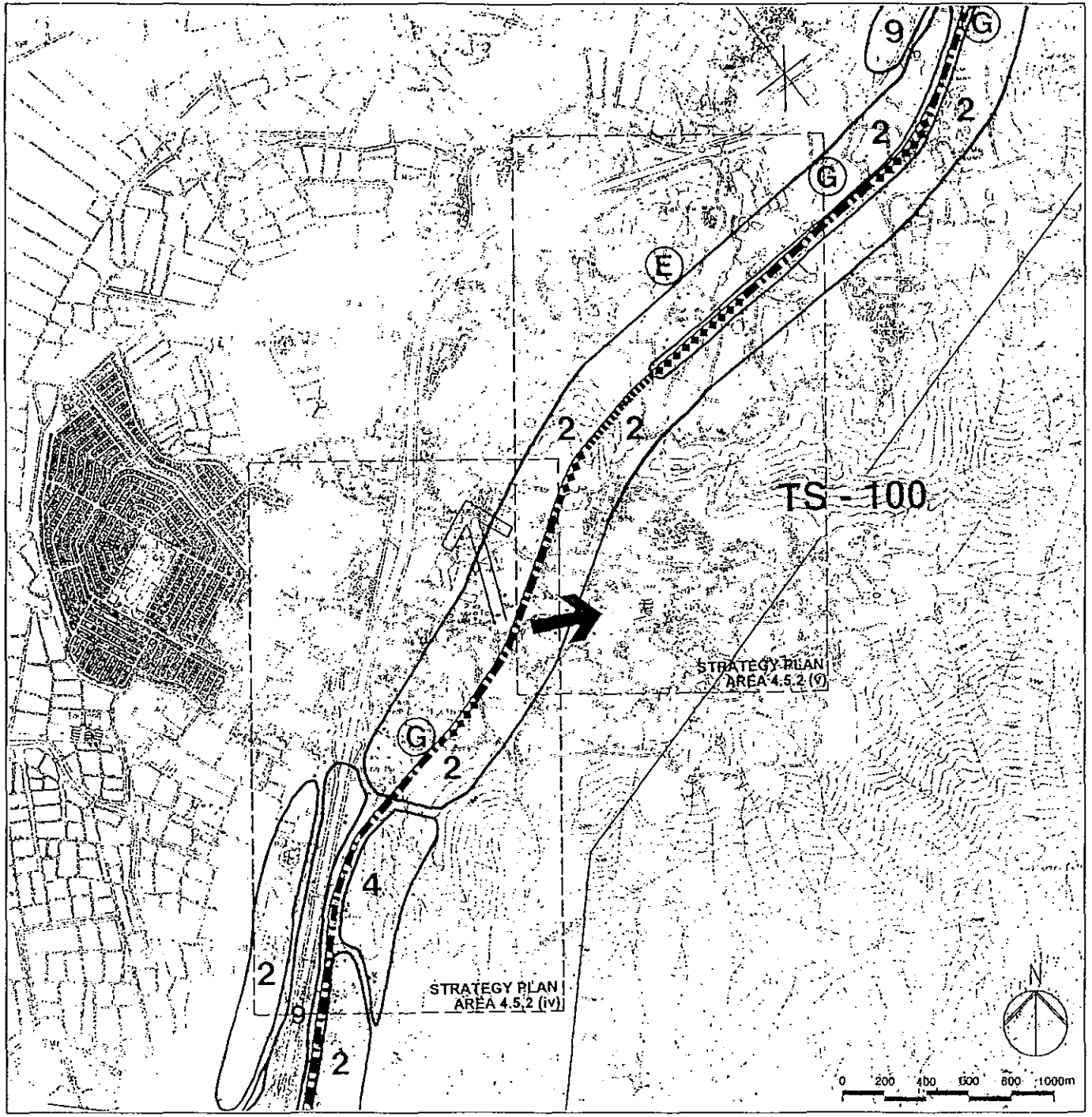
- B. Temple /Pagoda /Monastery
- C. Fung Shui Site
- D. Nullah
- E. River /Marsh /Fish Pond
- F. Egretry
- G. Woodland

VIEWS

- Local View
- Distant View



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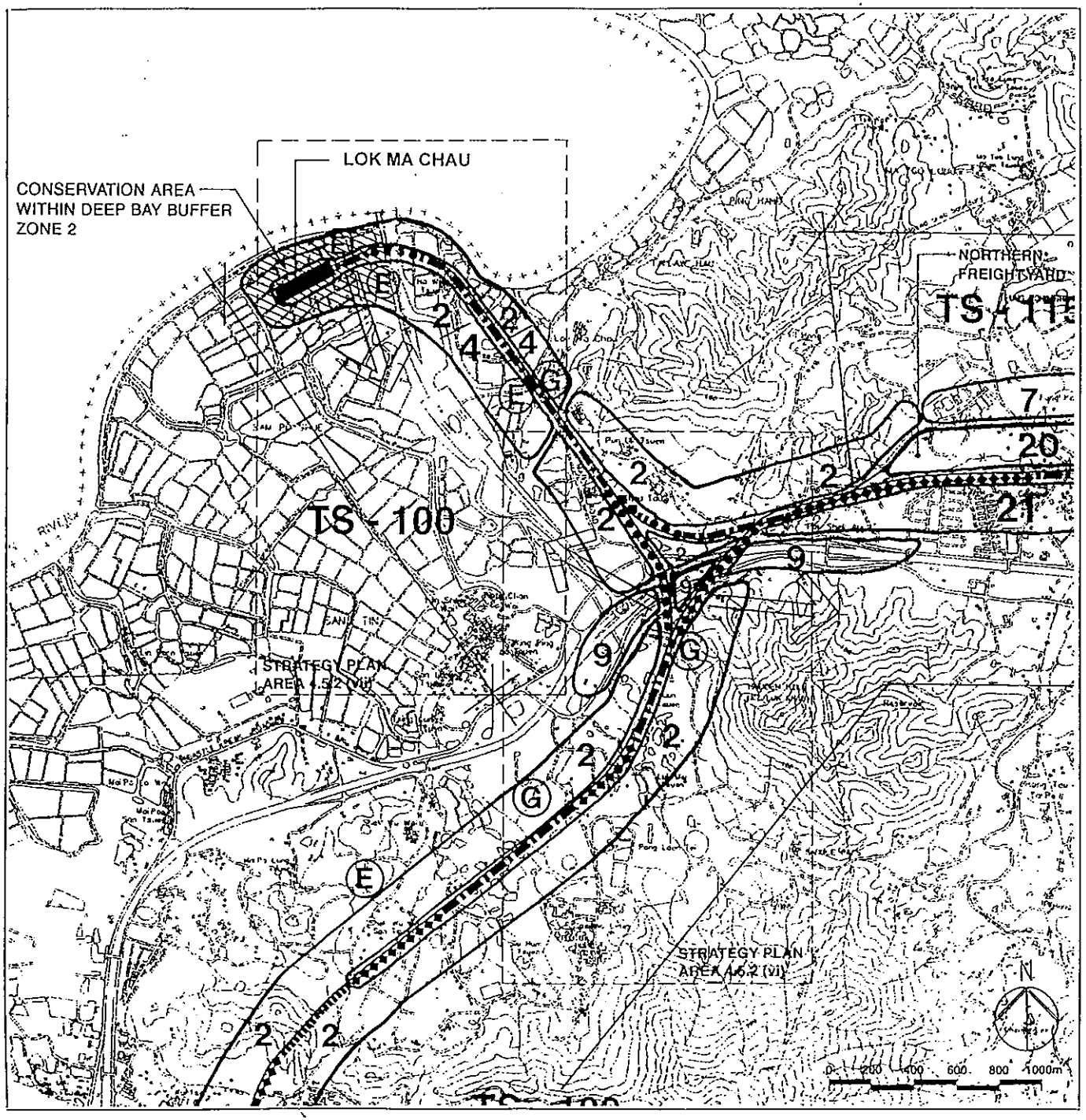
E. River /Marsh /Fish Pond
F. Egretry
G. Woodland

VIEWS

- Local View
- Distant View

4.5.1 Landscape Analysis: (iii) Shek Wu Wai to Lok Ma Chau station



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B. Temple /Pagoda /Monastery
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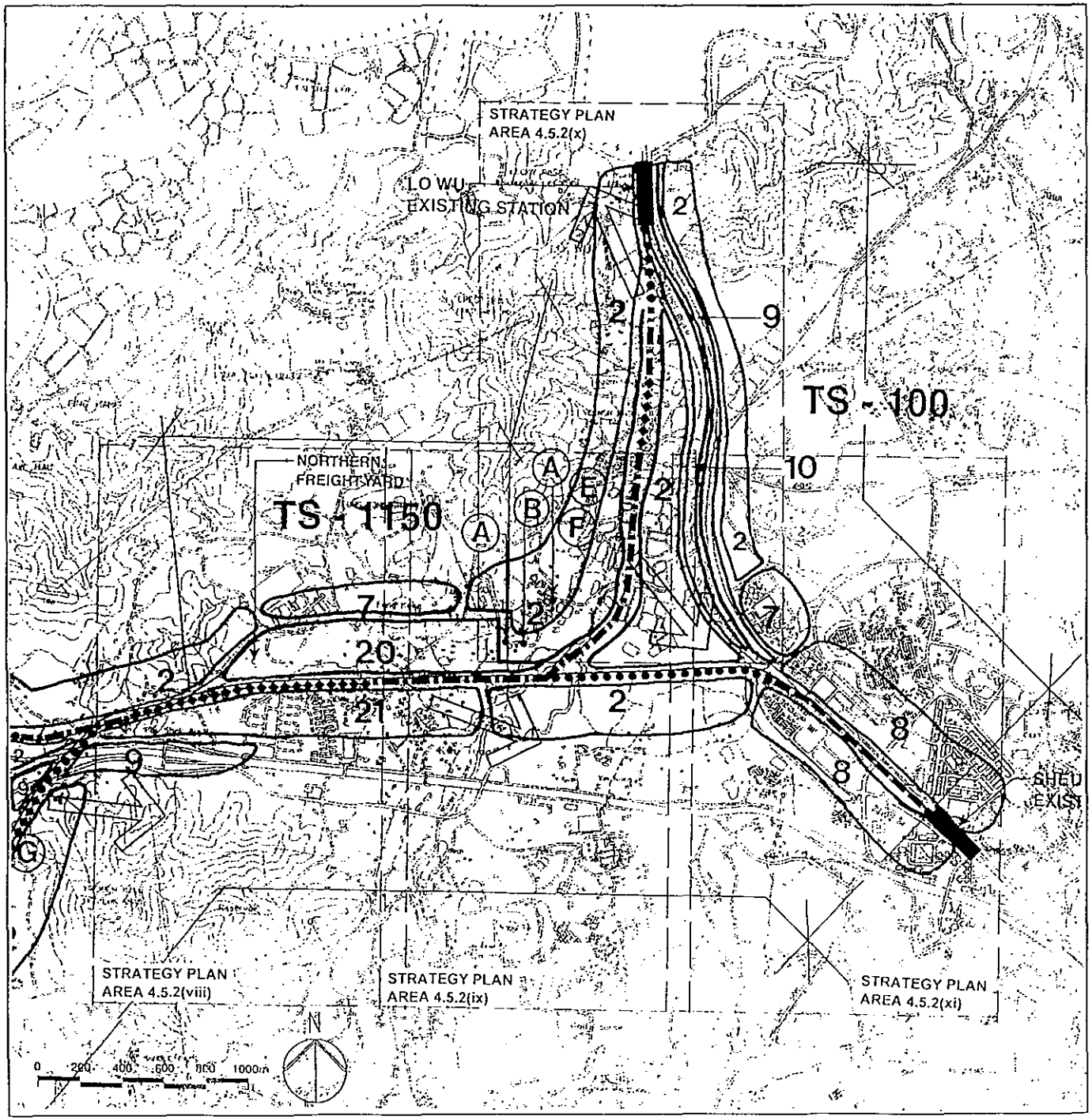
F. Egretry
G. Woodland

VIEWS

- Local View
- Distant View

4.5.1 Landscape Analysis: (iv) Chau Tau to Lo Wu station



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- E. River /Marsh /Fish Pond
- F. Egretry
- G. Woodland

VIEWS

- Local View
- Distant View

4.5.2 Landscape Strategy Proposals: (I) Kam Tin station to Au Tau Interchange

Context

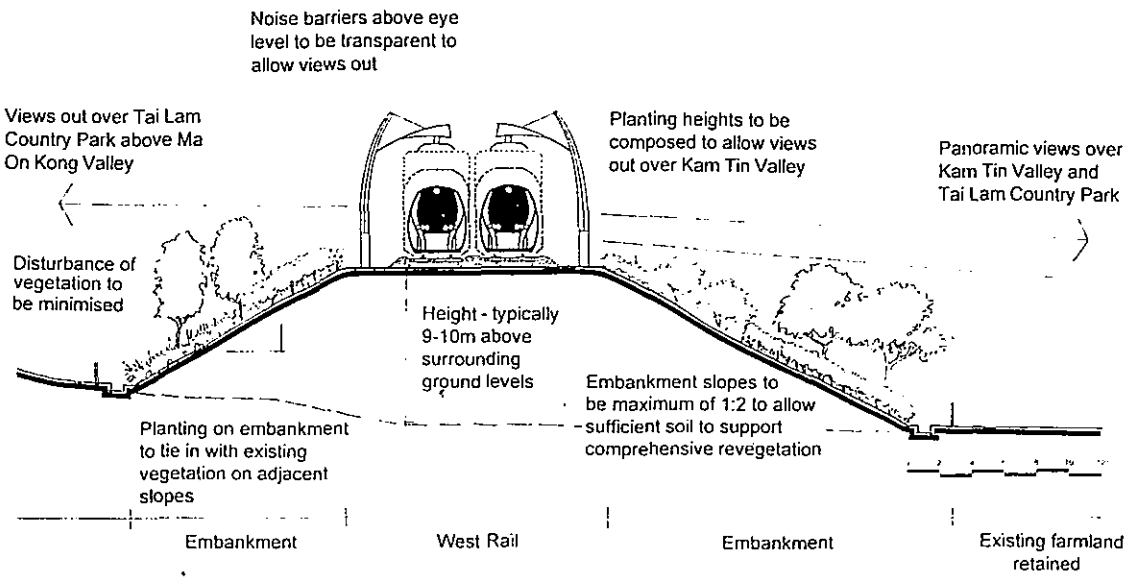
- West Rail will be on embankment from Kam Tin station to Au Tau Interchange, roughly parallel to the alignment of Route 3. It will be at a consistent height of +14 mPD except for sections of bridges crossing the river and roads along the route. Ground level either side is approx. +4 to +5 mPD. There will be panoramic views for passengers out over the Kam Tin valley.
- The land use along this stretch is predominantly farming, with scattered village settlements.
- Au Tau fish ponds are within this section and are classified as areas of ecological interest.

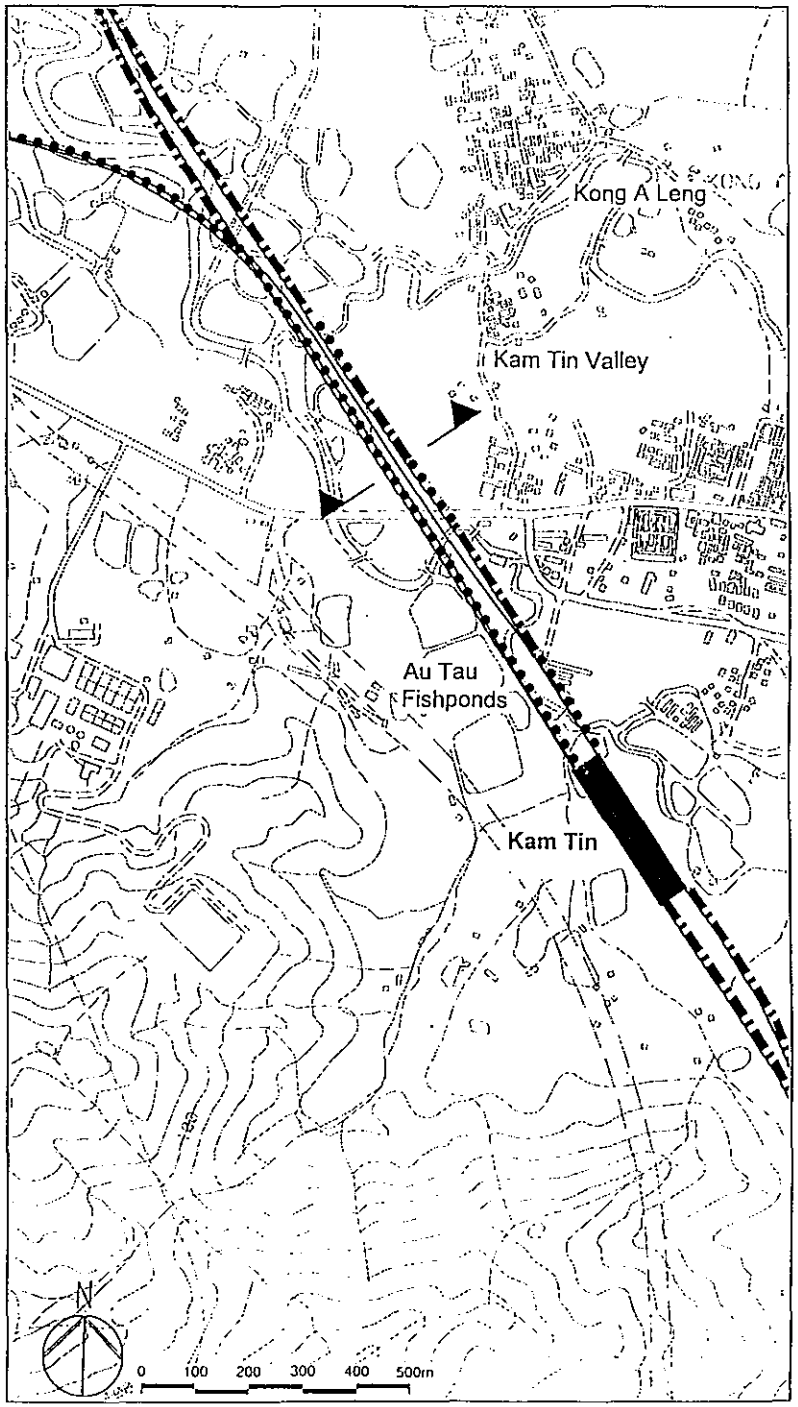
Issues

- **Railway corridor** : Treatment of embankment.
- **Visual impact** : Visual obstruction from embankment and railway. Appearance of bridges, noise barriers and other trackside features.
- **Property interfaces** : Pedestrian and vehicular access through embankment. Boundary marker.
- **Noise** : Noise barriers are likely to be required along this stretch.
- **Sites of ecological interest** : Proximity to wetlands. Maintaining access to sites.

Strategy

- **Railway corridor** : Embankments to be treated according to system-wide proposals and to ensure passenger views of the Kam Tin Valley are retained.
- **Visual impact** : The appearance of the bridges to be in accordance with system-wide proposals. Embankments to be planted with indigenous shrubs and trees to mitigate negative visual impact.
- **Property interfaces** : Pedestrian and vehicular access points through embankment at grade are preferred to bridges for convenience and to reduce potential visual intrusion. Embankments and cuttings to be fenced according to system-wide proposals. Refer to **Technical Appendix I** for design of fence.
- **Noise** : Noise barriers to be transparent wherever possible to allow passenger views. Refer to system-wide proposals.
- **Sites of ecological interest** : Disturbance of wetlands should be minimised by replacing sections of embankment with viaduct. Screen planting using species recommended from **Technical Appendix II** to be used to enclose ecological areas and retain the site character.





4.5.2 Landscape Strategy Proposals: (ii) Au Tau Interchange to Yuen Long station

Context

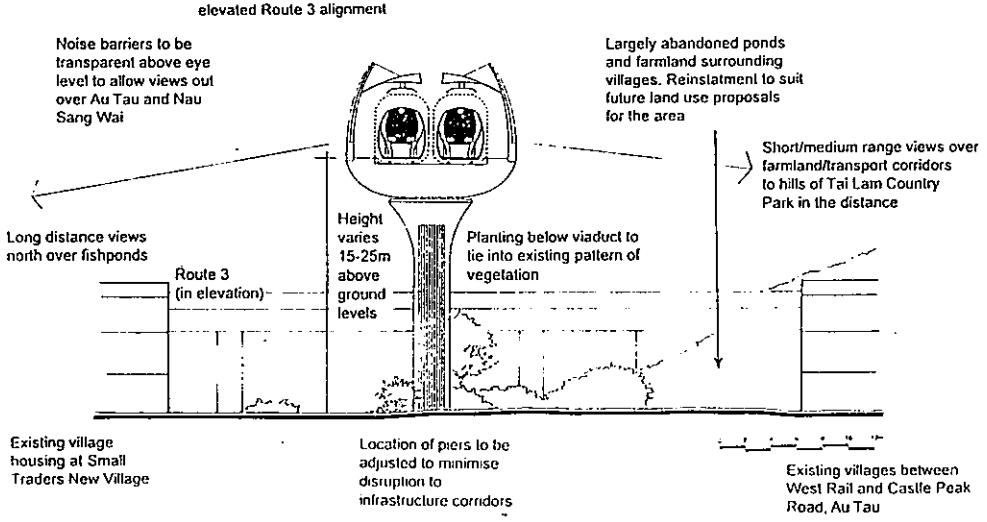
- From Au Tau Interchange to Yuen Long, West Rail will run in a westerly direction on viaduct at approx. 15 - 23m above existing ground level across rural residential and farming land either side of Route 3 and the Castle Peak Road.
- West Rail will be in 9m deep cutting for approx. 100m, as it traverses the hillside near Castle Peak Road.
- There are several ancestral buildings which are classified as sites of historical and cultural interest on the north and south sides of the railway : Poon Uk Hakka Mansion (AMO Grade 1) and Clan Houses (AMO Ungraded).

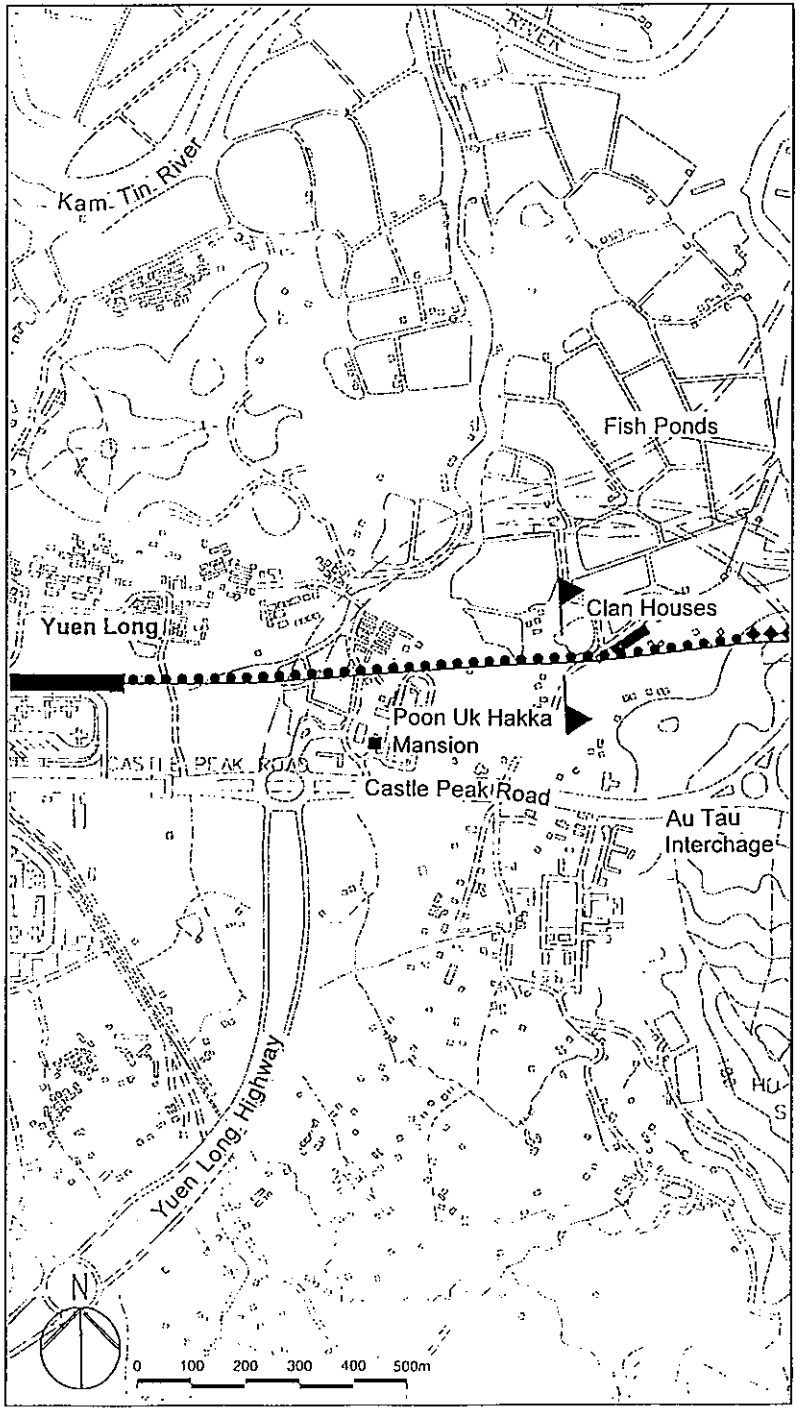
Issues

- **Railway corridor** : Treatment of land under viaduct, treatment of cutting slopes.
- **Visual impact** : Appearance of elevated structures, noise barriers and other trackside features.
- **Property interfaces** : Boundary marker.
- **Noise** : Noise barriers are recommended along this stretch.
- **Sites of historical and cultural interest** : Minimising disturbance and maintaining access to sites.
- **Overhead electricity lines** : Restrictions on planting near to possible CLP overhead electricity lines.

Strategy

- **Railway corridor** : Agricultural land to be reinstated for use under viaduct. Where no active land use has been identified soft landscape treatment to be incorporated underneath. Refer to system-wide proposals for soft landscape treatment of these areas, and cuttings.
- **Visual impact** : Refer to system-wide proposals for appearance of viaduct and associated elements, including noise barriers and access to piers for future maintenance. The appearance of the bridge over Route 3 roadway should remain unchanged from typical viaduct sections.
- **Property interfaces** : Property Interfaces to be marked under viaduct by boundary stones to allow for access to agricultural land either side of structure. Cuttings to be fenced according to system-wide proposals for trackside safety. Refer to **Technical Appendix** for fence design.
- **Noise** : Sections of noise barriers above eye level should preferably be transparent to allow passenger views.
- **Sites of historical and cultural interest** : Currently West Rail does not physically disrupt known sites of historic and cultural interest. Access from Castle Peak Road should be maintained under the viaduct.
- **Overhead electricity lines** : Current CLP plans indicate that proposed electricity lines will be culverted and overhead lines will not be required. However, if plans change and overhead lines are required, there will be restrictions on height of planting on cuttings adjacent to overhead power lines. Refer to plant species in **Technical Appendix II**.





Northern Section (TS100) DESIGN STRATEGY

LANDSCAPE DESIGN STRATEGY REPORT

4.5.2 Landscape Strategy Proposals: (iii) Au Tau Interchange to Pok Wai

Context

- From Au Tau Interchange to Pok Wai, West Rail will be on embankment at a level of +14 to +17 mPD except for sections of bridges crossing the river and roads along the route. Ground level either side is approx. +4-9 mPD.
- There will be passenger views to the adjoining road corridor and to Lam Tsuen Country Park to the east.
- Land use along this stretch is predominantly arable and duck/fish farming with scattered village settlements and a transportation corridor.
- Fish ponds in this area are of ecological interest and there is an associated AFD research station.

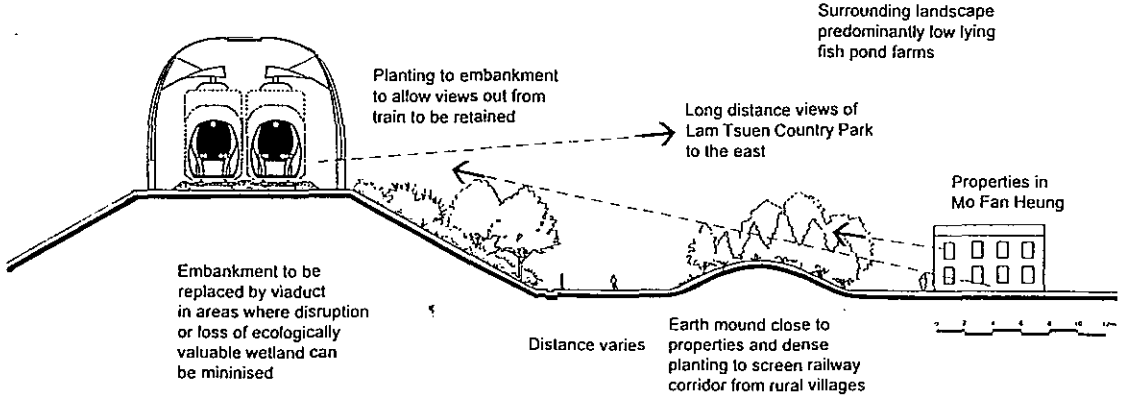
Issues

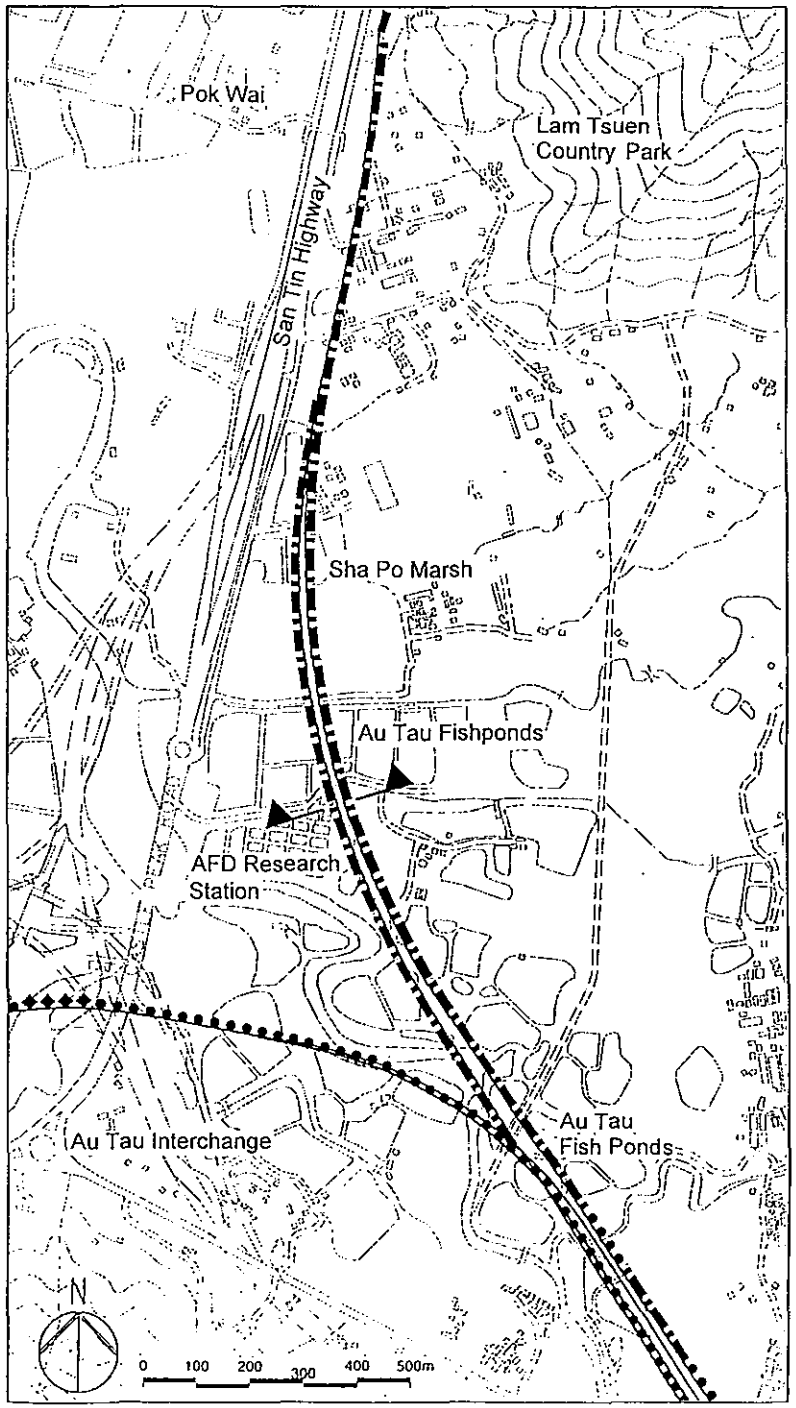
- **Railway corridor** : Treatment of embankment, pedestrian and vehicular access through embankment.
- **Visual impact** : Visual obstruction caused by embankment and railway. Appearance of bridges, noise barriers and other trackside features.
- **Property interfaces** : Severance of access across corridor. Boundary marker.
- **Noise** : Noise barriers are likely to be required along this stretch.
- **Sites of ecological interest** : Proximity to wetlands. Maintaining access to sites.

Strategy

- **Railway corridor** : Embankments to be treated according to system-wide proposals, to ensure views of Lam Tsuen Country Park to the east are retained.
- **Visual impact** : Appearance of bridges to be in accordance with system-wide proposals. Embankments to be planted with indigenous shrubs and trees to mitigate negative visual impact. Additional screen planting should be provided on low earth mounds adjacent to properties where the railway creates visual intrusion e.g. Mo Fan Heung and Pok Wai. Pedestrian and vehicular access points through embankment at grade to reduce visual intrusion.
- **Property interfaces** : Pedestrian and vehicular access points to be provided through embankment. Embankments and cuttings to be fenced according to system wide proposals. Refer to **Technical Appendix I** for fence design.
- **Noise** : Noise barriers above eye level preferably to be transparent to allow passenger views. Refer to system-wide proposals.

  Sites of ecological interest : Disturbance of wetlands should be minimised by replacing sections of embankment with viaduct. Screen planting using species recommended from **Technical Appendix II** to enclose ecological areas and retain site character.





4.5.2 Landscape Strategy Proposals: (iv) Pok Wai to Tam Mi Camp

Context

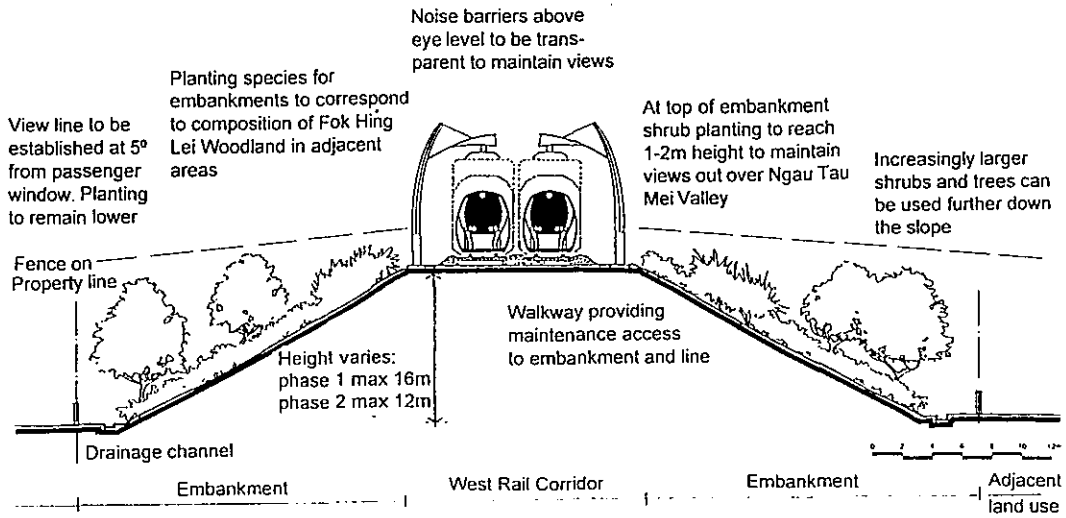
- From Pok Wai village, West Rail will rise on embankment through rural countryside to Tam Mi Camp at heights varying between +14 and 21 mPD. There is one section of cutting adjacent to Fok Hing Lei Woodland which is an area of ecological interest. Ground level either side is approx. +10 to 14 mPD.
- Other than the area of cutting there will be views to Lam Tsuen Country Park to the east.
- The land use along this stretch is a mix of rural residential and farming, the transportation corridor and the lower slopes of the Lam Tsuen Country Park.

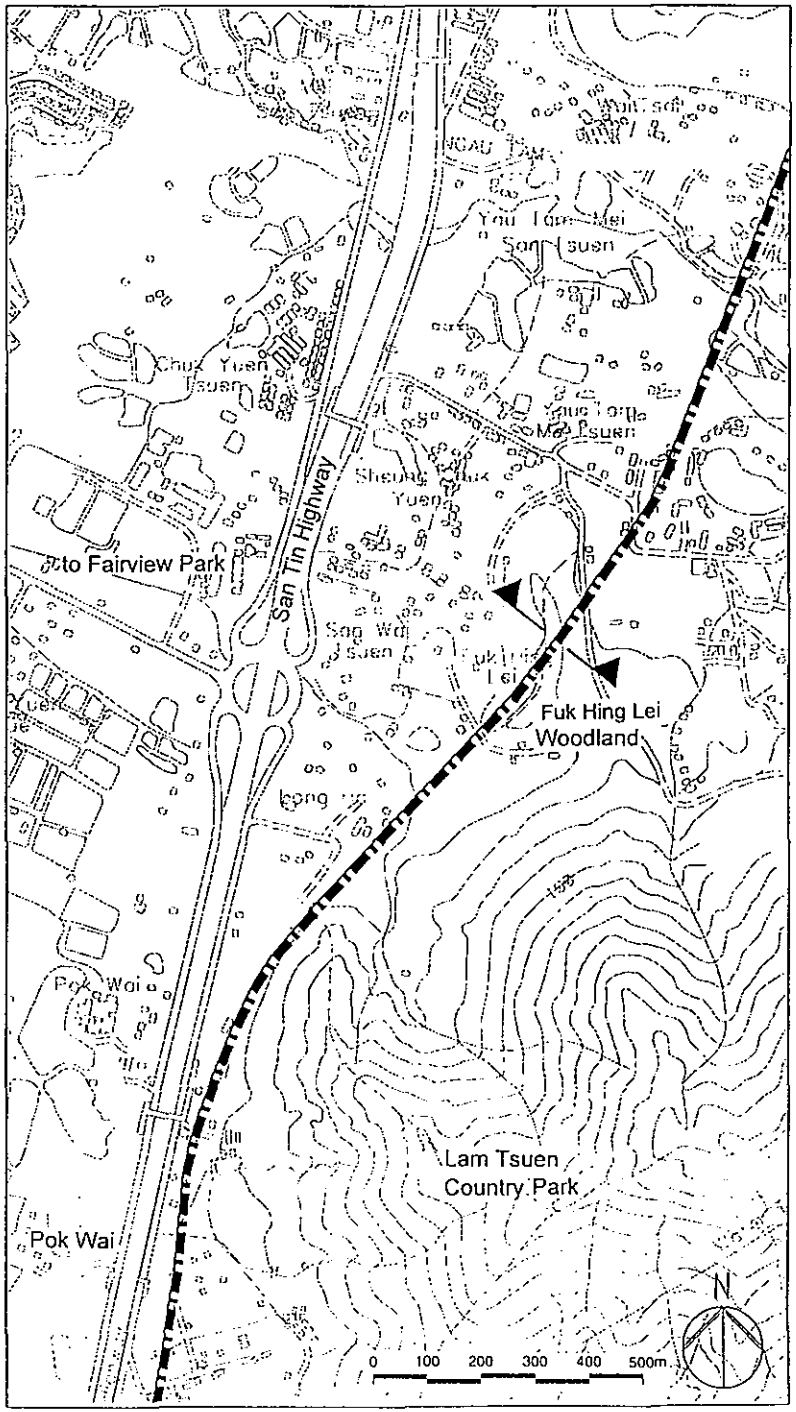
Issues

- **Railway corridor** : Treatment of embankments and cuttings.
- **Visual impact** : Visual intrusion of embankment. Appearance of bridges, noise barriers and other trackside features.
- **Property interfaces** : Pedestrian and vehicular access through embankment. Boundary markers.
- **Noise** : Noise barriers are likely to be required along this stretch.
- **Sites of ecological interest** : Proximity to wetlands, maintaining access to sites.

Strategy

- **Railway corridor** : Embankments to be treated according to system-wide proposals and to ensure passenger views of the Kam Tin Valley are retained.
- **Visual impact** : Embankments to be planted with indigenous shrubs and trees to mitigate negative visual impact. Extent of cutting to be minimised to reduce felling in Fok Hing Lei Woodland. Refer to **Technical Appendix II** for species to be replanted. Pedestrian and vehicular access points through embankment at grade are preferred to bridges to reduce visual intrusion. The appearance of the bridges to be in accordance with system-wide proposals.
- **Property interfaces** : Pedestrian and vehicular access points to be provided through embankment. Embankments and cuttings to be fenced according to system wide proposals. Refer to **Technical Appendix I** for fence design.
- **Noise** : Noise barriers above eye-level preferably to be transparent to allow passenger views.
- **Sites of ecological interest** : Minimise disturbance to sites of ecological interest.





4.5.2 Landscape Strategy Proposals: (v) Tam Mi Camp to Shek Wu Wai

Context

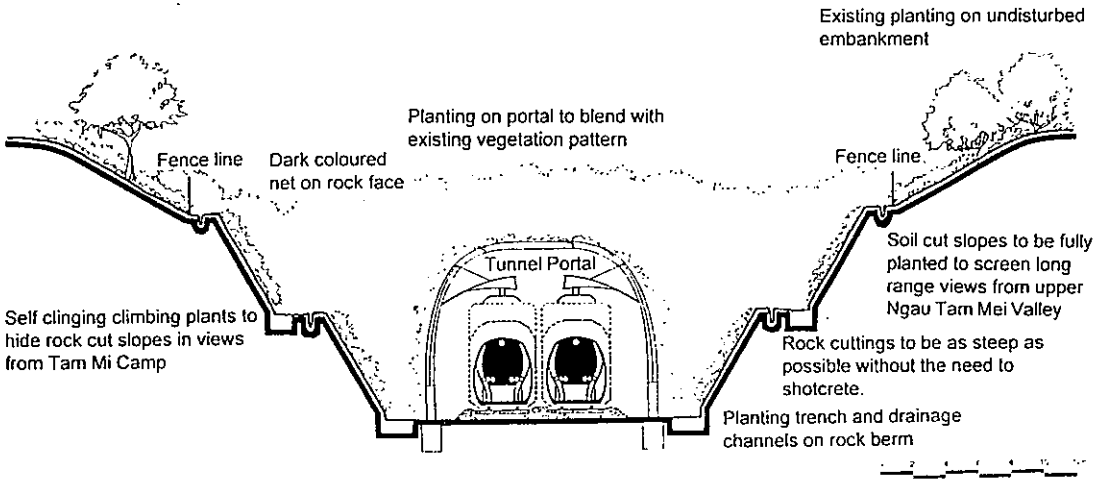
- Heading north from Tam Mi Camp, West Rail will be on embankment, cutting, bored tunnel, cutting then returning to embankment approaching Shek Wu Wai.
- There will be passenger views along the stretches of embankment, but there are no scenic views or landmarks.
- The alignment passes through a rural area of residential, farming /fish ponds and open storage.
- Shek Wu Wai fish pond (AFD Grade B) and woodland sites of ecological interest are within this area.

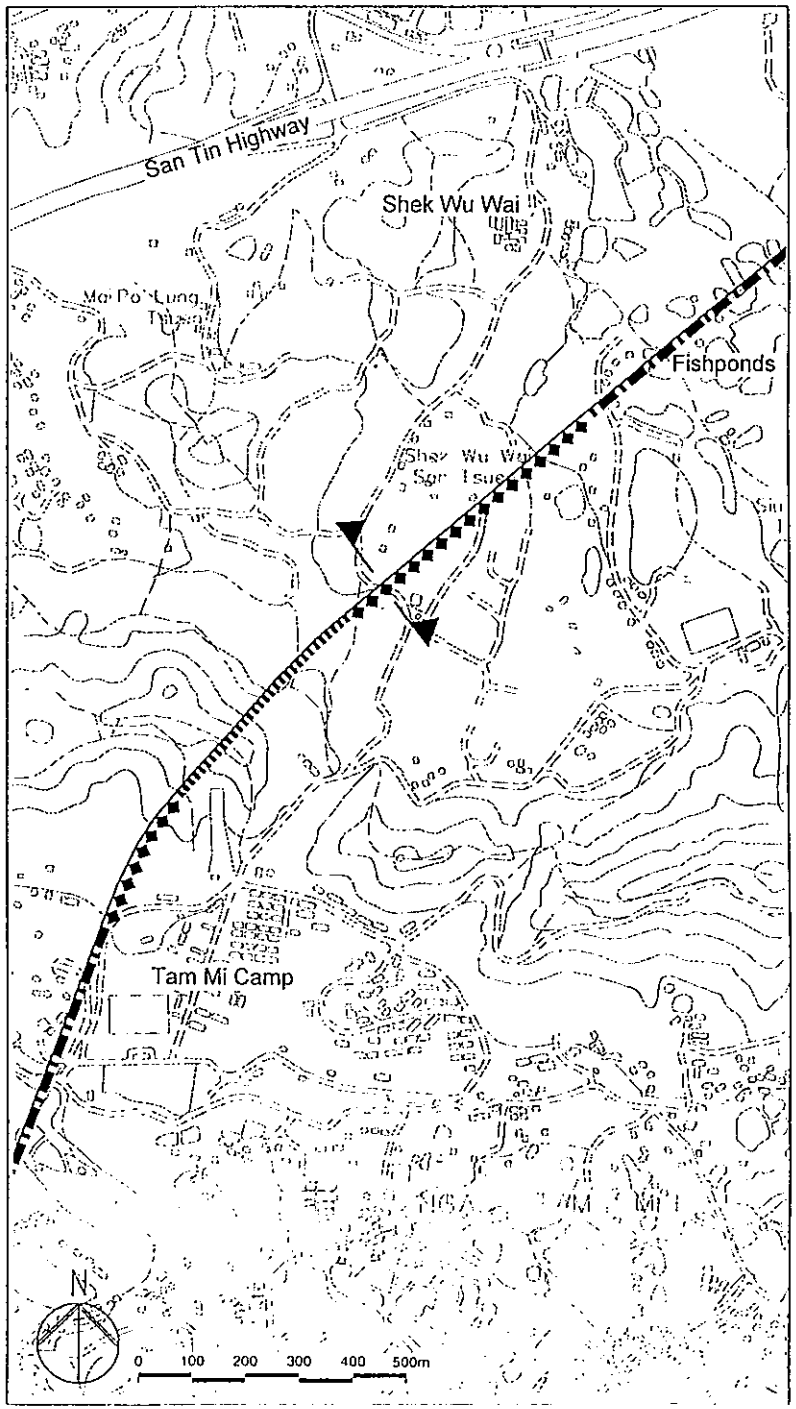
Issues

- **Railway corridor** : Treatment to embankments, cutting and at tunnel portals.
- **Visual impact** : Visual intrusion of embankments. Appearance of bridges, noise barriers and other trackside features.
- **Property interfaces** : Severance of roads. Disruption to adjacent property boundary.
- **Noise** : Noise barriers are likely to be required along this stretch.
- **Sites of ecological interest** : Shek Wu Wai fish ponds and woodland.

Strategy

- **Railway corridor** : Embankments over 10m high to be considered for replacement by viaduct to minimise disruption. Cutting and embankment slopes to be planted where possible according to system-wide proposals.
- **Visual impact** : Embankments to be planted with indigenous shrubs and trees to mitigate negative visual impact. Planting to maintain passenger views from the train. Refer to **Technical Appendix** and system-wide proposals for treatment. Portals should be screened from view by adjacent sections of cutting. The appearance of portals and any vents should be as specified in system-wide proposals.
- **Property interface** : Fencing required at the boundary lines of embankment and cutting. KCRC boundary under viaduct to be marked by boundary stones, where farming or container storage land uses are proposed. Access through embankments via underpass rather than bridge. Routes to be directed around cuttings. Private boundary disrupted by construction to be reinstated to previous condition.
- **Noise** : Noise barriers above passenger eye-level should preferably be transparent to maintain views.
- **Sites of ecological interest** : Disturbance of Shek Wu Wai woodland and fish ponds should be minimised by replacing sections of embankment with viaduct where possible.





4.5.2 Landscape Strategy Proposals: (vi) Shek Wu Wai to Chau Tau

Context

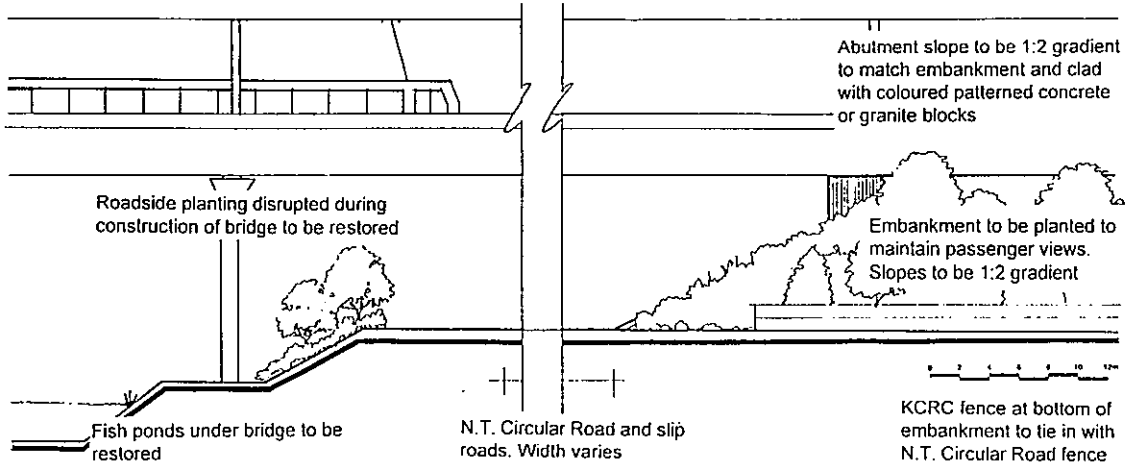
- From Shek Wu Wai to Chau Tau, West Rail will rise gradually from +14.0 to +19.0 mPD as existing ground levels vary between +6.0 to +29.0 mPD. West Rail will be alternately in cutting and on embankment, and then on viaduct over Route 3 and the North Circular Road.
- The land use is a mix of residential, farming, fish ponds and open storage within a rural setting.
- San Tin Interchange woodland which is of ecological interest is located to the south of the alignment.

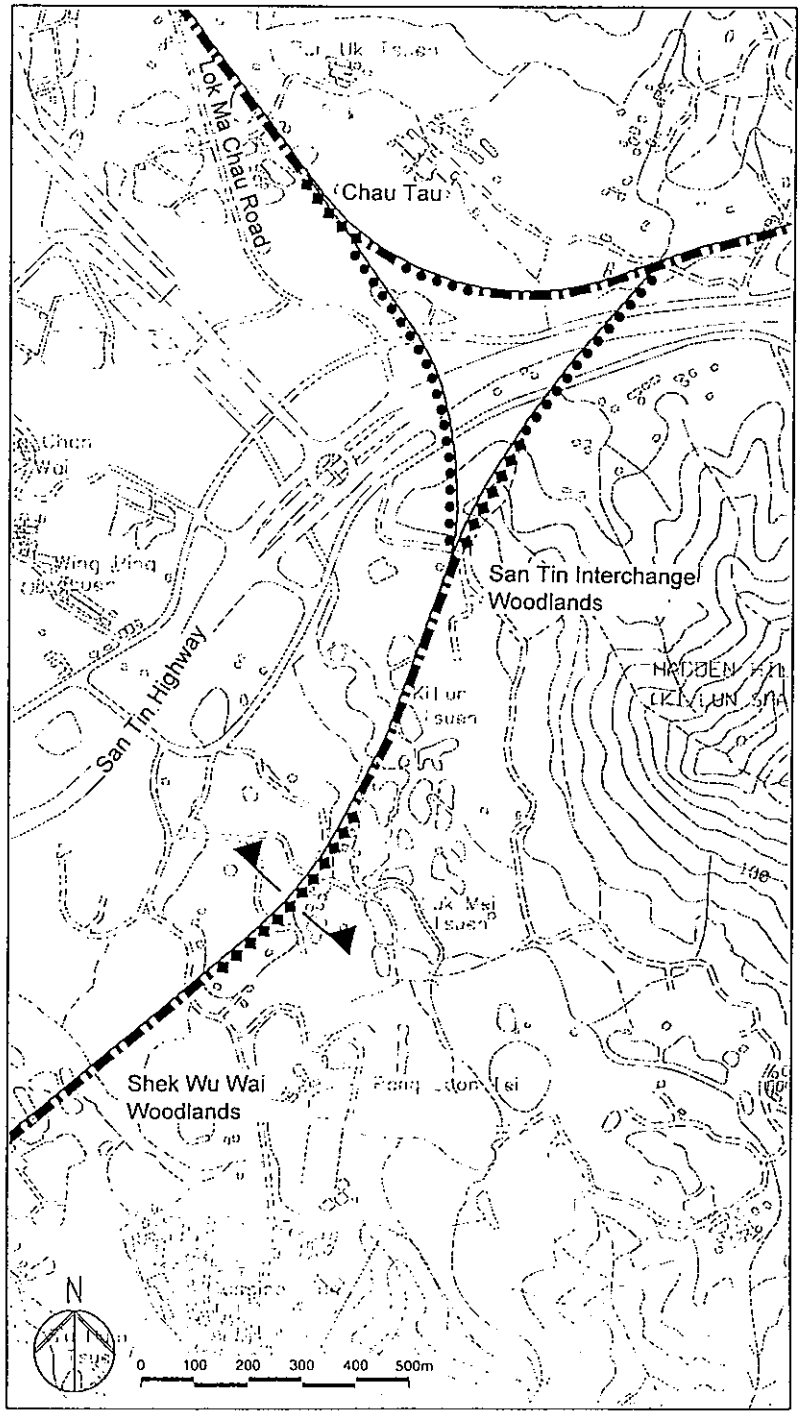
Issues

- **Railway corridor** : Treatment to embankments and cutting.
- **Visual impact** : Visual intrusion caused by embankments. Appearance of viaducts, bridges, noise barriers, lighting and other trackside features.
- **Property interfaces** : Severance of roads. Disruption to adjacent property boundary. Disruption to existing road embankments.
- **Noise** : Noise barriers are likely to be required along this stretch.
- **Sites of ecological interest** : Proximity to San Tin Interchange woodland.

Strategy

- **Railway corridor** : Embankments over 10m high to be considered for replacement by viaduct to minimise disruption. Cutting and embankment slopes to be planted where possible.
- **Visual impact** : Embankments to be planted with indigenous shrubs and trees to mitigate negative visual impact. Planting to maintain passenger views from the train. Refer to Technical Appendix II and system-wide proposals. Appearance of viaduct as described in system-wide proposals.
- **Property interfaces** : Access through embankments via underpass rather than bridge. Routes to be directed around cuttings. Fencing required at the boundary lines of embankments and cuttings. Access to be maintained under viaduct to allow for reinstatement of previous land use. KCRC boundary under viaduct to be marked by boundary stones, where farming or container storage land uses are proposed. Private boundary disrupted by construction to be reinstated to previous condition. Restoration of soft and hard landscape treatment to road embankments to be agreed with Highways Department.
- **Noise** : Noise barriers above passenger eye-level should preferably be transparent to maintain views. For noise barrier design refer to system-wide proposals.
- **Sites of ecological interest** : Disturbance of San Tin Interchange woodland should be minimised by replacing sections of embankment with viaduct where possible.





4.5.2 Landscape Strategy Proposals: (vii) Chau Tau to Lok Ma Chau station

Context

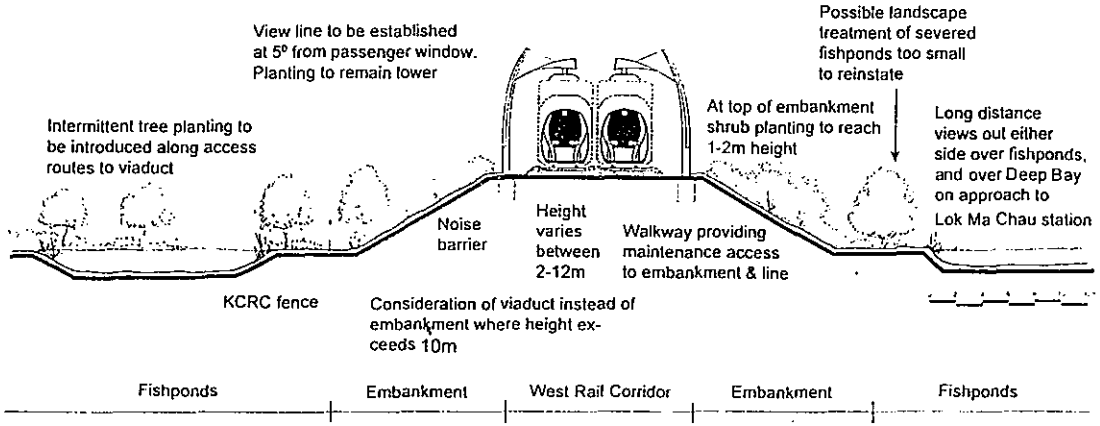
- From Chau Tau, West Rail will run north-west to Lok Ma Chau station. It will be on embankment except for a section of bridge which passes over San Sham Road.
- The surrounding land use is rural yet industrial in character - open storage yards dispersed between fish ponds.
- Lok Ma Chau fish ponds (AFD Grade C) and woodland of ecological interest are in this area.
- There will be long distance views into Shen Zhen from the route along this section and local views into the fish pond and container areas.

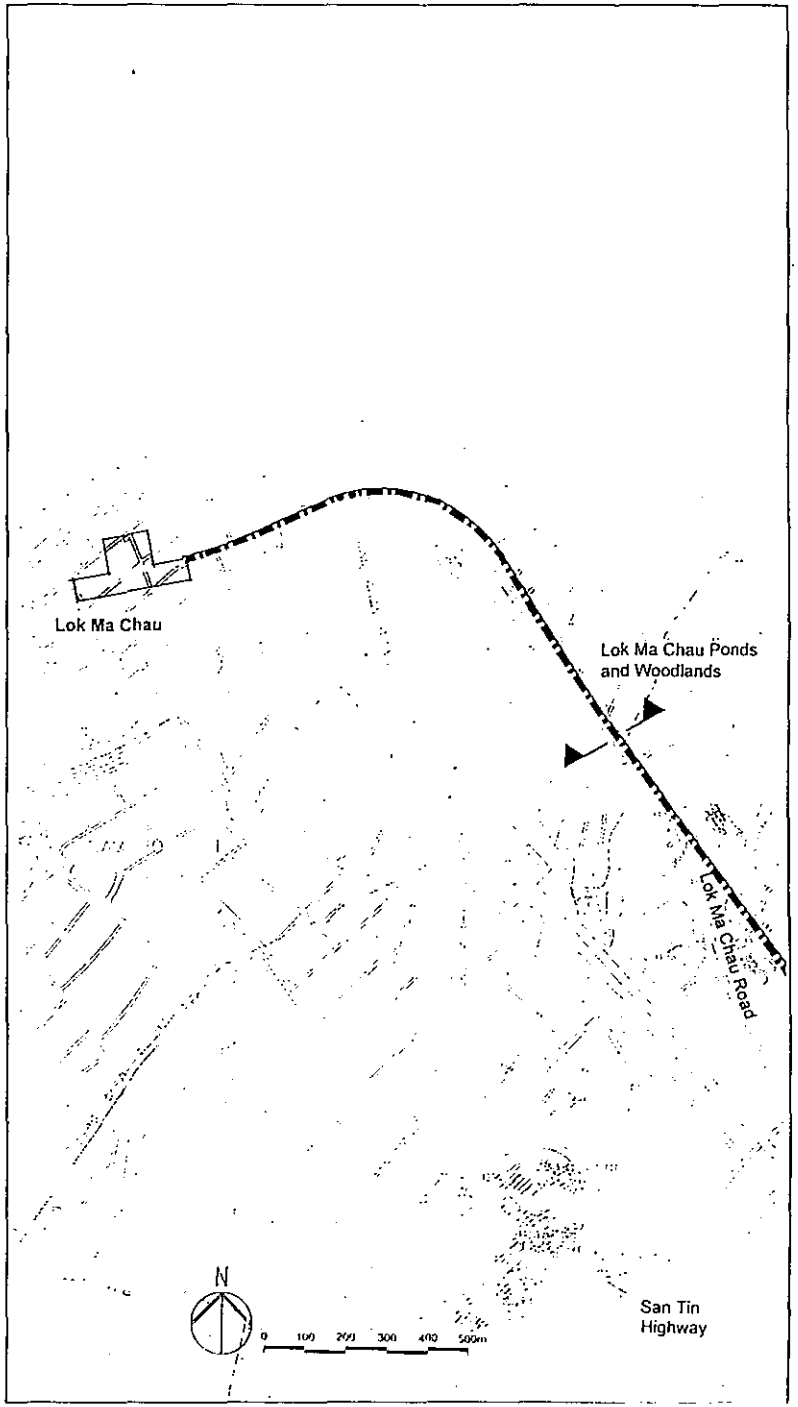
Issues

- **Railway corridor** : Treatment to rail embankments, and disturbed road embankments.
- **Visual impact** : Visual intrusion caused by embankments. Appearance of bridges, noise barriers and other trackside features.
- **Property interfaces** : Severance of roads. Disruption to adjacent property boundary.
- **Site of ecological interest** : Disturbance to Lok Ma Chau fish ponds and proximity to woodland.

Strategy

- **Railway corridor** : Embankments over 10m high to be considered for replacement by viaduct to minimise disruption to areas of farming. Refer to system-wide proposals for treatment to embankments. Bridges to be single span where possible. Refer to system-wide proposals for bridge parapet / deck structure details.
- **Visual impact** : Embankments to be planted with indigenous shrubs and trees to mitigate negative visual impact. Planting to maintain passenger views from the train. Appearance of viaduct and noise barriers - refer to system-wide proposals and **Technical Appendix I.**
- **Property interfaces** : Private boundary disrupted by construction to be reinstated to previous condition. Restoration of soft and hard landscape treatment to road embankments to be agreed with Highways Dept. Underpasses are recommended rather than bridges due to the proposed height of the embankment.
- **Site of ecological interest** : Disturbance of Lok Ma Chau fish ponds and woodland should be minimised by replacing sections of embankment with viaduct where possible. Restoration of ponds, where possible, with planting along the perimeter to enclose the areas, retain the site character and restore habitats.





4.5.2 Landscape Strategy Proposals: (viii) Chau Tau to Kwu Tung

Context

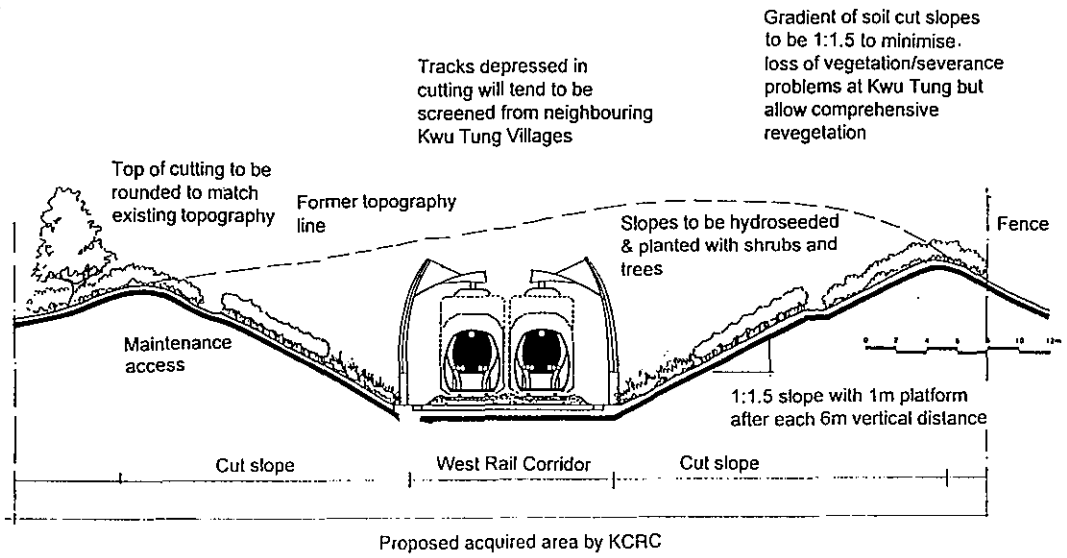
- From Chau Tau to Kwu Tung, West Rail will pass to the south of the Northern Freight Yard in cutting, falling from around +16.0 to +12.0 mPD. Existing ground levels either side are undulating and vary from +12.0 mPD to +28.0 mPD.
- There will be passenger views from the train south west to Hadden Hill, and south along the Sheung Yue River.
- Noise barriers are likely to be required over much of this section.

Issues

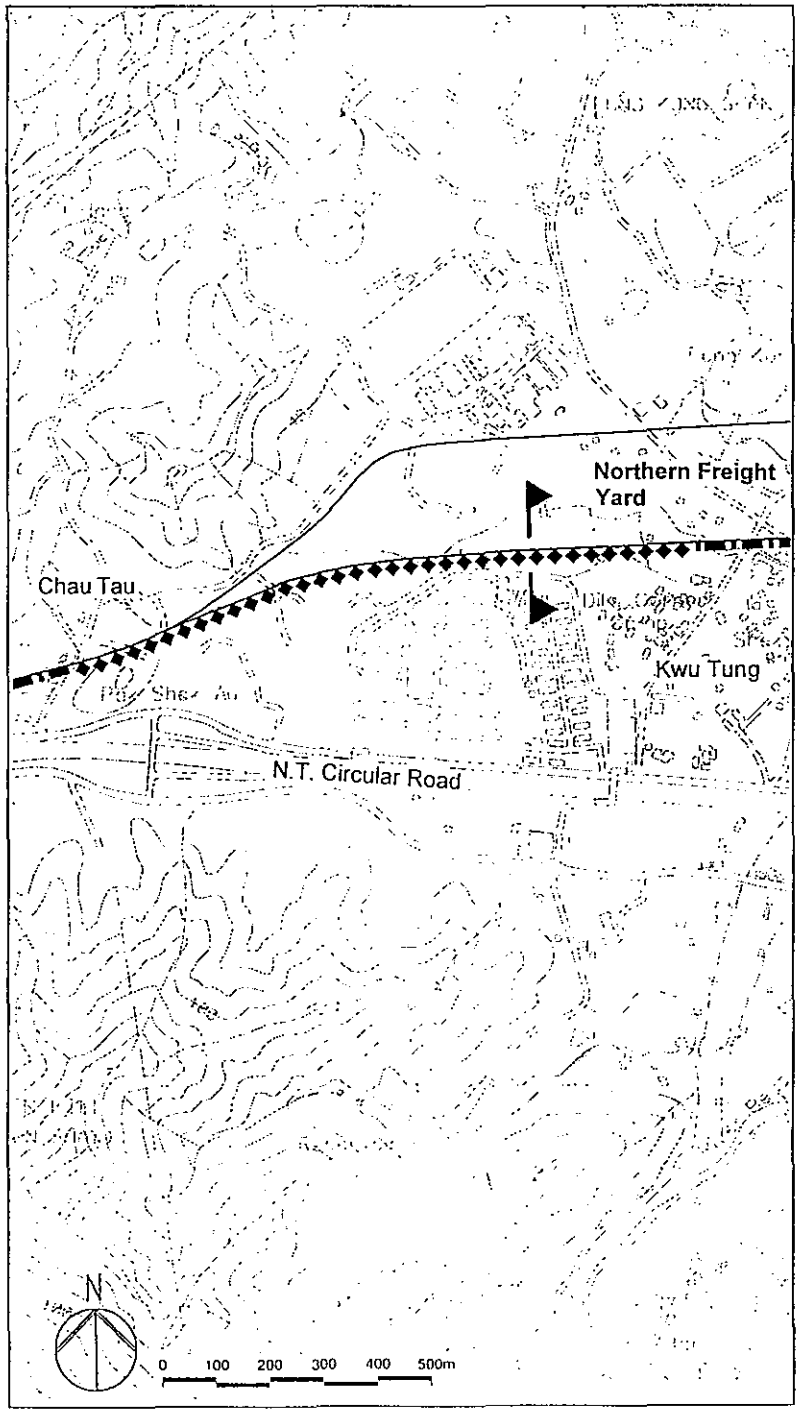
- **Railway corridor** : Treatment of cutting slopes.
- **Property interfaces** : Disruption to adjacent property boundary.
- **Noise** : Noise barriers are likely to be required along this section.

Strategy

- **Railway corridor** : Cutting to be planted as specified in system-wide proposals. Extent of cutting should be minimised in order to minimise felling of mature trees within valley bottom.
- **Property interfaces** : There will be no public access across the cutting. Access will be provided at the west and east ends of the Northern Freight Yard. Private boundary treatment disrupted for the construction of railway corridor to be reinstated to previous condition. Boundary fence should be provided along the top of the cutting for safety reasons. Refer to **Technical Appendix I** for design of fence.
- **Noise** : Noise barriers should preferably be transparent to allow passenger views. Refer to system-wide proposals.



Proposed acquired area by KCRC



4.5.2 Landscape Strategy Proposals: (ix) Kwu Tung to Ho Sheung Heung

Context

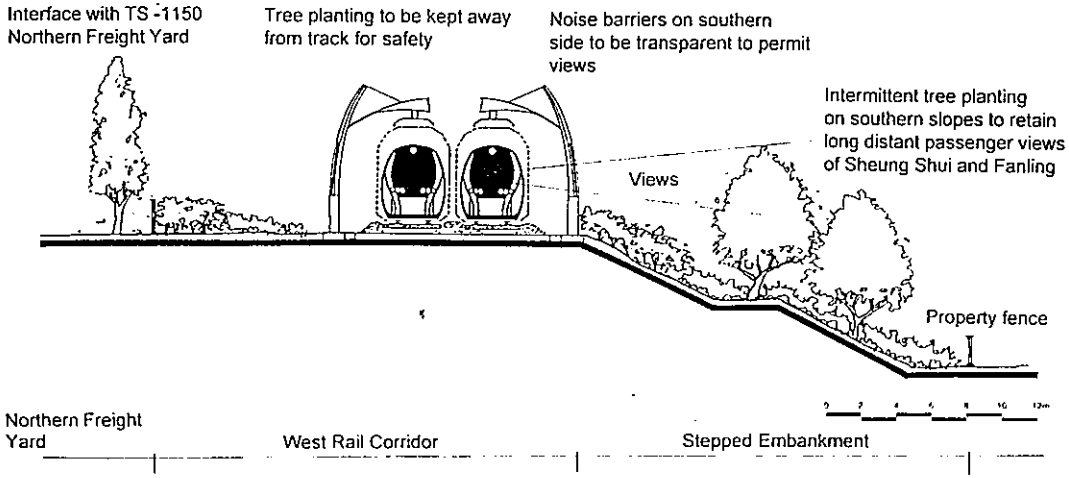
- From Kwu Tung to Ho Sheung Heung, West Rail will run on embankment at a level of approx. +12.0 mPD and the surrounding ground level will vary from +5.0 to +9.0 mPD. Noise barriers would be required along the both edges of the embankment.
- There will be passenger views from this section of the surrounding countryside, into the Northern Freight Yard and towards Sheung Shui and Fanling in the distance.
- Hing Shing Temple, Pai Fung Old Temple and Sin Wai Nunnery sites of Historical and Cultural importance are located in this area.

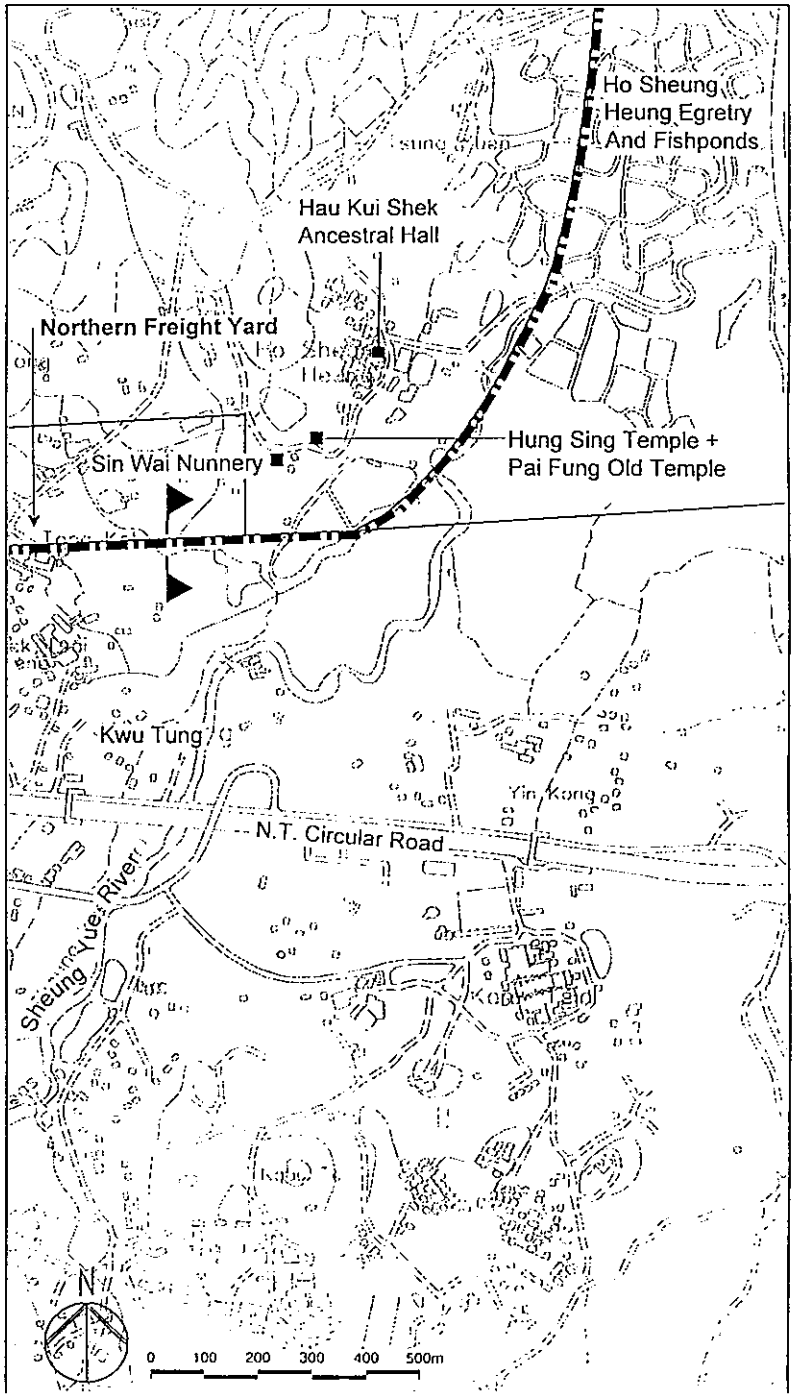
Issues

- **Railway corridor** : Treatment to embankments.
- **Visual impact** : Visual intrusion of embankment. Appearance of noise barriers and other trackside features.
- **Property interfaces** : Severance of roads. Disruption to adjacent property boundary.
- **Noise** : Noise barriers are likely to be required along this stretch.
- **Sites of historical and cultural importance** : Proximity to Hing Shing Temple (AMO Grade 2), Pai Fung Old temple (AMO Grade 2), and Sin Wai Nunnery (AMO Grade 3).

Strategy

- **Railway corridor** : Embankments over 10m high to be considered for replacement by viaduct to minimise disruption to areas of farming. Embankments to be treated as described in system-wide proposals.
- **Visual impact** : Embankments to be planted with indigenous shrubs and trees to mitigate negative visual impact. Planting to maintain passenger views from the train. Additional screening of the embankment from surrounding villages should be considered by the creation of planted mounds, designed according to the system-wide proposals for embankments and planted according to the Technical Appendix II.
- **Property interfaces** : Boundaries disrupted by cutting should be restored to a similar condition. Boundary fence should be provided along the foot of embankments as described in the system-wide proposals. Underpasses are recommended rather than bridges due to the proposed height of the embankments.
- **Noise** : Noise barriers above eye level should preferably be transparent to maintain views, and designed in accordance with system-wide proposals.
- **Sites of historical and cultural importance** : Current plans show that West Rail does not disrupt the sites of historical and cultural importance. The route may sever access to these sites for the surrounding villages and these should be reinstated.





4.5.2 Landscape Strategy Proposals: (x) Ho Sheung Heung to Lo Wu station

Context

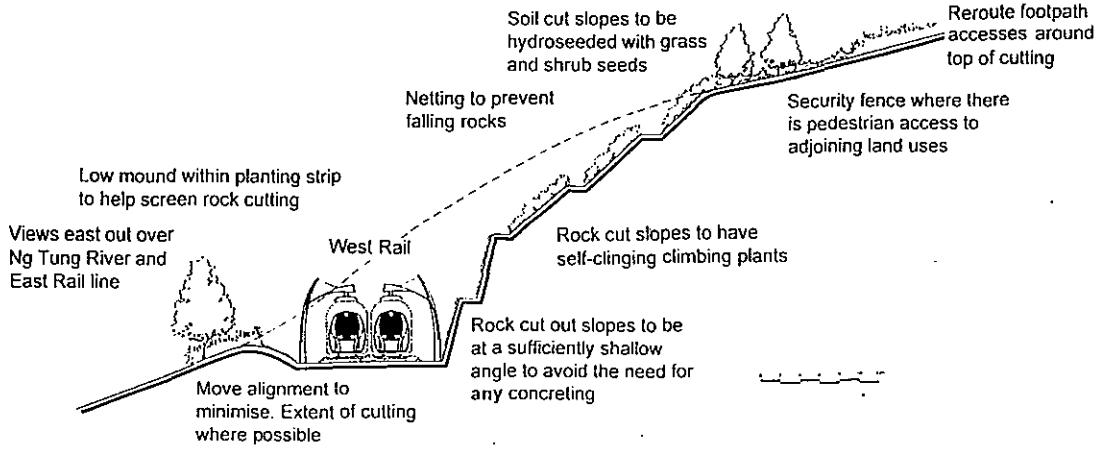
- From Ho Sheung Heung West Rail will be on embankment around Tai Shek Mo (Crest Hill), in a short cutting and then on viaduct across Ng Tung Ho River to Lo Wu station (Existing). The track will generally be at +12.0 mPD and the surrounding ground level will vary from +5.0 to +18.0 mPD.
- The embankment passes close to Hau Kui Shek Ancestral Hall (AMO Deemed Monument) which is a Site of Historical and Cultural Interest and across Ho Sheung Heung egretry and fish ponds (AFD Grade C) which are areas of ecological interest.
- The land use either side is generally fish farming and scattered dwellings. West Rail will be visible to passengers on East Rail as they meet at Lo Wu station.
- There will be long distance views into Shen Zhen from the route along this section and local views into the fish ponds, except in the short section in cutting.

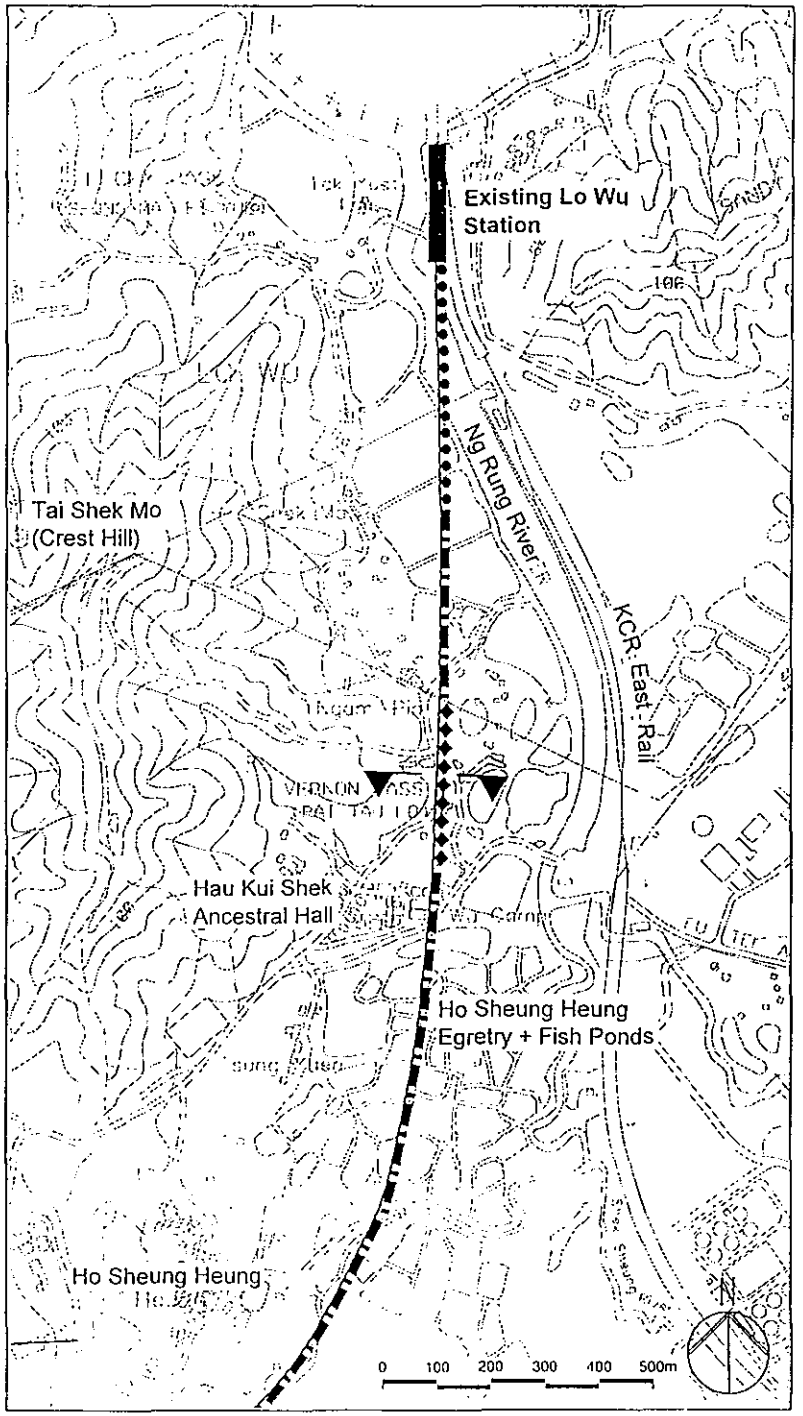
Issues

- **Railway corridor** : Treatment to embankments and cuttings.
- **Visual impact** : Visual intrusion of embankments. Appearance of elevated structures, as well as noise barriers and other trackside features.
- **Property interfaces** : Severance of roads. Disruption to adjacent property boundary. Boundary markers.
- **Noise** : Noise barriers are likely to be required along this section.
- **Sites of historical and ecological interest** : Proximity to Ancestral Hall, egretry and fish ponds.

Strategy

- **Railway corridor** : Embankments over 10m high to be considered for replacement by viaduct to minimise disruption to areas of farming and to fish ponds.
- **Visual impact** : Embankments to be planted with indigenous shrubs and trees to mitigate negative visual impact. Planting to maintain passenger views from the train. Refer to system-wide proposals and Technical Appendices for planting strategy and treatment to embankment and cutting slopes. Appearance of viaduct/ bridge over river as described in system-wide proposals.
- **Property interfaces** : Fencing is required at the boundary of embankment and cutting for trackside safety. Fish ponds severed by the embankment to be restored where water quality permits. Underpasses are recommended through embankments rather than bridges due to the height of proposed embankments. Access routes to be directed around cuttings. Private boundary treatment disrupted for the construction of railway corridor to be reinstated to previous condition.
- **Noise** : Noise barriers above eye level should preferably be transparent to maintain views. Refer to system-wide proposals.
- **Sites of historical and ecological interest** : Current plans show sites of historical importance remain undisturbed though severed accesses would require to be reinstated.





Northern Section (TS100) DESIGN STRATEGY

LANDSCAPE DESIGN STRATEGY REPORT

4.5.2 Landscape Strategy Proposals: (xi) Ho Sheung Heung to Sheung Shui station

Context

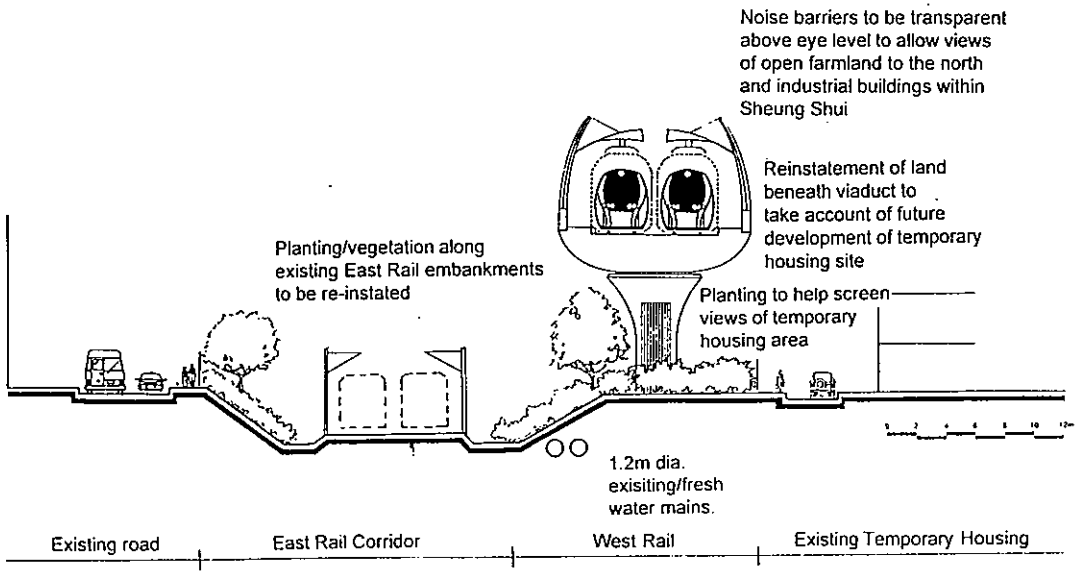
- From Ho Sheung Heung to its junction with the East Rail Corridor at Sheung Shui Station, West Rail will be on viaduct across mainly farming land with scattered village settlements.

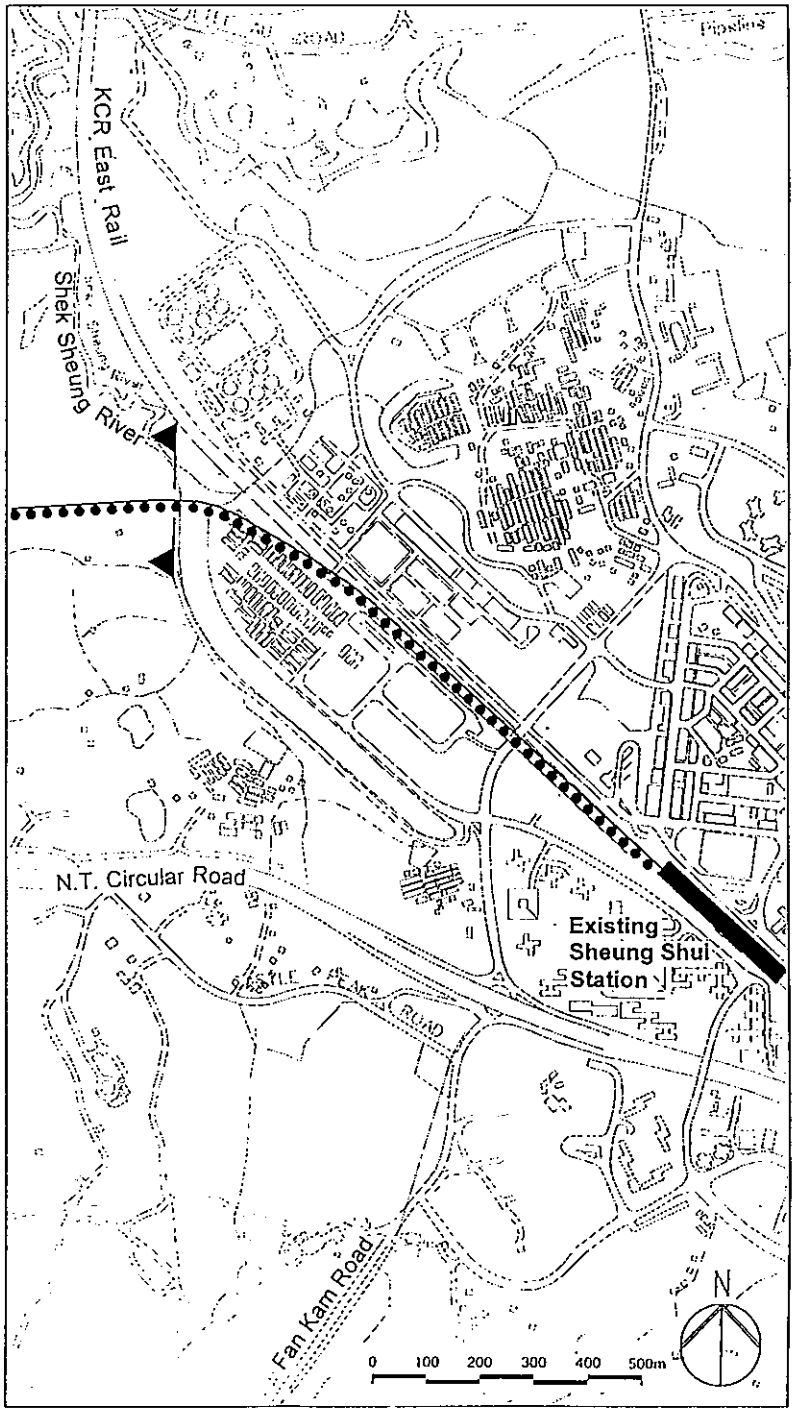
Issues

- **Railway corridor** : Land use underneath viaduct.
- **Visual impact** : Appearance of viaduct.
- **Property interfaces** : Restoration of fish ponds and private boundary treatments. Boundary markers. Severance of access across the corridor.
- **Noise** : Noise barriers are likely to be required along this section.

Strategy

- **Railway corridor** : Land under viaduct to be restored to agricultural use where possible.
- **Visual impact** : Appearance of viaduct over river to be in accordance with system-wide proposals.
- **Property interfaces** : KCRC property line under viaduct to be marked by stone boundary markers. Areas of farming and fish ponds to be restored for use where necessary and where water quality allows. At the interface with East Rail where access under the viaduct by non KCRC personnel is not permitted, railway corridor to be fenced and planted as described in the system-wide proposals and Technical Appendix II. Underpasses through embankments are recommended in favour of foot bridges due to the proposed height of the embankment. Access route to be directed around cuttings. Private boundary treatment disrupted for the construction of railway corridor to be reinstated to previous condition.
- **Noise** : Noise barriers are required along both edges of the embankment and where they are above passenger eye-level should preferably be transparent to maintain views. To be designed in accordance with system-wide proposals.





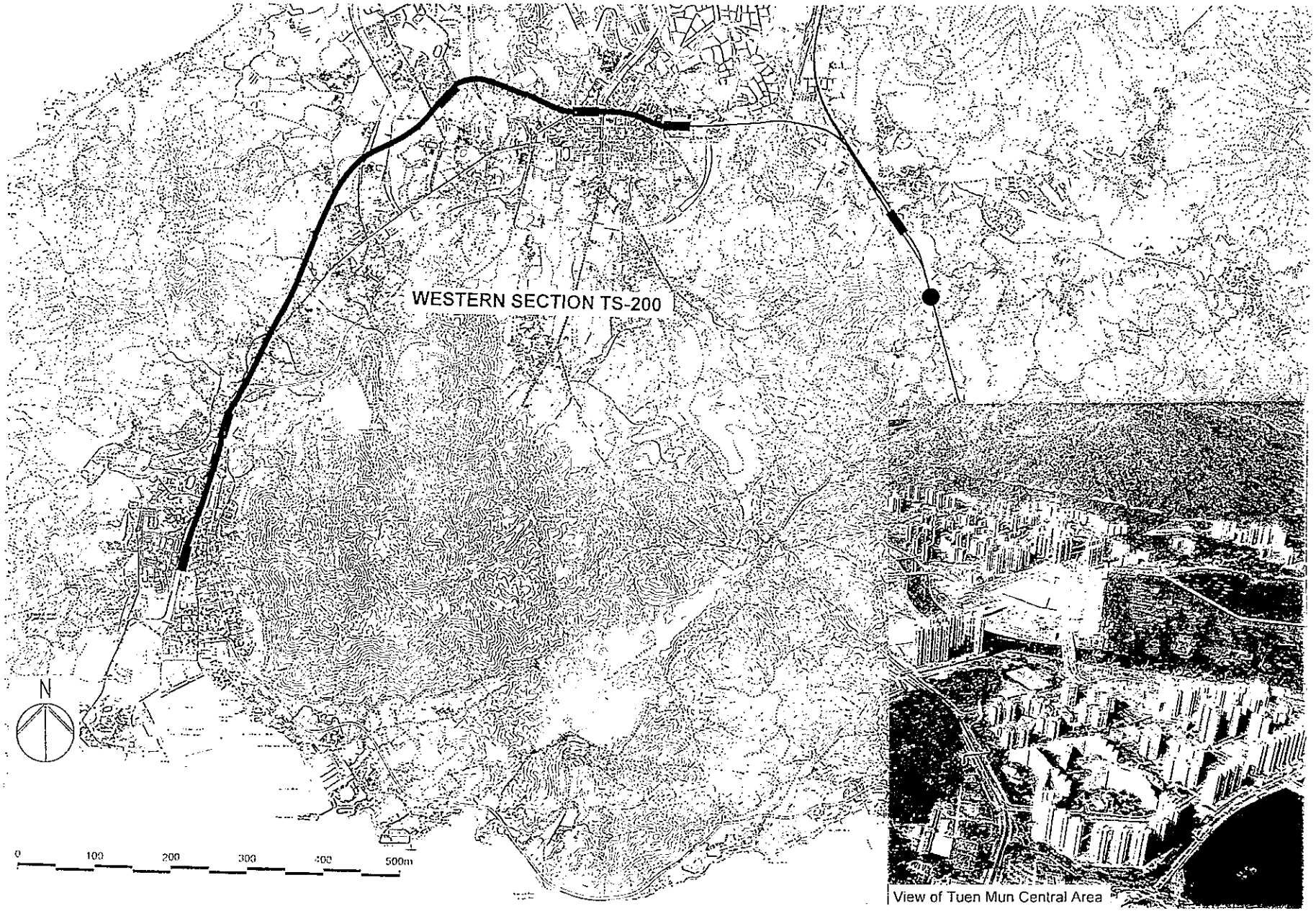
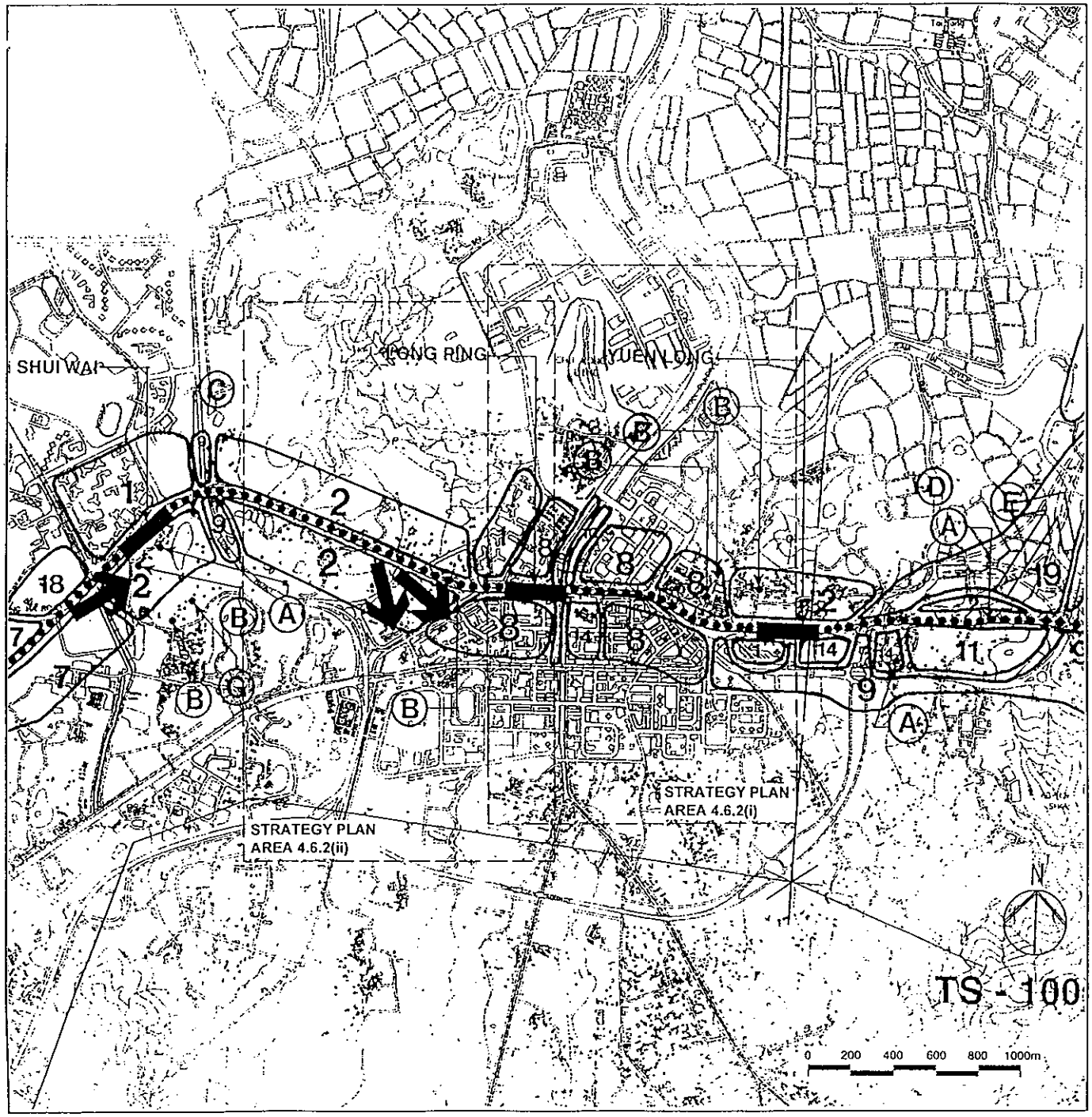


Fig. 4E Western Section (TS200)

4.6.1 Landscape Analysis: (i) Yuen Long station to Tin Tsz Road



EXISTING ADJACENT LANDUSE

1. Urban Residential Area
2. Rural Residential /Farming Area
3. Urban Recreational Area /Public Open Space
4. Rural Recreational Area /Public Open Space
5. Urban Commercial Area
6. Urban Industrial Area
7. Rural Industrial Area
8. Urban Mixed Commercial/Residential Area
9. Transportation Corridor
10. Drainage Channel /River
11. Community Facility (School, Hospital, Bus Station)

PROPOSED ADJACENT LANDUSE

12. Urban Residential Area
13. Urban Recreational Area /Public Open Space
14. Urban Comprehensive Development Area
15. Urban Development Area
16. Urban Development Area-Container Related
17. Urban Development Area-Hotel Site
18. Urban Mixed Commercial /Residential Area
19. Transportation Corridor
20. Freight /Maintenance Yard
21. Committed Residential Development

ROUTE NATURE

- At Grade
- Cut And Cover Tunnel
- Bored Tunnel
- Embankment
- Cutting
- Viaduct
- Station
- 20 — Yard / Depot

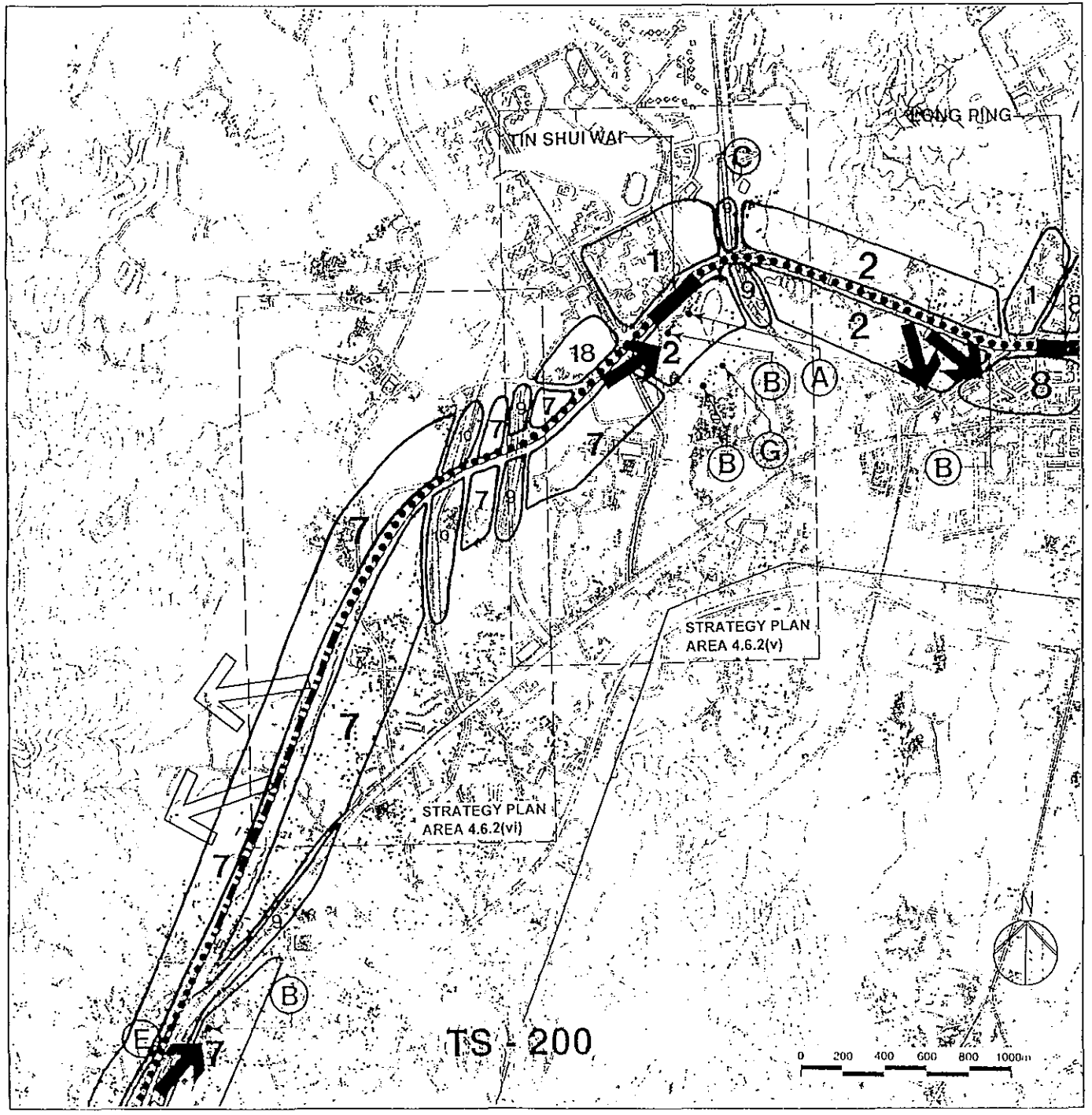
CULTURAL AND ENVIRONMENTAL SITES

A. Historical /Ancestral Building
B. Temple /Pagoda /Monastery
C. Fung Shui Site
D. Nullah
E. River /Marsh /Fish Pond
F. Egretry
G. Woodland

VIEWS

- Local View
- Distant View

4.6.1 Landscape Analysis: (ii) Tin Tsz Road to Hung Shui Kiu



EXISTING ADJACENT LANDUSE

1. Urban Residential Area
2. Rural Residential /Farming Area
3. Urban Recreational Area /Public Open Space
4. Rural Recreational Area /Public Open Space
5. Urban Commercial Area
6. Urban Industrial Area
7. Rural Industrial Area
8. Urban Mixed Commercial/Residential Area
9. Transportation Corridor
10. Drainage Channel /River
11. Community Facility (School, Hospital, Bus Station)

PROPOSED ADJACENT LANDUSE

12. Urban Residential Area
13. Urban Recreational Area /Public Open Space
14. Urban Comprehensive Development Area
15. Urban Development Area
16. Urban Development Area-Container Related
17. Urban Development Area-Hotel Site
18. Urban Mixed Commercial /Residential Area
19. Transportation Corridor
20. Freight /Maintenance Yard
21. Committed Residential Development

ROUTE NATURE

- At Grade
- Cut And Cover Tunnel
- Bored Tunnel
- Embankment
- Cutting
- Viaduct
- Station
- 20 — Yard / Depot

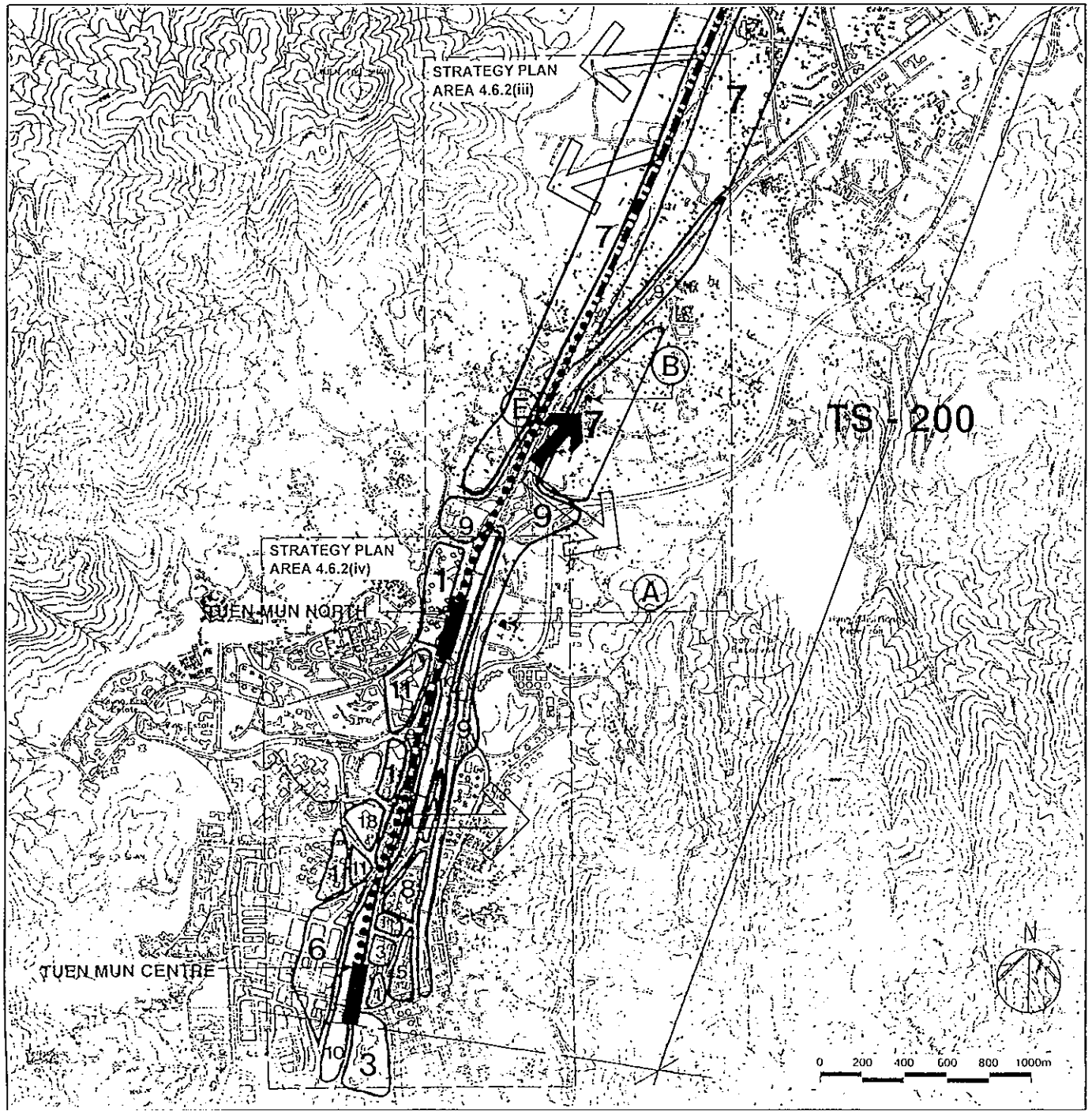
CULTURAL AND ENVIRONMENTAL SITES

A. Historical /Ancestral Building
B. Temple /Pagoda /Monastery
C. Fung Shui Site
D. Nullah
E. River /Marsh /Fish Pond
F. Egretry
G. Woodland

VIEWS

- Local View
- Distant View

4.6.1 Landscape Analysis: (iii) Hung Shui Kiu to Tuen Mun Central station



EXISTING ADJACENT LANDUSE

1. Urban Residential Area
2. Rural Residential /Farming Area
3. Urban Recreational Area /Public Open Space
4. Rural Recreational Area /Public Open Space
5. Urban Commercial Area
6. Urban Industrial Area
7. Rural Industrial Area
8. Urban Mixed Commercial/Residential Area
9. Transportation Corridor
10. Drainage Channel /River
11. Community Facility (School, Hospital, Bus Station)

PROPOSED ADJACENT LANDUSE

12. Urban Residential Area
13. Urban Recreational Area /Public Open Space
14. Urban Comprehensive Development Area
15. Urban Development Area
16. Urban Development Area-Container Related
17. Urban Development Area-Hotel Site
18. Urban Mixed Commercial /Residential Area
19. Transportation Corridor
20. Freight /Maintenance Yard
21. Committed Residential Development

ROUTE NATURE

- At Grade
- Cut And Cover Tunnel
- Bored Tunnel
- Embankment
- Cutting
- Viaduct
- Station
- 20 — Yard / Depot

CULTURAL AND ENVIRONMENTAL SITES

A. Historical /Ancestral Building
B. Temple /Pagoda /Monastery
C. Fung Shui Site
D. Nullah
E. River /Marsh /Fish Pond
F. Egretry
G. Woodland

VIEWS

- Local View
- Distant View

4.6.2 Landscape Strategy Proposals: (i) Yuen Long station to Long Ping station

Context

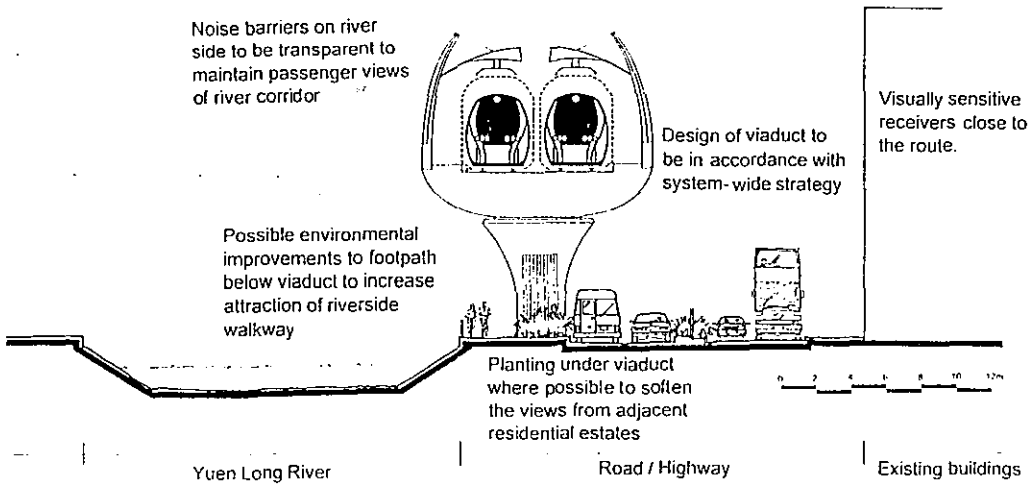
- The Western Section of West Rail will start at Yuen Long station, located adjacent to the existing Light Rail Transit Terminal at Sun Yuen Long Plaza. From there it will continue westwards on viaduct, crossing over Nam Pin Wai Village close to Tai Wong Temple. It will pass through the Yuen Long Town centre along the route of the town nullah, Long Yip Street and Yuen Long On Lok Road as far as Long Ping, which straddles Shan Pui River.
- There will be views for passengers along the nullah and of the industrial and residential areas in the northern part of Yuen Long.

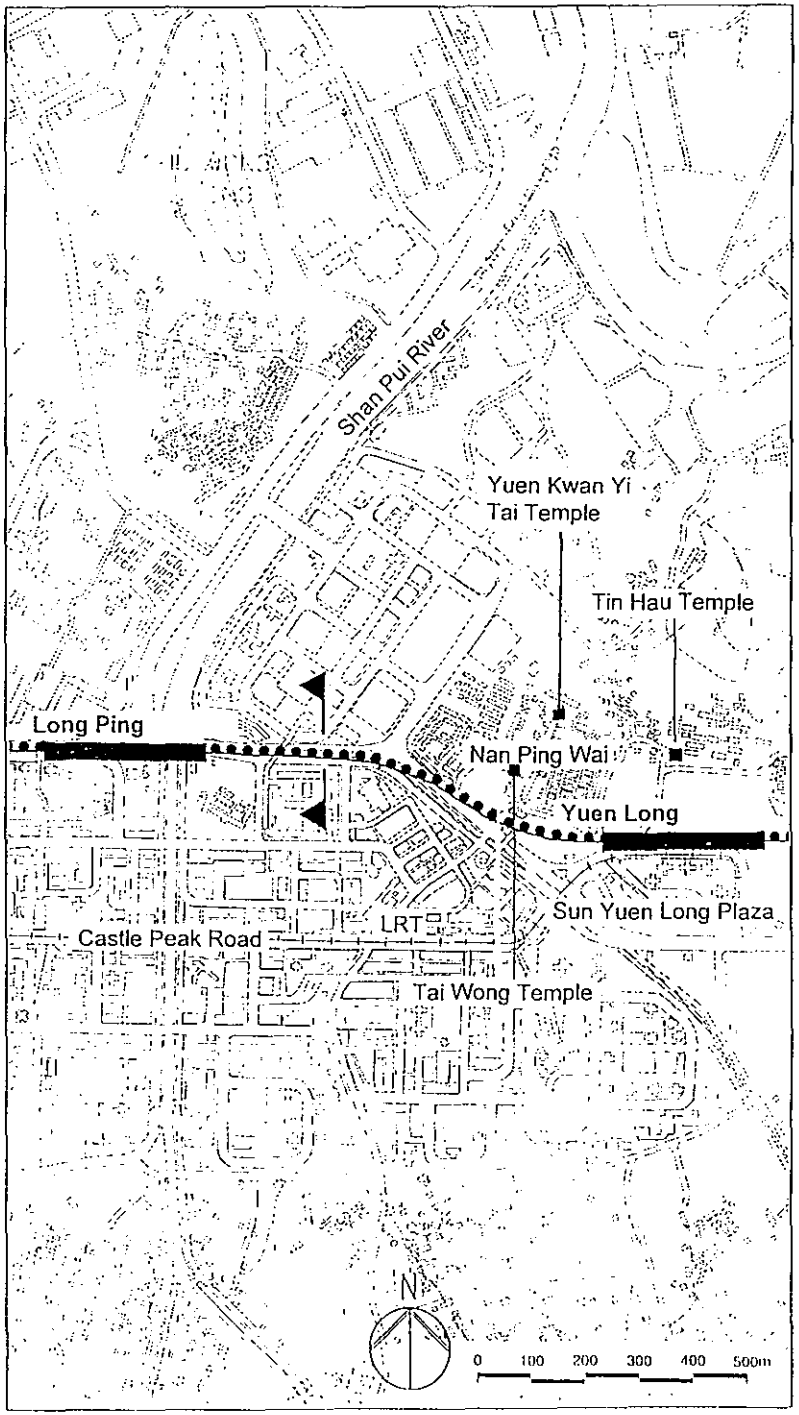
Issues

- **Railway corridor** : Land use underneath viaduct.
- **Visual impact** : Appearance of viaduct. Treatment around piers of viaduct around town nullah.
- **Property interfaces** : Interface with adjacent existing and proposed residential and commercial developments of Yuen Long and the Light Rail Transit.
- **Noise** : Noise barriers would be required along this section.
- **Sites of historic and cultural interest** : Proximity to Yuen Kwan Yi Tai Temple (AMO Grade 1), Tai Wong Temple (AMO Grade 1), Yuen Long Kau Hui (AMO Ungraded), Tin Hau Temple and Kwun Yum Temple (both AMO Grade 1).

Strategy

- **Railway corridor** : Land under the viaduct within Nam Pin Wai Village should be restored for agricultural use and indicated by marker stones. Where no permanent land use is identified, land to be planted with trees and shrubs. Fencing to be provided where access is be prohibited. Nullah under the viaduct will not be disrupted by the construction of West Rail, but Long Yip Street and Yuen Long On Lok Road and associated footpaths to be restored to existing condition. Restoration work to the footpaths may provide an opportunity for on-street environmental improvements i.e. up grading footpath surfaces, planting of street trees and provision of co-ordinated street furniture.
- **Visual impact** : Appearance of viaduct and associated piers to be as described in system-wide proposals.
- **Property interfaces** : West Rail to be aligned as close as possible to the Light Rail Transit to create one combined transportation corridor where service access, lighting and transparent noise barriers can be dual purpose.
- **Noise** : Noise barriers above eye level preferably to be transparent to maintain passenger views. Refer to system-wide proposals for appearance of barriers.
- **Sites of historic and cultural interest** : Disrupted access from Nam Pin Wai Village Road to site of historic interest should be reinstated.





4.6.2 Landscape Strategy Proposals: (ii) Long Ping station to Tin Tsz Road

Context

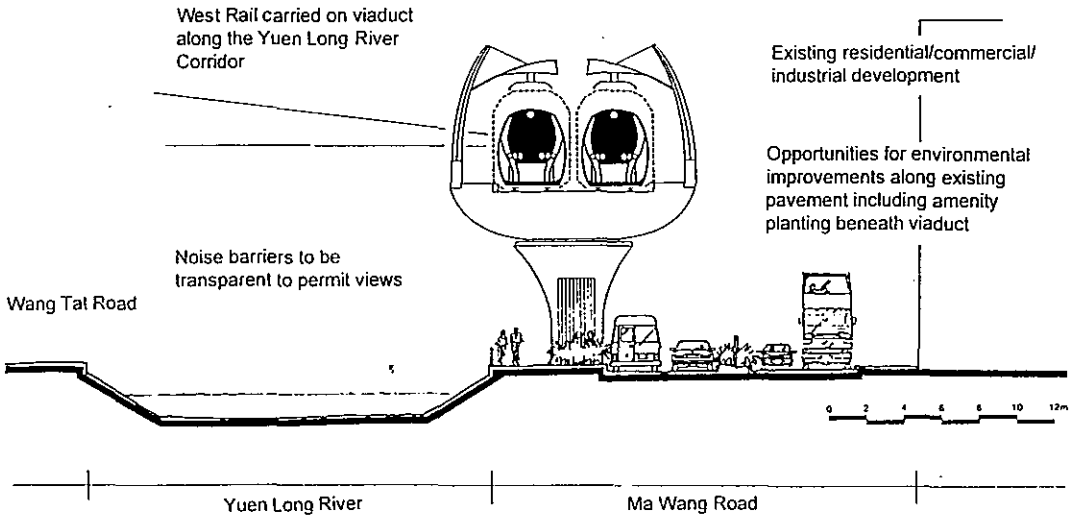
- West Rail will run west from Long Ping station on viaduct following the nullah between Wang Tat and Ma Wang Roads for 150m before angling west-north-west, passing just to the north of Tin Hau Temple (AMO Grade 2). It will cross Long Ping Road and then the existing agricultural areas at Wang Ning Tsuen.
- The alignment passes close to Tin Hau Temple which is a site of historical and cultural importance.
- There will be views for the passengers over into Yuen Long from this section in particular of Tin Hau Temple and the Pagoda in Yuen Long Town Park.

Issues

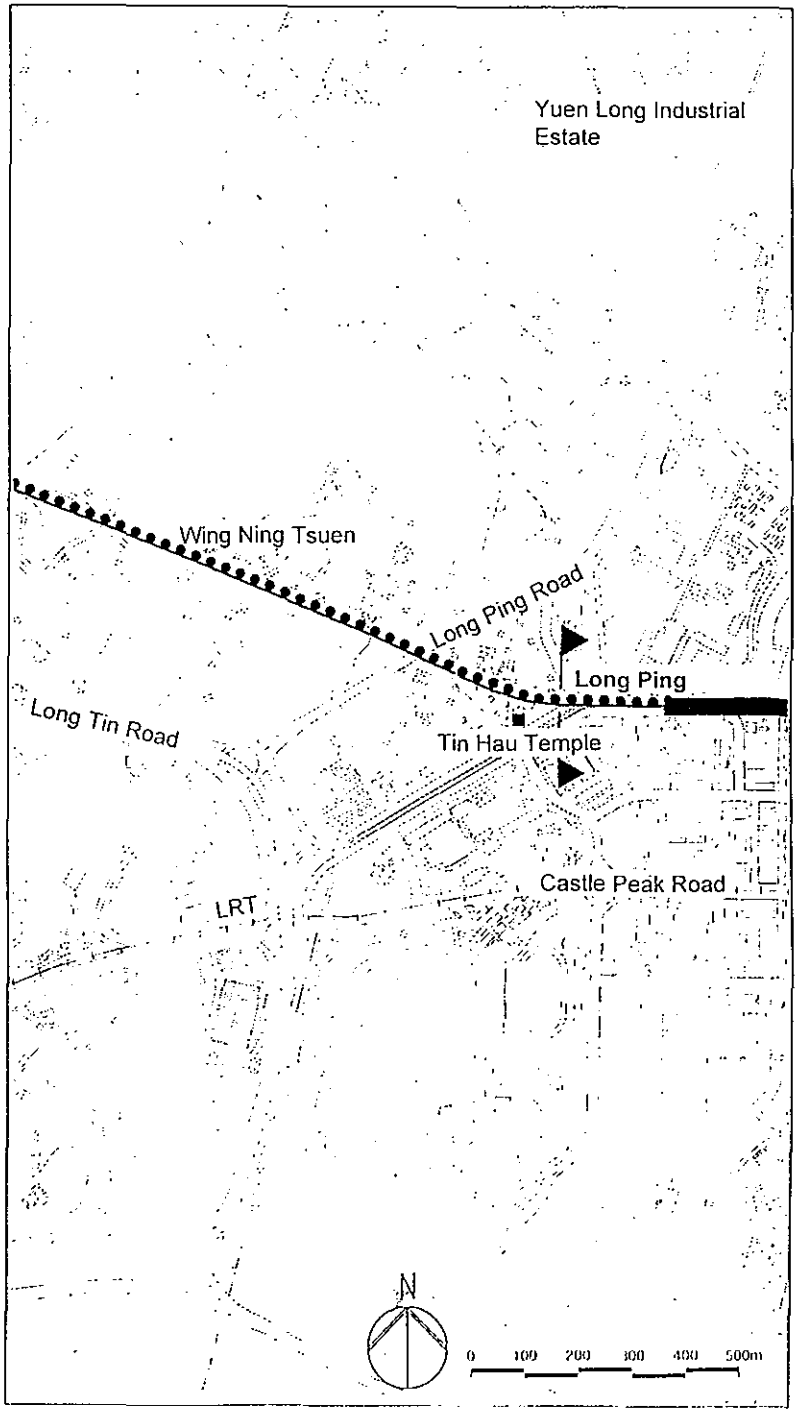
- **Railway corridor** : Land use underneath viaduct.
- **Visual impact** : Appearance of viaduct. Treatment around piers of viaduct around town nullah. Appearance of noise barriers and other trackside features.
- **Property interfaces** : Interface with adjacent existing and proposed residential and commercial developments of Yuen Long. Disruption to pedestrian circulation in Wang Tat and Ma Wang Roads in Yuen Long.
- **Noise** : Noise barriers are required along the route.
- **Sites of historical interest** : Proximity of historic Tin Hau Temple site and adjacent monastic building.

Strategy

- **Railway corridor** : Land under viaduct to be restored for farming where possible and boundary indicated by marker stones. Where no permanent land use is identified, land to be planted with trees and shrubs. Fencing to be provided only where access needs to be prohibited. It is not yet clear if Wang Tat and Ma Wang Roads will be reinstated. Where planting is possible under viaduct, species to be shade tolerant and to include climbing plants at piers. Design of planting as specified in Technical Appendix II.
- **Visual impact** : Appearance of viaduct to be as described in system-wide strategy.
- **Property interfaces** : Opportunities exist to improve the street environment along under Wang Tat, Ma Wang Roads and Ping Shun Street, around the entrances to the proposed elevated Long Ping station and to the existing Tai Kiu Village. On the north side of the viaduct, pedestrian access should be maintained between the commercial and residential area either side of the nullah.
- **Noise** : Noise barriers above eye level to be transparent to allow passenger views. Refer to system-wide proposals for appearance of barriers.
- **Sites of historical interest** : Access to Tin Hau Temple from Shui Tin Tsuen Village to the north of the viaduct should be maintained.



KOWLOON - CANTON RAILWAY CORPORATION
WEST RAIL: TS900 EIA STUDY



4.6.2 Landscape Strategy Proposals: (iii) Tin Tsz Road to Hung Tin Road

Context

- West Rail will continue west-north-westwards on viaduct over mixed farming and residential land to Tin Tsz Road where it will turn south-west towards Tin Shui Wai station, running parallel to the Light Transit Rail and the existing and proposed residential and commercial developments of Tin Yui Estate. From Tin Shui Wai station, it will continue south-west on viaduct crossing the semi-rural industrial area south-west of Tin Shui Wai until it crosses Hung Tin Road.
- The viaduct passes to the north of 4 sites of historic and cultural interest and Sheung Cheung Woodland which is a site of ecological interest.

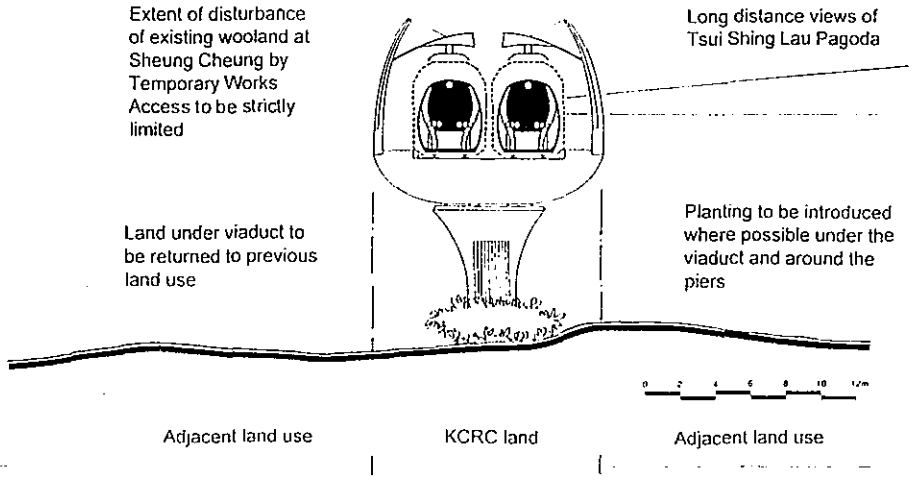
Issues

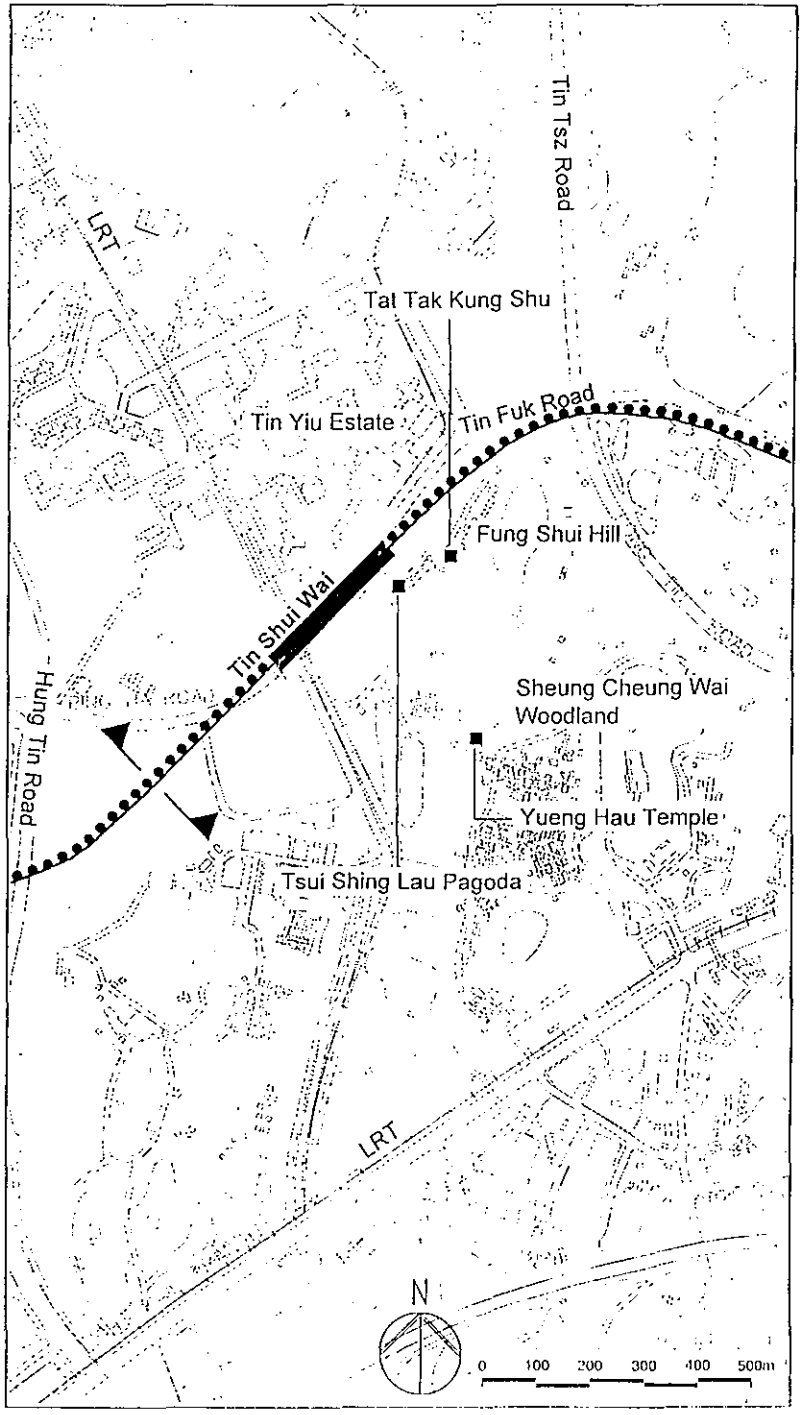
- **Railway corridor** : Land use underneath viaduct,
- **Property interface**: Interface with the existing and proposed residential and commercial developments of Tin Yui estate and the Light Rail Transit.
- **Visual impact** : Appearance of viaduct. Appearance of noise barriers, lighting and other trackside features.
- **Noise** : Noise barriers are likely to be required in this section.
- **Sites of historic and cultural interest** : Proximity to Tsui Shing Lao Pagoda (AMO Declared Monument), Yeung Hau Temple, Tat Tak Kung Shu (AMO Ungraded) and a Fung Shui hill.
- **Sites of ecological interest** : Sheung Cheung Wai Woodland.

Strategy

- **Railway corridor** : Land under viaduct to be restored for previous land use where possible and boundary to be marked by stones. Where no permanent land use is identified, land to be planted with trees and shrubs. Tin Fuk Road in Tin Shui Wai will be restored for use as a road, therefore the central reservation planting should be reinstated around the viaduct piers. Planting under viaduct to be shade tolerant species and to include climbing plants at piers, as specified in **Technical Appendix II**.
- **Visual impact** : Appearance of viaduct to be as described in system-wide strategy.
- **Property interface**: New fencing to be provided where access is to be prohibited. West Rail to be aligned as close as possible to the Light Rail Transit to create a combined transportation corridor where service access and boundary fence can be dual purpose. Refer to **Technical Appendix I** for design of detailed features.
- **Noise** : Noise barrier above eye level should preferably be transparent to allow views, in particular of the Tsui Shing Lao Pagoda. Design in accordance with the system-wide proposals

- **Sites of historic and cultural interest** : Access across Tin Fuk Road to the sites of historic and cultural interest should be maintained (potentially within the station design).
- **Sites of ecological interest** : Disturbance of Sheung Cheung Wai Woodland to be minimised during construction and any restoration should be according to sound ecological guidelines.





4.6.2 Landscape Strategy Proposals: (iv) Hung Tin Road to Hung Shui Kiu

Context

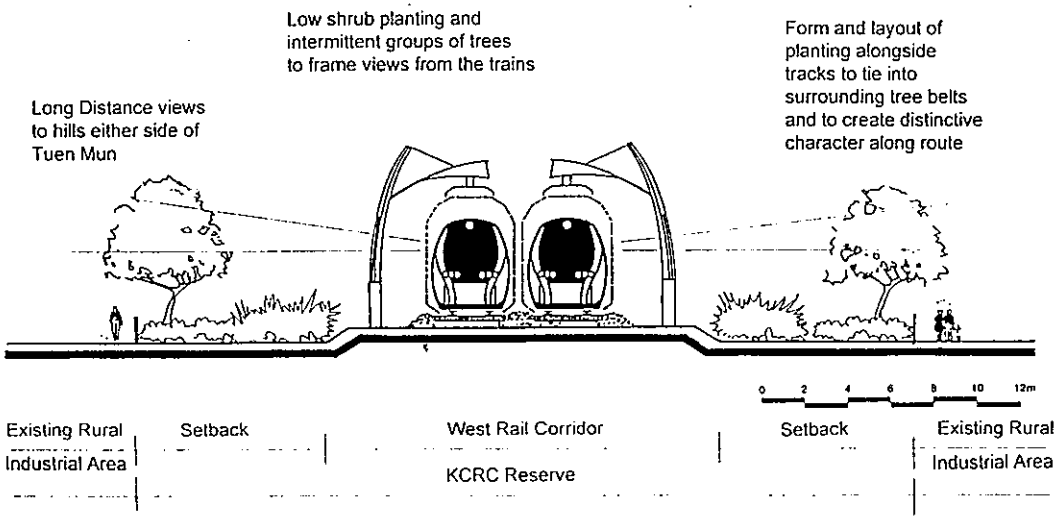
- After crossing Hung Tin Road, West Rail will continue south-west on viaduct, passing over rural industrial areas and Tin Shui Wai Drainage Channel. It will gradually reduce in elevation until it is at grade at Tin Sam, from where it continues on embankment to Hung Shui Kiu.
- The land use along this stretch is a mixture of small industrial holdings, some container storage areas and some farmed land.
- There will be long distance passenger views, mainly in easterly and westerly directions towards the hills on either side of Tuen Mun Valley.

Issues

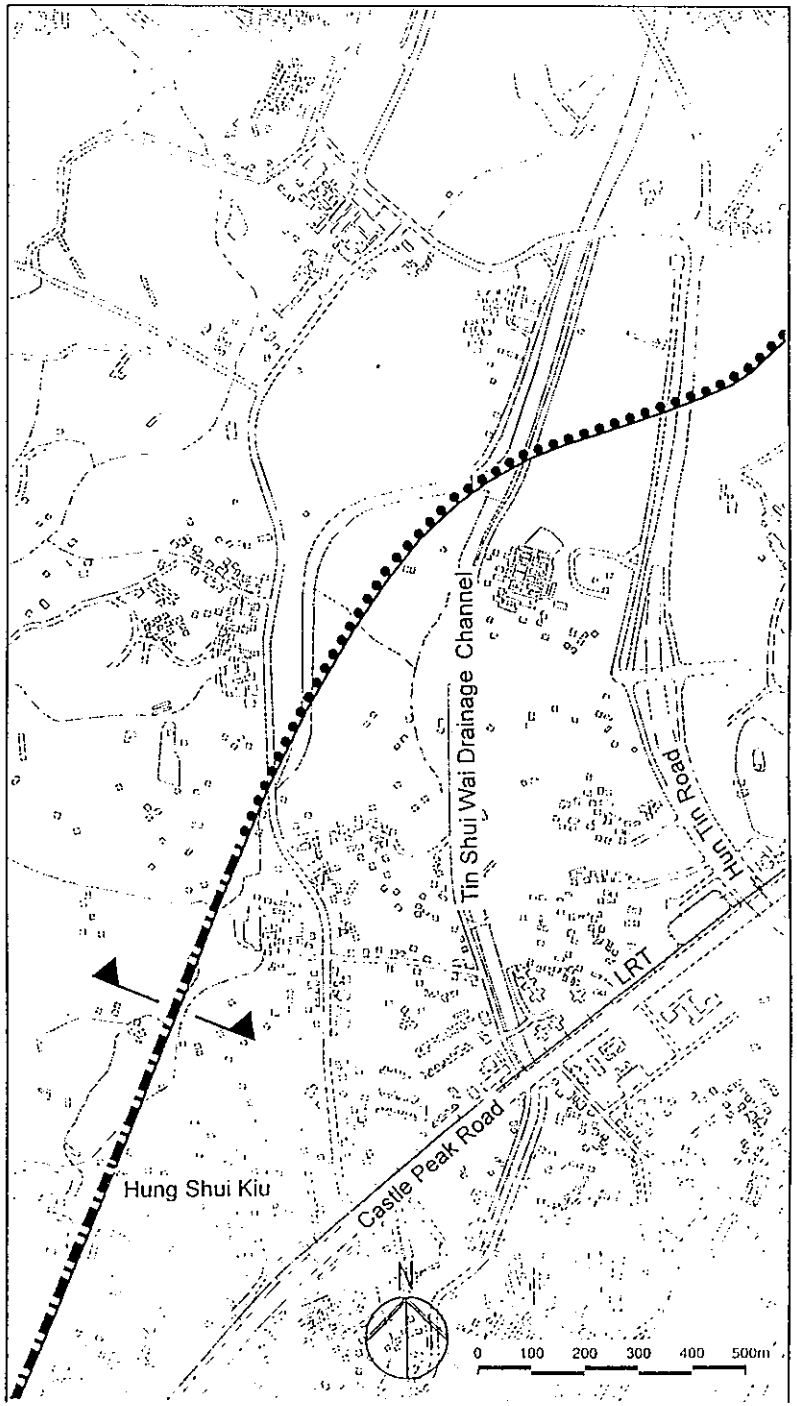
- **Railway corridor** : Land use underneath viaduct. Treatment at ground level where viaduct passes over Tin Shui Wai Drainage Channel and Hung Tin Road.
- **Visual impact** : Appearance of viaduct.
- **Property interfaces** : Access across the railway at grade. Boundary treatment either side of line at grade.
- **Noise** : Noise barriers are likely to be required on this section.

Strategy

- **Railway corridor** : Land under viaduct to be restored to previous land use where possible. Where no permanent land use is identified, land to be planted with trees and shrubs. Embankments to be planted with shrubs and trees with a low canopy level to allow passenger views out. Refer to system-wide proposals and **Technical Appendix It** for planting design.
- **Visual Impact** : The appearance of the viaducts over Tin Shui Wai Drainage Channel and Hung Tin Road should be as described in system-wide proposals.
- **Property interfaces** : Treatment of ground under the viaduct should cause minimal disruption to existing road embankments. Restoration of disturbed earth should be according to Highways Department standards. Vehicular and pedestrian access across at grade sections should be by underpasses rather than bridges to reduce visual intrusion of overhead structures. New fencing to be provided only where access by non KCRC personnel is prohibited. Boundary fence either side of line at grade to prevent access onto the track.
- **Noise** : Noise barriers above eye level preferably to be transparent to maintain passenger views from viaduct and embankments.



KOWLOON - CANTON RAILWAY CORPORATION
WEST RAIL: TS900 EIA STUDY



4.6.2 Landscape Strategy Proposals: (v) Hung Shui Kiu to Tuen Mun North station

Context

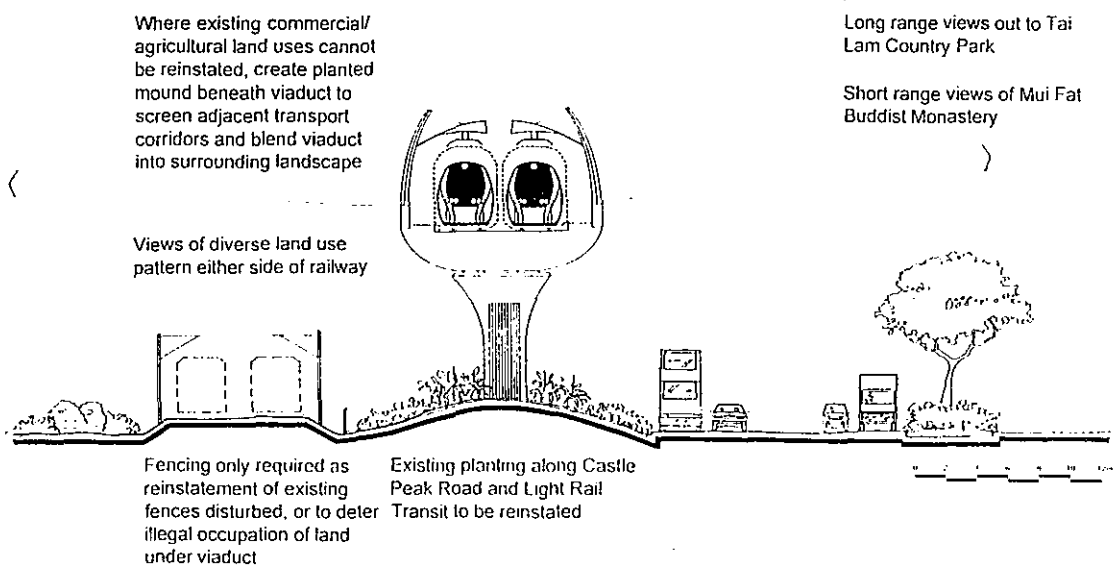
- From Hung Shui Kiu, West Rail will continue south-westwards on low embankment to Lam Tei where it will rise on viaduct before crossing the Tuen Mun River. From here the West Rail continues on viaduct, parallel to Castle Peak Road and the LRT, to Tuen Mun North station, which is located just north of Tuen Mun Hospital.
- The land use either side of the alignment is associated with the adjoining transportation corridor and beyond is mixed semi rural / commercial / industrial in nature.
- There will be long distance views of the hills of Tai Lam Country Park to the south-east and views of Castle Peak to the south-west.
- There will also be a view to the east of Mui Fat Buddhist Monastery, which is a site of historical and cultural interest.

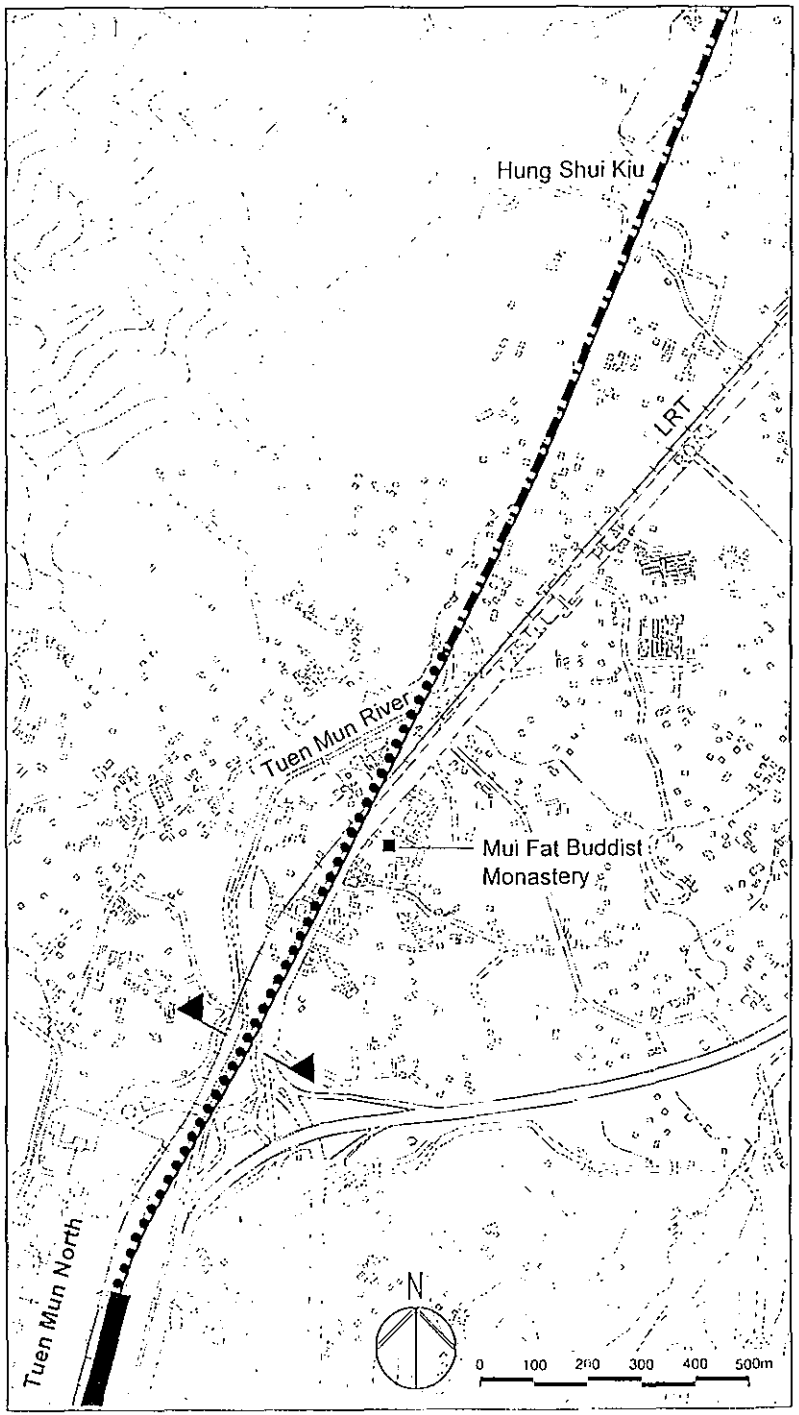
Issues

- **Railway corridor** : Land use underneath viaduct.
- **Visual impact** : Appearance of viaduct, noise barriers and other trackside features.
- **Property interfaces** : Interface with Light Rail Transit, Castle Peak Road transport corridor.
- **Noise** : Noise barriers are likely to be required along this section.

Strategy

- **Railway corridor** : Shade tolerant soft landscape treatment to be incorporated where possible underneath viaducts. Climbing plants on columns. Refer to **Technical Appendix II**.
- **Visual impact** : Appearance of viaduct, noise barrier and trackside features to be as described in system-wide proposals and **Technical Appendix I**.
- **Property interfaces** : Existing highway embankments to be restored to Highways Department requirements. Fencing from adjacent transport corridors to be dual purpose under viaduct. New fencing to be provided where access by non KCRC personnel is prohibited, otherwise KCRC property line to be marked by boundary stones as referred to in system-wide strategy.
- **Noise** : Noise barriers above eye level should preferably be transparent to maintain long distance and local views passenger views.





4.6.2 Landscape Strategy Proposals: (vi) Tuen Mun North station to Tuen Mun River Park

Context

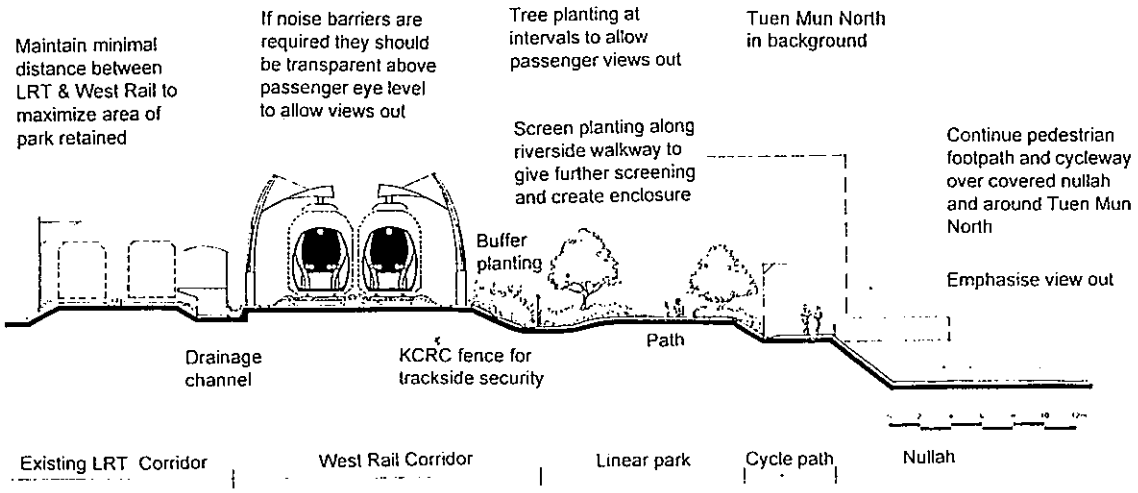
- From Tuen Mun North station, the railway will continue southwards at grade along the west side of Tuen Mun Nullah, under the LRT Bridge and Tin Tsing Road Flyover. It will run within Tuen Mun River Park between the LRT and Tuen Mun River.
- Footpaths and bridges link Tuen Mun Hospital, Affluence Garden and Siu Hong Court residential areas to the Park and to Tuen Mun Road which is on the eastern side of the river.
- There will be long distance passenger views of the hills of Tai Lam Country Park to the south-east of the alignment and views of Castle Peak to the south-west.
- Ching Leung Fat Yuen site of historical and cultural interest lies to the east and will be visible but unaffected by the current proposed alignment.

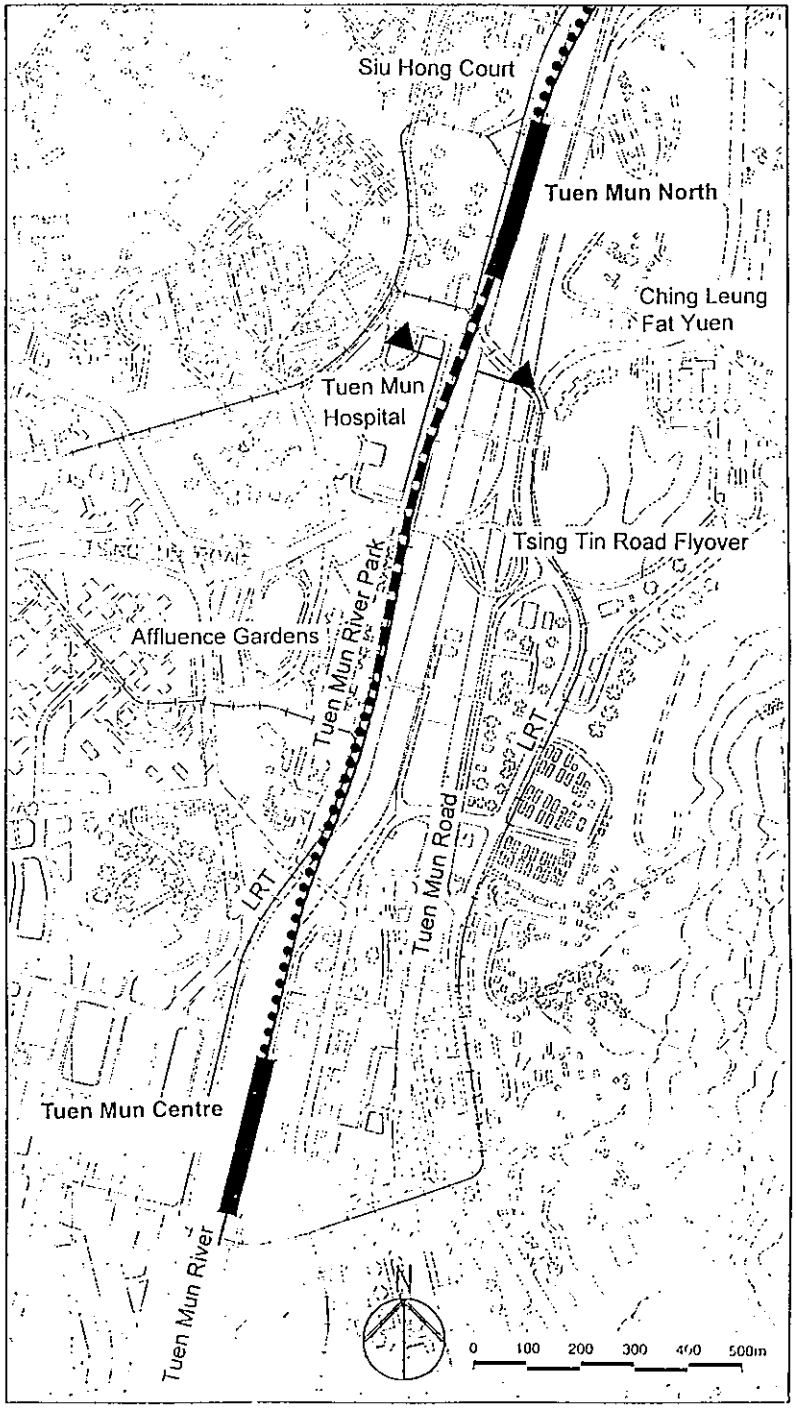
Issues

- **Railway corridor** : The redesign of Tuen Mun River Park and the reprovisioning of park facilities elsewhere if possible.
- **Visual impact** : Visual obstruction to adjacent housing area and hospital caused by viaduct and noise barriers/enclosure.
- **Property interfaces** : Interface with LRT and Tuen Mun River Park. Severance of access across east-west across the Park and disruption and loss of existing Park facilities, particularly play area.
- **Noise** : Noise barriers are likely to be required along this section.

Strategy

- **Railway corridor** : Redesign River Park to include screening of railway along the riverside to create and emphasise views to hillside beyond. Planting, paving surfaces and street furniture to match those of the existing Park where possible. Consider creating a cantilevered walkway at river edge for the reprovisioning of the river edge walkway where disrupted.
- **Property interfaces** : Align West Rail as close as possible to the Light Rail Transit to create one combined at grade transportation corridor where service access, lighting, boundary fence and noise barriers can be dual purpose. (Refer to **Technical Appendix I** for fence design.) Provide pedestrian footbridges or underpasses across the railway to maintain existing links between adjacent land use and the Park. The boundary should be marked with a fence to prevent access onto the track.
- **Visual impact** : Appearance of viaduct, noise barriers and trackside features to be as described in the system-wide proposals and **Technical Appendix I** so as to minimise negative visual impacts on adjacent land uses.
- **Noise** : The noise barrier above eye level should be transparent to maintain passenger views. Refer to system-wide proposals for design.





4.6.2 Landscape Strategy Proposals: (vii) Tuen Mun River Park to Tuen Mun Central station

Context

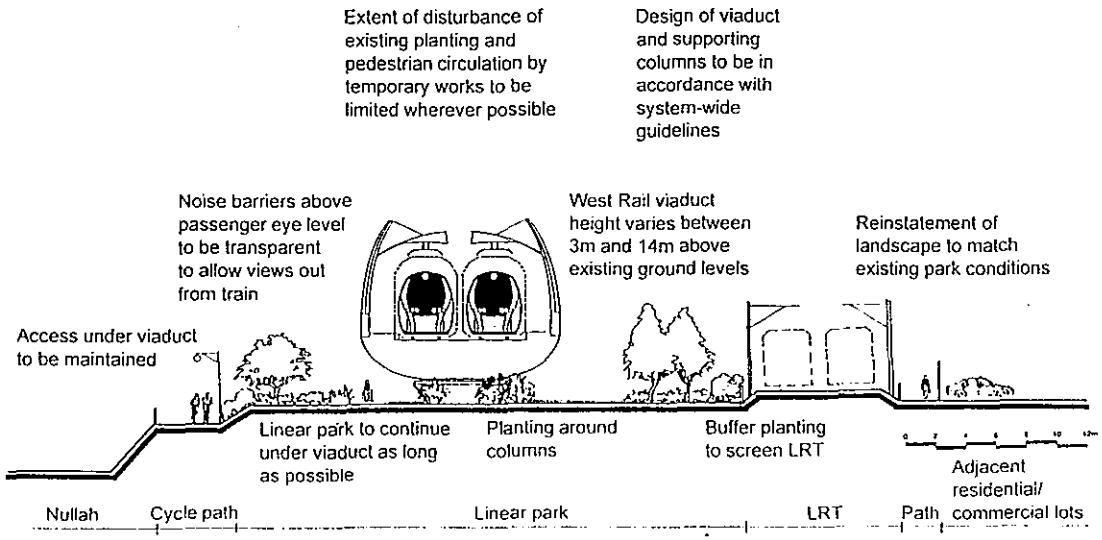
- From the southern end of Tuen Mun River Park, West Rail will rise on viaduct, cross the Tuen Mun River Nullah and enter the proposed Tuen Mun Centre station, located adjacent to San Fat Estate. A short track overrun will extend over Pui To Road.
- The height of the viaduct above existing ground level is not known at this stage.
- Passengers will have views across the river to the existing residential and commercial developments on the river banks.

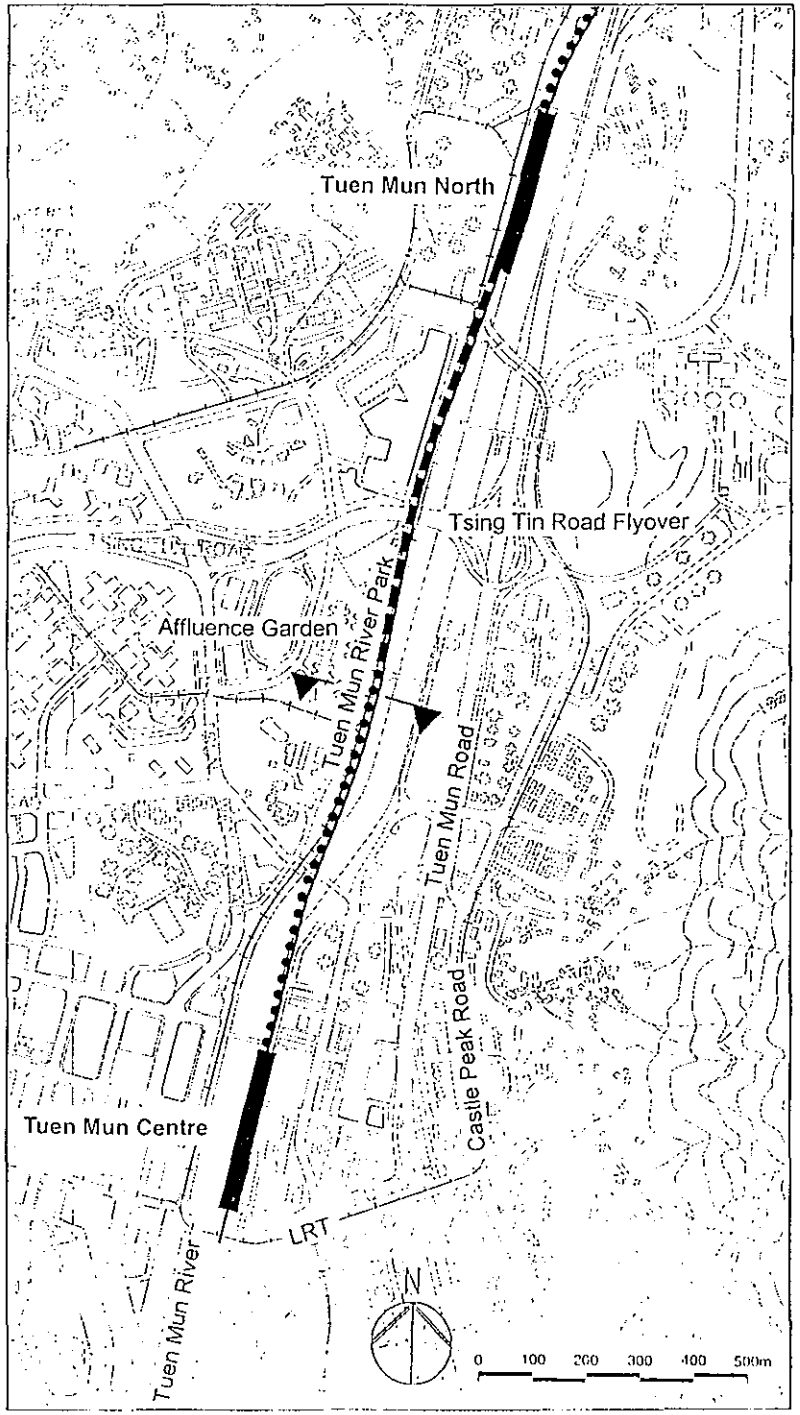
Issues

- **Railway corridor** : Land use underneath viaduct.
- **Visual impact** : Appearance bridge across nullah. Visual obstruction from viaduct and noise barriers/ enclosure to residents on Ho Pong Street.
- **Property interfaces** : Interface with Light Rail Transit. Disruption to footpaths on Ho Pong Street. Disruption to access to sitting out area on Ho Pong Street. Severance of access east-west across the Tuen Mun River Park and disruption and loss of existing Park facilities including play area.

Strategy

- **Railway corridor** : Footpaths to be reprovisioned under viaduct to maintain access to sitting out areas. Opportunity for on-street environmental improvements e.g. up-grading footpath surfaces, planting of street trees and provision of co-ordinated street furniture. Planting under viaduct to be shade tolerant species and to include climbing plants at piers. Planting and maintenance as specified in **Technical Appendix II**.
- **Visual impact** : Appearance of bridge over nullah to be as described in system-wide proposals. Viaduct structure should adopt curvilinear profiles depicted by the "Ovoid Template" described in the system-wide proposals in order to minimise visual impacts adjacent sensitive visual receivers in residential estates.
- **Property interfaces** : West Rail to be aligned as close as possible to the Light Rail Transit to create combined transportation corridor where service access and (preferably) transparent noise barriers can be dual purpose. Refer to system-wide proposals for design of noise barriers. Redesign Tuen Mun River Park to include screening of railway along the riverside and to emphasise views to hillsides. Planting, paving surfaces and street furniture to match those of the existing linear park where possible. Consider creating a cantilevered walkway at river edge to maintain the river edge walkway where disrupted. Provide pedestrian footbridges across the railway to maintain existing links to the Park.





Western Section (TS200) **DESIGN STRATEGY**

LANDSCAPE DESIGN STRATEGY REPORT

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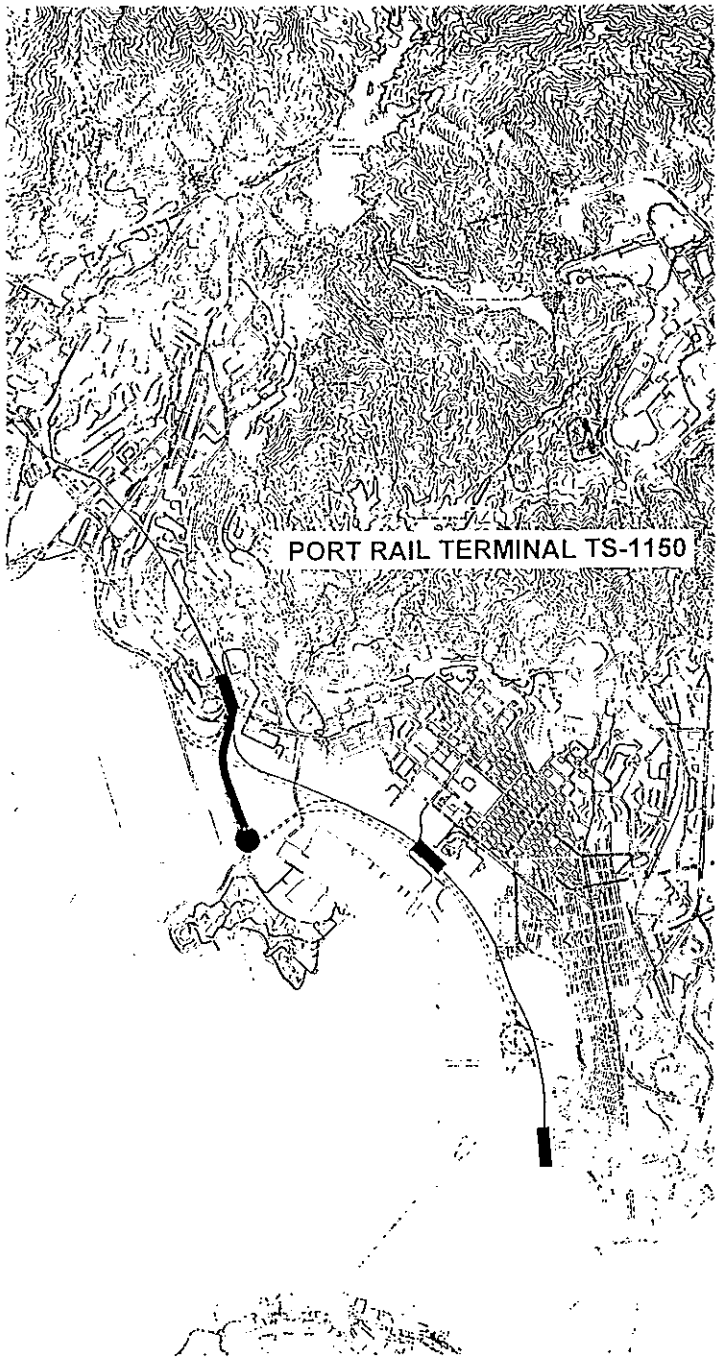
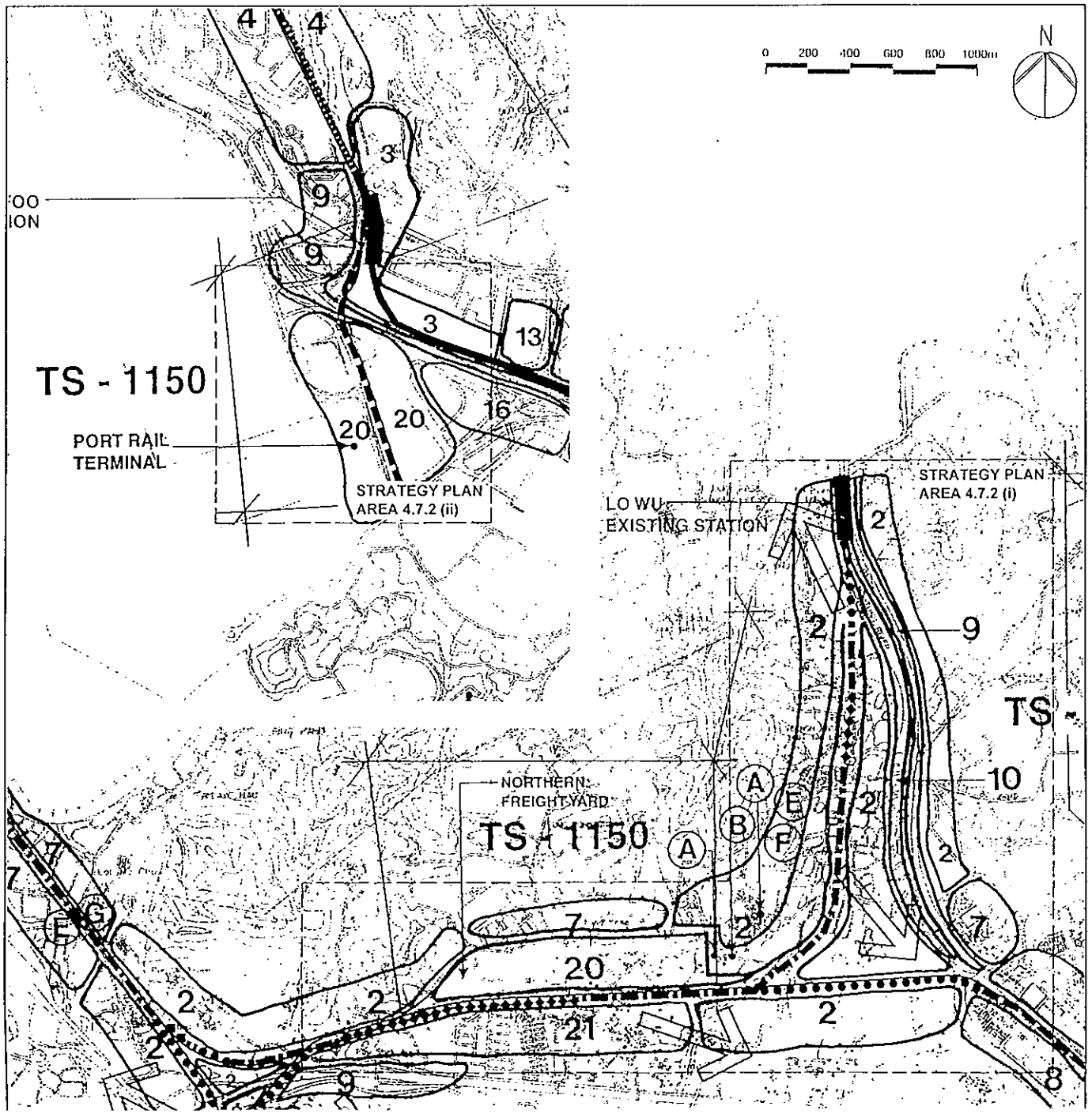


Fig.4F Northern Freight Yard and Port Rail Terminal (TS1150)



EXISTING ADJACENT LANDUSE

1. Urban Residential Area
2. Rural Residential /Farming Area
3. Urban Recreational Area /Public Open Space
4. Rural Recreational Area /Public Open Space
5. Urban Commercial Area
6. Urban Industrial Area
7. Rural Industrial Area
8. Urban Mixed Commercial/Residential Area
9. Transportation Corridor
10. Drainage Channel /River
11. Community Facility (School, Hospital, Bus Station)

PROPOSED ADJACENT LANDUSE

12. Urban Residential Area
13. Urban Recreational Area /Public Open Space
14. Urban Comprehensive Development Area
15. Urban Development Area
16. Urban Development Area-Container Related
17. Urban Development Area-Hotel Site
18. Urban Mixed Commercial /Residential Area
19. Transportation Corridor
20. Freight /Maintenance Yard
21. Committed Residential Development

ROUTE NATURE

- At Grade
- Cut And Cover Tunnel
- Bored Tunnel
- Embankment
- Cutting
- Viaduct
- Station
- 20 Yard / Depot

CULTURAL AND ENVIRONMENTAL SITES

A. Historical /Ancestral Building
B. Temple /Pagoda /Monastery
C. Fung Shui Site
D. Nullah
E. River /Marsh /Fish Pond
F. Egretry
G. Woodland

VIEWS

- Local View
- Distant View

4.7.2 Landscape Strategy Proposals: (i) Northern Freight Yard

Context

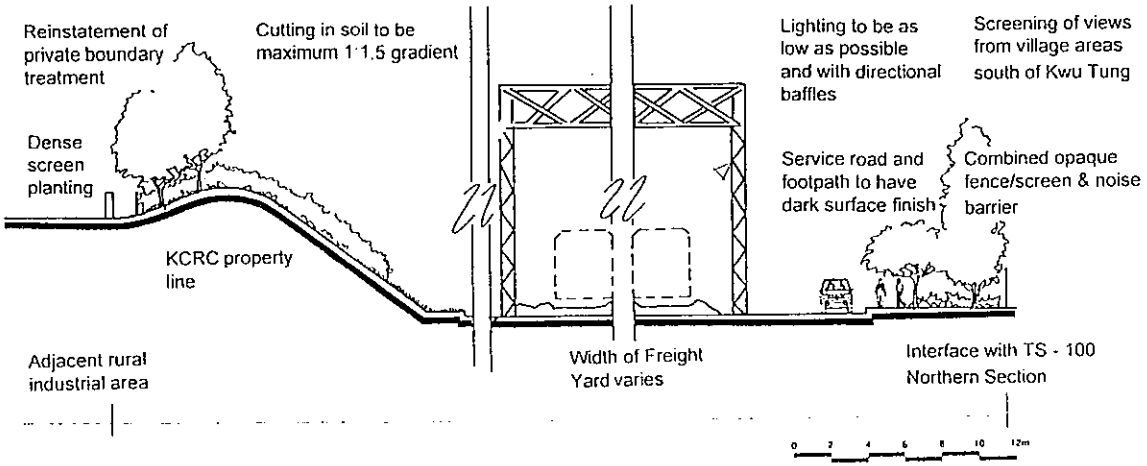
- The tracks of the Northern Freight Yard stretch from Chau Tau to south of Lo Wu at the foot of Ma Tso Lung. The Freight Yard will be in cutting along the northern boundary and on embankment along the southern boundary. The height of embankment and the depth of cuttings are not known at the time of this report.

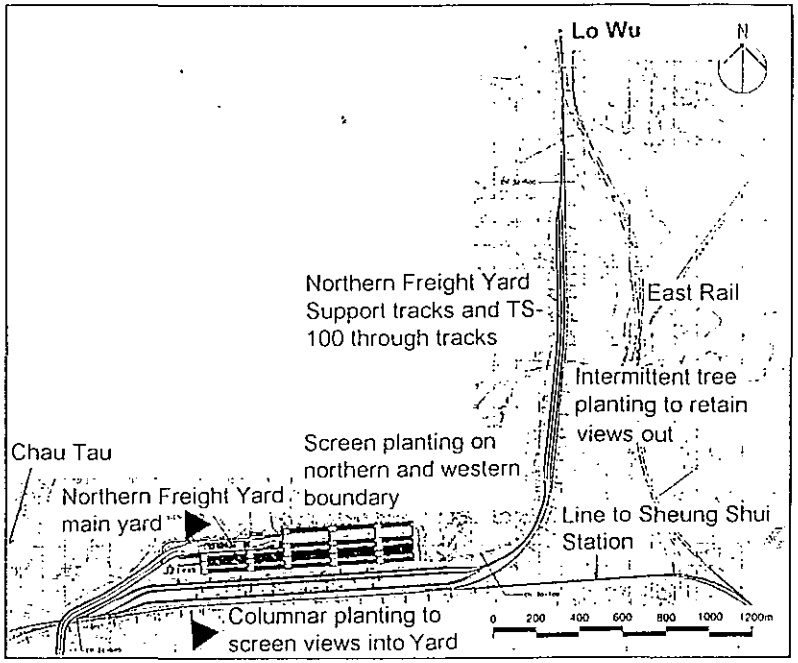
Issues

- **Property interfaces** : Disruption to adjacent farm land. Severance of roads and footpaths across the valley. Disruption to adjacent property boundary.
- **Noise** : Noise barriers are required on eastern side of Yard.
- **Visual impact** : The Yard will be visible from adjacent villages and surrounding hillsides. Location and direction of lighting. Design and appearance of features.
- **Sites of historic and ecological interest** : Hung Shing Temple (AMO Grade 2), Pai Fung Old Temple (AMO Grade 2), and Sin Wai Nunnery (AMO Grade 3), all Sites of Historical and Cultural importance, are located in this area. Ho Sheung Heung egretry and fish ponds (AFD Grade C) are located in this area and may be disrupted by construction of embankment.
- **Surface water** : Proximity to existing surface water regime. Treatment to proposed drainage channels.

Strategy

- **Property Interfaces** : Access to yard to be restricted by fence. Refer to Technical Appendix I for fence design. Private fences to be restored to the previous condition. Severed accesses to be reprovisioned to the west and east ends of the Yard where they are to be located in underpasses beneath the tracks where they are narrowest.
- **Visual impact** : Dense planting on northern and western embankment to screen Yard. Columnar trees to be planted within Yard, (located away from the rail lines for safety) in order to lessen visual impact of Yard when viewed from elevated areas. Footpaths to be of a dark colour to reduce their visibility from surrounding hillside. Lighting columns to be as low as possible and have baffles to reduce over-spill, and to be located only in those areas requiring all night security. Reprovision of severed accesses to be by underpass instead of bridges so as to minimise visual impact.
- **Sites of historic and ecological interest** Disturbance to sites of historical and cultural importance to be minimised and access maintained and reinstated where required. Disturbance to sites of ecological interest to be minimised particularly during construction.
- **Surface water** : Sides and base of any proposed drainage channels to incorporate reinforced grass linings and bio-engineering techniques acceptable to Drainage Services Dept. in order to minimise negative visual impacts.





4.7.2 Landscape Strategy Proposals: (ii) Port Rail Terminal

Context

- The Port Rail Terminal is located within the Kwai Chung Port area and its function will be the transfer of container freight to the West Rail freight trains. Access for freight trains into the Terminal will be by a tunnel under the West Kowloon Expressway and the Lantau and Airport Railway which are located along the north east side of the site.

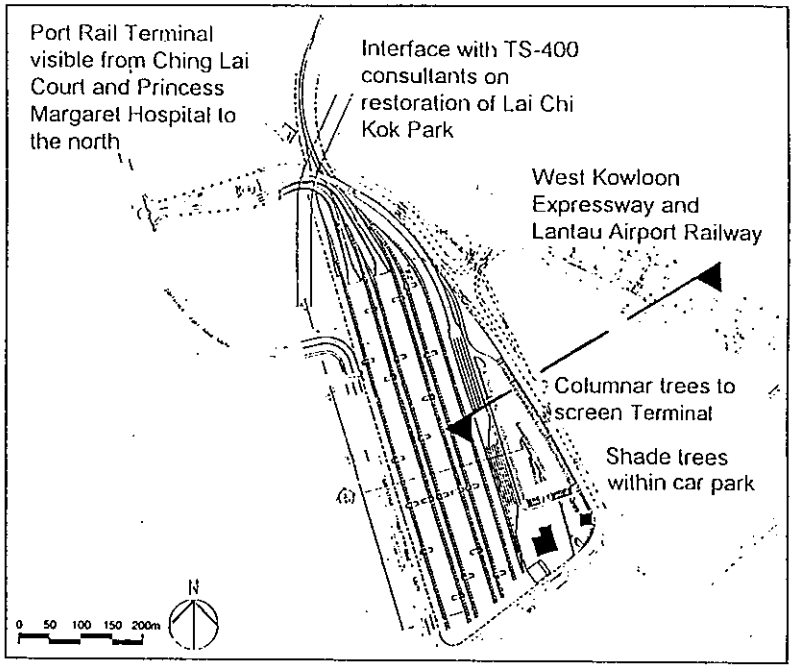
Issues

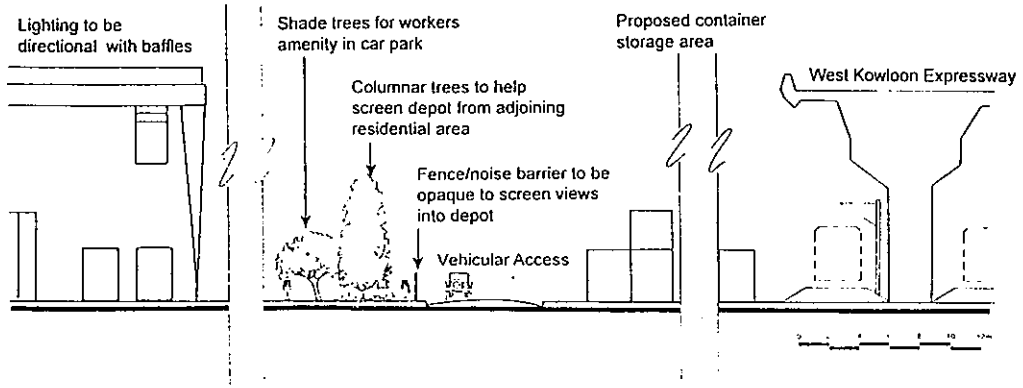
- **Property interfaces** : Interface with adjacent land use at Mei Foo station, Lai Chi Kok Park and freight storage yards.
- **Visual Impact** : The Terminal will be visible from traffic on the West Kowloon Expressway, Mei Foo Sun Chuen, Ching Lai Court and the Princess Margaret Hospital. Appearance of lighting and other trackside features.
- **Noise** : There is no information at the time of the production of this report on the requirements for noise barriers within the Terminal. However operations within the Terminal are likely to continue at night and it is likely that barriers will be required due to the proximity of residential areas.

Strategy

- **Property interfaces** : Restoration of features to Lai Chi Kok Park should be according to the permanent planning requirements of USD. The restoration should maintain the landscape character of the park. Access to Terminal to be restricted by a fence. Refer to Technical Appendix I for fence design.
- **Noise** : Noise barriers, where required, should also act as the perimeter fencing and be designed to conform with the system-wide design. Refer to the system-wide proposals.

- **Visual impact** : Although the West Kowloon Expressway will partially obscure views into the Terminal, columnar trees should be planted within the Terminal, (located away from the rail lines for safety) in order to screen views into the area. Shade trees should be provided within car park areas. Refer to Technical Appendix II for planting design. Lighting columns to be as low as possible and have baffles to reduce over-spill on surrounding area. Lights to be located to relate to those areas requiring all night security. Lighting to be located within the Terminal and not on perimeter. The nature of the trackside features required in the Port Rail Terminal has not been ascertained at the time of this report. However, they should be designed to conform with the design principles embodied in the system-wide proposals.





Annex A - Response to Comments

KOWLOON-CANTON RAILWAY CORPORATION
WEST RAIL
DESIGN REVIEW RECORD

CONTRACT: TS-900 DELIVERABLE: M.3 - Landscape Design Strategy MILESTONE: 3 DCC LOG: TS0900-0012-1__ DATE: Feb 97

CONSULTANT: ERM-Hong Kong TYPE: Report REVISION: - ID NO: PAGE: 1

ITEM NO.	REVIEW BY	DOCUMENT REFERENCE	WEST RAIL COMMENT	CONSULTANT RESPONSE	ACTION (I or D)	DUE DATE	CLOSE DATE
1	AFD, J K Chan	General	We note that the draft Report deals mainly with landscape design issues which included "site of ecological interest" among others in Sections 4.4.2, 4.5.2(iii), (iv), (v), (vi), (vii) & (x), 4.6.2(iii) and 4.7.2(i). As ecological assessment is being carried out for the proposed KCRC West Rail project, it should assess and evaluate ecological impacts and make recommendations to address such impacts including those identified in the above Report. Therefore, the proposed "landscape design strategy" for the above mentioned sections should also be subject to ecological assessment. In this connection, I reserve my comments on the draft Report until findings of ecological assessment is revealed.	Noted.			
2	AFD, J K Chan	General	In the Draft Report, references were made to Appendices I & II which were not included and presumably were still under preparation. Please kindly provide us with a copy each when available.	Noted.			

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ITEM NO.	REVIEW BY	DOCUMENT REFERENCE	WEST RAIL COMMENT	CONSULTANT RESPONSE	ACTION (I or D)	DUE DATE	CLOSE DATE
3	EPD, Vincent Tin	General	Please be advised that the noise reduction performance of the noise barrier/enclosures should not be compromised by aesthetics.	Noted. Please refer to Section 4.1.3 (iii) third bullet point.			
4	EPD, Vincent Tin	General	Please forward a copy of the Technical Appendix 1 as referred to in the above Landscape Design Strategy Report for our reference.	The Appendices will be forwarded when completed.			
5	HyD, Stephen Ching	General	The principles and/or extent for future maintenance responsibility by KCRC/others for soft and hard landscaping works should be identified.	These will be addressed in Technical Appendices I and II of the Landscape Design Strategy Report (LDSR).			
6	HyD, Stephen Ching	General	Would the architectural design of the whole project or only the part related to the highways structures be submitted to ACABAS for approval. Would KCRC and SLA, HyD please advise us accordingly.	It is envisaged that only the viaduct and bridge designs would be submitted to ACABAS for approval.			
7	HyD, Stephen Ching	Content page (page ii)	Appendices I and II have not been included in the Report.	These will be forwarded when completed			

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ITEM NO.	REVIEW BY	DOCUMENT REFERENCE	WEST RAIL COMMENT	CONSULTANT RESPONSE	ACTION (I or D)	DUE DATE	CLOSE DATE
8	HyD, Stephen Ching	Section 2.1 (page 2.01)	Under the caption "Central Section (TS-300)" in the first column, it was mentioned that "From there (i.e. the proposed Tsuen Wan West Station) it will continue underground to the northern end of Tsuen Wan Bay where the railway enters adjacent southern portal of the Tai Lam Country Park Tunnel." Based on the KCRC Full Proposal submitted to Government in November 1995, no such "southern portal" at this location was recommended. Would KCRC please clarify on this issue.	The southern portal will be below ground level and will be entered through a cut and cover tunnel under Castle Peak Road in the northern end of Tuen Wan Bay. The text in section 2.1 was not intended to describe a portal at ground level similar to the Northern Portal. Text will be amended for clarity.			
9	HyD, Stephen Ching	Section 2.1 (page 2.01)	Under the caption "Northern Section (TS-100)" in the second column, it was mentioned that "The other six railway lines will continue north on embankment towards Pok Wai, with an alternating series of noise barriers and enclosures on the east side." Please note that the "six railway lines" referred thereto differ substantially from that shown in the KCRC Full Proposal. Please advise us whether this is the latest proposal of the West Rail project. If not, please amend the text accordingly.	Text will be amended to read 'two railway lines will remain going north....'			

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ITEM NO.	REVIEW BY	DOCUMENT REFERENCE	WEST RAIL COMMENT	CONSULTANT RESPONSE	ACTION (I or D)	DUE DATE	CLOSE DATE
10	HyD, Stephen Ching	Section 2.1 (page 2.01)	It was also mentioned in the last paragraph under the same column that "The alignment will continue in a north-easterly direction parallel to Route 3 running alternately in cutting and on embankment to Chau Tau where the six tracks will split." Please advise us whether "Route 3" should read as "N.T. Circular Road". Please also advise us whether the "six tracks" mentioned therein is the latest proposal of the West Rail project. If not, please revise the text accordingly.	Text will be amended to read "N.T. Circular Road," and reference to "six tracks" will be substituted with "two tracks".			
11	HyD, Stephen Ching	Section 2.1 (page 2.02)	Under the caption "Northern Freight Yard and Port Rail Terminal (TS-1150)" in the first column, it was mentioned that "Within the yard the transfer of containers will take place between double-stack freight trains operated by West Rail and the single level cross-border freight trains." It is our understanding that the need for double-stack freight trains to be operated under the West Rail is still subject to ongoing studies.	Noted. Reference to "double-stack" deleted.			

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ITEM NO.	REVIEW BY	DOCUMENT REFERENCE	WEST RAIL COMMENT	CONSULTANT RESPONSE	ACTION (I or D)	DUE DATE	CLOSE DATE
12	HyD, Stephen Ching	Section 2.2 (page 2.02)	We agreed that if there is view looking out from train, it would then provide a more pleasant ride for the passengers and in turn would enhance the public image of the West Rail. Following this direction, noise barriers lower than 2 m above track level or barriers with transparent panels should be used as far as possible. The planting of trees not to block the view as shown in page 4.05 is a good thinking.	Noted			
13	HyD, Stephen Ching	Figure 2A (page 2.03)	For clarity purposes, legends should be used to differentiate the boundaries of each of the Technical Studies.	Noted and amended accordingly.			
14	HyD, Stephen Ching	Figure 2A (page 2.03) and Figure 2B (page 2.04)	The West Rail alignment leading to Lok Ma Chau (LMC) Terminal and the location of the LMC Terminal shown in these Figures should be in line with that shown on pages 4.29, 4.32, 4.40 and 4.57.	Noted and amended accordingly.			
15	HyD, Stephen Ching	Section 4.1.3 (iv) & (v) (pages 4.06 & 4.07)	Can KCRC identify the extent of the "property line" now for general reference.	The minimum limits of land permanently and temporarily required for the different types of construction is outlined in KCRC's memo dated 28/01/97, Railways Bill and Gazetting Scheme (Ref: 022161).			

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ITEM NO.	REVIEW BY	DOCUMENT REFERENCE	WEST RAIL COMMENT	CONSULTANT RESPONSE	ACTION (I or D)	DUE DATE	CLOSE DATE
16	HyD, Stephen Ching	Section 4.13 (v) (page 4.07)	Under the caption "land use under the viaduct", it is considered necessary for KCRC to put up a firm proposal as early as possible. It is not clear whether only part of the affected areas is temporarily occupied during construction and returned to the owners upon completion of the construction works. If so, it will affect compensation and owners' future development potential. This will in turn affect the land resumption requirements. Therefore, the proposal on "land use under the viaduct" should be firmed up before gazettal of the railway scheme. If agricultural land use is to be reinstated underneath the viaduct, does it mean that the elevated structure together with the foundation are to be allocated to KCRC while the land below could be allocated/leased to others. Would KCRC please clarify on this issue in consultation with Lands Department.	It is recommended that all land required for the railway is permanently gazetted as KCRC land. Land under viaduct could be used for a range of uses: open space, amenity or utility. It is possible that the land could be leased back to former tenant if appropriate or to another tenant for a landuse compatible to adjacent land. All private land under viaducts will need to be resumed and vested to the Corporation. Land will be released for appropriate use in a controlled manner by the KCRC. This use may require town planning board approval. It is inappropriate to determine the eventual user at the time of gazettal as it will generally be some years later before the land can be released after construction. The use after construction has been completed will need to be compatible with the adjoining land uses, the access and maintenance requirement of the KCRC, the need to ensure that the structural integrity of the viaducts is protected and the operation of the railway is not adversely affected.			

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ITEM NO.	REVIEW BY	DOCUMENT REFERENCE	WEST RAIL COMMENT	CONSULTANT RESPONSE	ACTION (I or D)	DUE DATE	CLOSE DATE
17	HyD, Stephen Ching	Section 4.2.2 (iii) (page 4.15)	Integration of the West Rail Mei Foo Station with the Lai Chi Kok (LCK) Park as well as the passageway (if footbridge) connecting the West Rail station and the MTR station should be properly addressed in order that proper soft and hard landscaping works, including LCK park facilities, could be well planned in the locality.	This is currently being addressed by the TS-300 and TS-400 consultants			
18	HyD, Stephen Ching	Figure 4D (page 4.29)	TS-100 for the Northern Section does include the section of the branch line from the main line at Au Tau to the east wall of Yuen Long Station. Therefore, this section should also be marked in "bold".	Noted and amended accordingly			
19	HyD, Stephen Ching	Figure 4E (page 4.45)	TS-200 for the Western Section does not include the section of the branch line from the main line at Au Tau to the east wall of Yuen Long Station. Therefore, this section should not be marked in "bold".	Noted and amended accordingly			
20	JS	p. 4.06,4.09	The illustrations indicate a proposal for "feathering" the edges of cuts - this may require extra land, and should be plotted and forwarded to AEMs for inclusion in gazettal plans.	TS-100 and TS-200 engineers to note.			
21	JS	p. 4.43	Footpaths may also require more land.	Noted			

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ITEM NO.	REVIEW BY	DOCUMENT REFERENCE	WEST RAIL COMMENT	CONSULTANT RESPONSE	ACTION (I or D)	DUE DATE	CLOSE DATE
22	JS	General	Other land implications include berming, feathering, or riprapping around tunnel portals. In addition, any mitigating buffer zones, such as NFY, should be identified, mapped, and quantified in this phase.	The TS engineering consultants should assess the detailed land implications within their Technical Study areas.			
23	JS	p. 4.07	Land under viaducts will belong to KCRC, but may be fenced unless the recommendations of this report are incorporated in engineering plans.	Noted			
24	JS	General	- a plant nursery may be required; a location should be recommended for incorporation in gazettal plans.	Ma On Kong Valley has the best environmental conditions for a plant nursery in the NT.			
25	JS	General	The ovoid concept is interesting and should be pursued with TS consultants in the northern area	Noted. A Task Force has been set up to address this issue.			
26	JS	General	Positive benefits of architectural lighting of engineering structures should be discussed.	Architectural Feature lighting would be of benefit in stations and around station entrances, where particular architectural elements or design themes are desired to be emphasised. Elsewhere it is likely that the visual impact of West Rail should be played down and therefore architectural feature lighting is not appropriate in these locations.			

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ITEM NO.	REVIEW BY	DOCUMENT REFERENCE	WEST RAIL COMMENT	CONSULTANT RESPONSE	ACTION (I or D)	DUE DATE	CLOSE DATE
27	ROS-MB,CB, RN,JRC, BM	General	Ovoid form is good. Provide locations where this concept is currently being used or proposed. What are the cost /design implications?	KCRC chief architect Mr Robert Kennan has illustrations of similar concepts applied to railway design in Singapore and Malaysia. Cost /design implications will need to be addressed by TS engineers.			
28	ROS-MB,JRC, BM,*RN,*	General	Ovoid mast design may be difficult and expensive. *TS-1400 would need to review and provide design feasibility and cost trend, if applicable. Also, tunnel and station areas would probably use standard OHV design and exterior would use ovoid OHV design. Thus, essentially two designs will be required.*	Manufacture of large quantities of the ovoid masts should reduce costs.			
29	ROS-MB,*PC*	General	Where we have plants---we need water. Irrigation plan may require a cost trend and sources of water supply to be identified. *I am not sure we should have plants growing over structures and rock faces. They will obstruct inspection and maintenance.*	This issue will be addressed in detail in Technical Appendix II. However the majority of planting proposed will not require artificial irrigation after the initial establishment period. Generally only ornamental species or planting in raised planters in urban areas will require long term artificial irrigation. The general maintenance requirements of all engineering structures will be considered when specifying planting.			
30	ROS-BM	General	In station areas integrate catenary with station fixings/support. Use glass versus porcelain and kevlar ropes versus wire.	Noted and agreed.			

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ITEM NO.	REVIEW BY	DOCUMENT REFERENCE	WEST RAIL COMMENT	CONSULTANT RESPONSE	ACTION (I or D)	DUE DATE	CLOSE DATE
31	ROS-PC	General	Modern rolling stock is much quieter than older stock. Do we need to spend huge amounts of money on noise barriers? Can we get an exemption from government regulations? How about visual intrusion of barriers?	Noise levels are bounded by statutory requirements as stated in the Noise Control Ordinance and its respective technical memoranda. Where the EIA indicate a potential exceedance of the noise limits, mitigation measures (e.g. noise barriers) will need to be adopted. This being the case, exemptions cannot be obtained and the costs will need to be accounted for. Whilst noise barriers can be visually intrusive, there are currently no statutory requirements. However, they can be designed to minimise the potential visual impact (see 4.1.3).			

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ITEM NO.	REVIEW BY	DOCUMENT REFERENCE	WEST RAIL COMMENT	CONSULTANT RESPONSE	ACTION (I or D)	DUE DATE	CLOSE DATE
32	ROS-PC,*RN*	General	How long is the transparent noise barrier expected to stay transparent and who is going to clean it? Will it withstand typhoon conditions? *Both sides of the transparent glass (or plastic) will need to be cleaned. Special cleaning and maintenance provisions will be required over viaducts -- especially for exterior cleaning.*	Transparent noise barriers should be cleaned on an 'as-need-basis' using high pressure water jets. Cleaning should be carried out by KCRC maintenance depts. and access onto elevated structures for all maintenance activities should be considered by the TS engineering consultants. The frequency of maintenance visits for railway noise barriers will be less than for roads as there will be less particulate from trains compared to that generated by vehicular traffic. Highways Dept. have experience cleaning transparent noise barriers and problems have been addressed in the past for the following transparent barriers: the Airport Noise Barrier on the approach to Tates Cairn Tunnel, Ho Tung Lai curved noise barrier and Ma On Shan Road noise barrier. We understand that Ma On Shan Road transparent noise barrier has not required cleaning in the 5 years since it was put in place. The design of noise barriers must be in accordance with Hong Kong Standards to withstand typhoon conditions.			

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ITEM NO.	REVIEW BY	DOCUMENT REFERENCE	WEST RAIL COMMENT	CONSULTANT RESPONSE	ACTION (I or D)	DUE DATE	CLOSE DATE
33	ROS-PC	General	As most of the noise comes from the wheels, surely we only need to screen up to floor level unless there is a specific problem because of tall buildings.	For electric trains noise comes mostly from wheels. However our previous experiences in the Territory indicates that screening up to floor level will not be sufficient and lengths of high noise barriers would be required, possibly including noise enclosures at areas with high rise buildings such as at Tuen Mun and Yuen Long town centre.			
34	ROS-PC	General	Noise screens must not restrict the ability of staff to stand in a safe place as a train passes.	The design and positioning of noise screens must be approved by KCRC safety officers.			
35	ROS-PC	General	If a train has to evacuate in the open, how do the passengers get past the noise screens? Will they be set back from the tracks?	As item 34			
36	ROS-MB	General	Maurice O'Brien, KCRC ER, Sr Mgr Infastructure will need to review for plants.	Noted			

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ITEM NO.	REVIEW BY	DOCUMENT REFERENCE	WEST RAIL COMMENT	CONSULTANT RESPONSE	ACTION (I or D)	DUE DATE	CLOSE DATE
39	ROS-GHH	General:	There are numerous statements that "embankments over X metres high" should be changed to viaduct to save land. Yet a look at the plan and profile does not indicate the existence of any, or if some, no significant length of such embankments.	At the time of compiling the Report precise engineering details of certain sections of the alignment were not available and heights of embankment unknown or imprecise. The recommendations on the use of viaduct instead of embankment are intended to influence decisions which have not been finalised in order to minimise potential impacts of very high embankments.			
40	ROS-GHH	2.1	Seems to virtually postulate noise barriers everywhere. This seems excessive. Agree that using a standard noise barrier design along the edge of viaducts regardless of calculated need is a good idea, but not so when at grade. There should be specific calculations of impacts on receptors or groups of receptors before saying noise barriers virtually throughout. The need appears particularly unlikely in such areas as NFY to Lo Wu, for example.	It is not the purpose of the LDSR to propose the extent of noise barriers. The extent of noise barriers will be determined a separate exercise within TS-900. The information in the LDSR pertaining to the extent of the noise barriers was based on a provisional noise assessment.			
41	ROS-CB	2.1	Revise "cross border freight trains" to "MOR freight trains". WR refers to "cross border" for passenger trains only.	Noted and amended accordingly.			

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ITEM NO.	REVIEW BY	DOCUMENT REFERENCE	WEST RAIL COMMENT	CONSULTANT RESPONSE	ACTION (I or D)	DUE DATE	CLOSE DATE
37	ROS-PB	General	Passenger Visibility: Passenger views in the approximately 19 km of tunnel will be restricted and at speeds of 130 km. Outside the tunnels passengers will sit with their backs to one window and their view visibility will be restricted to viewing between other passengers sitting on the opposite seats and whatever landscape is available, assuming that standing passengers do not further block that view.	Point noted but views from standing passengers who will form the majority of the passengers in domestic trains should also be considered. We consider that even a restricted view from the train is valuable and will significantly enhance the passenger experience of West Rail. For example the MTR passenger experience (in a seat type arrangement similar to that proposed for West Rail) is much enhanced when the MTR is above ground with views, even if passenger conditions in the train are congested.			
38	ROS-MB	p 4.07	Self clinging plants on viaduct columns ...like Singapore looks good but, are light and water requirements considered.	It is possible to select self-clinging climbers which will survive and thrive in the conditions found under viaducts. Artificial irrigation may be required under low viaducts where rain penetration is low. This would be considered at detailed design stage.			

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ITEM NO.	REVIEW BY	DOCUMENT REFERENCE	WEST RAIL COMMENT	CONSULTANT RESPONSE	ACTION (I or D)	DUE DATE	CLOSE DATE
42	ROS-JRC	2.1	It appears that the assessment has been done on the DFS alignment. The key differences now are: - Depot is constructed on both sides (ie East and West of the main line. - Kam Tin has been moved eastwards, which changes its position relative to villages. - The route between KAT and YUL is substantially different, and runs between the Small Traders Village and the hospital. - The route between TIS and TMN has changed substantially.	Noted and amended accordingly.			
43	ROS-GHH	2.2	Why barriers at Kam Tin Station high enough to obstruct the view? Why high noise barriers over Kam Tin Road?	Passenger view to the north from the train will be obstructed by the station itself. There may be requirement for high noise barriers for the stretch of the railway in this area, not just over Kam Tin Road. Text clarified.			

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ITEM NO.	REVIEW BY	DOCUMENT REFERENCE	WEST RAIL COMMENT	CONSULTANT RESPONSE	ACTION (I or D)	DUE DATE	CLOSE DATE
44	ROS-RN	Page 4.04	If enclosed noise barriers attenuate radio signals a radio/antenna system may be required at additional cost. Enclosed noise barriers will require design study/considerations for radio, signalling (by radio), commercial cellular PCS/PCN applications. TS-1500 systems including SCADA , FOTS and telephone may also be required. Enclosed noise barriers longer than the length of the train may require expensive solutions. TS-1500 could require a trend estimate for design/implementation in applicable areas.	Noted.			
45	ROS-RN	Page 4.04	Enclosed noise barriers will require study by TS-1000 for safety issues. Some noise barrier enclosures may require ventilation studies dependant upon length.	Noted			
46	ROS-RN	Page 4.04	Enclosed noise barriers may require lighting for night operation. Lighting would also be required if barriers are not windowed or transparent as may be required to achieve noise level requirements.	Noted			

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ITEM NO.	REVIEW BY	DOCUMENT REFERENCE	WEST RAIL COMMENT	CONSULTANT RESPONSE	ACTION (I or D)	DUE DATE	CLOSE DATE
47	ROS-RN	Page 4.04	Provide typical noise profile diagrams for both ovoid noise barriers and enclosures. Include typical dimensions, dB/distance estimate profile, thickness of noise barriers and enclosures including types of materials. ROM cost estimates if known. Dimensions required to determine viaduct sizing, structural requirements including clearance requirements for any walkways, cable ways, ...etc. Provide examples where similar designs are being used or proposed.	Noise attenuation performance assumptions for barriers, and enclosures if required, are in the process of agreement with Environmental Protection Department. The requested information will be provided at a later stage of the EIA.			
48	ROS-JRC	4.1	Much can be done to improve the aesthetics by greater integration of all the structures, ie viaduct, noise barriers and OLE than is typical. This requires considerable engineering and co-ordination. It is this aspect that generally leads to the OLE, barriers looking like an add on. Concentrating on this may give most result for least cost (80/20 rule).	Noted			
49	ROS-GHH	4.1.1	Overhead mast scheme looks similar to French design of the 1920's.	Noted			
50	ROS-GHH	4.1.1	Structural cross section in the "ovoid" design concept needs to be co-ordinated with the structural/traction power group as the current preliminary structure design uses conventional design.	Noted			

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51	ROS-GHH	4.1.2	If the platform canopy is actually going to come out high enough to be in the "ovoid" arch of the catenary mast, it should extend far enough to shelter the side of the train at least. On of the most aggravating things to a regular rider is a gap between platform and train such that you are certain to get wet during rainfall.	Noted and agreed. Platform canopy design as part of the station will be carried out by the TS consultants. Conceptual sketch in the LDSR will be amended as per comments.			
52	ROS-GHH	4.1.3 (l)	Generally the components of the OHL system are manufactured components, which do not come in curved versions. Regular spacing is nice, but electrical requirements must govern. While MTR and KCRC both use steel masts, the possibility of prestressed concrete poles should be considered. They do not require painting ever. Galvanising turns rusty looking itself, and has a finite life. If connected at the top to make a logical arch as the old French system, it might look good, but in reality, the bent pole may just look odd, and after a few years, faddish, like a beehive hairdo.	Noted. The curved catenary mast is part of the concept to integrate all trackside features into one design element. The introduction of curved elements (to whatever exact profile) lends a softer, less intrusive feel when compared to sharp irregular elements. This has a significant role to play in minimising visual impact of structures.			

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53	ROS-GHH	4.1.3 (II)	Noise barrier posts? Suggest a no post version. Have plans of a viaduct edge noise barrier that has no posts. The shape of the barrier should be irregular in one section direction at least to break up reflections. To the greatest possible extent barriers should be kept to bottom of train window level and lower. Since most noise is wheel - rail and under floor, this is usually quite effective.	A post of some sort will be needed to support the noise barrier. However it is agreed that these should be designed to blend with the overall barrier profile. The noise barrier posts can be curved to match the barrier profile e.g. Plexiglass propriety noise barrier system.			
54	ROS-GHH	4.1.3 (III) Hard Landscape Treatment	It is likely that the maximum height of embankment will be much less than 10 meters, except in isolated locations. To save land takes, slope protection allowing much steeper slopes than 2:1 may be required. Concrete at grade, I. e. ditches walks, etc., darkens over time anyway. No need to colorize..	Slopes may be steeper than 1 in 2 but should not be steeper than 1 in 1.5 as it will not be practical to plant slopes steeper than this. The use of coloured concrete for ditches and splash paths is used commonly in Hong Kong by Highways Dept. because it is an environmental improvement. Concrete takes several years to darken to the point where it blends in with the slope and in the mean time causes considerable visual intrusion.			

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55	ROS-GHH	4.1.3 (III) Soft Landscape Treatment	Height and nature of fence is a security and safety issue. Landscaping to determine from those Consultants what it will be and accommodate. Trees grow. Also: on the verge between track and top of embankment: NO VEGETATION This should be an extended subballast shoulder. In other words, an exposed aggregate surface. Beyond station areas and other areas of high visibility to the public, there should be no shrubs near the tops of embankments or bottom of cuttings owing to the potential for roots from trees growing on slopes to pass under the tracks or to grow to the extent that they impinge on the tracks. Using species with known growth and ultimate height as indicated in the proposal is OK	Noted. Engineering consultants to advise where fence is a security/ safety issue for incorporation in Final LDSR. Noted ROS-GHH Please clarify why beyond station areas and other areas of high visibility to the public, there should be no shrubs near the tops of embankments or bottom of cuttings?			

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56	ROS-GHH	4.1.3 (IV) Hard Landscape Treatment	1 in 1.5 is quite steep for soil, and in many soils is at the borderline of stability. Soils engineers to advise proper slopes based on the characteristics of the specific soils involved. Netting or rock fences should be selected based on the anticipated nature of the rock falls. Both should be highly visible for safety to facilitate quick inspection for breaks. Sprayed concrete may not be pretty, but it is effective, and should not be prohibited. There is nothing as ugly as pulling mangled bodies out of a train wreck after it has hit a large rock.	Noted. Slope profiles have been recommended to support comprehensive planting proposals and to minimise overall landtake. Agreed that safety is paramount. However sprayed concrete should be avoided by careful consideration of alternative engineering solutions(netting or rockfence) that meet required safety standards and that do not create an adverse visual impact.			
57	ROS-GHH	4.1.3 (IV) Soft Landscape Treatment	If self climbing plants are used on the lower section of rock slope, cut face needs to be set back due to area of growth, potential additional rock falls due to the effect of roots breaking up the rock. No vegetation on the verge. No shrubs on lower slopes of cuttings except in areas near stations or areas of high public visibility.	Noted			

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58	ROS-GHH	4.1.3 (V) Hard Landscape Treatment	Agree, large radius curves, both horizontally and vertically are to be used in so far as practical. Convey to the TS consultants on their alignment. Same for issue of clutter with pipes and cable. But, shape of viaduct cross section may be beyond landscaper's control.	Shape of viaduct cross section is a recommendation based on the design of all trackside elements as one integral feature. Exact shape to be determined by TS-3000, TS-100 and TS-200 consultants.			
59	ROS-GHH	4.1.3 (V) Soft Landscape Treatment	Self climbing plant should depend upon surrounding land use, and not be universal	Agreed that the use of climbing plants will relate to visual impact of elevated structure within surrounding environment and landuse.			
60	ROS-GHH	4.1.3 (V) Land use under viaduct	See previous comment on fence height. Why the concrete pads around base? This seems unusual, even where no vegetation is planned. Suggest that trees and shrubs should be off to the sides, not directly under the viaduct	Reference to concrete 'pads' will be deleted. Where sufficient headroom allows, planting is recommended under elevated structure to avoid area being used for illegal occupation, storage or flytipping.			
61	ROS-GHH	4.1.3 (VI) Bridges	See viaduct comments				
62	ROS-GHH	4.1.3 (XI)	This is too much. These items must be sited based on function. Most are relatively small anyway.	Noted . It is not intended that the siting of features ignores function. Text will be clarified.			
63	ROS-MB	4.3.2 p 4.20-22	Show typical emergency exit(s) from tunnel to park and typical landscaping.	This will be dealt with by TS-400 consultants.			
64	ROS-MB	4.3.2 p 4.23	Tai Lam North Portal-- create more of a picture or blend in.	Illustration will be amended accordingly.			

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65	ROS-GHH	4.3.2 (I)	It is thought that there will be no usable space between the freight line and Ching Cheung Road. Freight line may be open at top.	We are currently waiting for information on the alignment from TS-1150 and TS-300 consultants. The strong likelihood is that the freight line will be covered due to the need for reprovision of Lai Chi Kok Park facilities.			
66	ROS-GHH	4.3.2 (IV) Tai Lam Tunnel portal area	Top of rail at portal is essentially at grade. No embankment. There are numerous graves on the hillside in the near vicinity of the portal. Plantings must respect these sites. Vent building siting because of above will be difficult, and may not be able to be set into hillside.	Noted.			
67	ROS-GHH	4.4.2 Depot Issues	There is no space between depot and main tracks for trees. Also, the entire area may be covered by a podium for property development. There is a major river retraining under way in this area at this time. The West Rail effects on the overall hydraulic regime of the area is minimal compared to that.	No information has been passed from TS-600 engineers on any proposals including a podium development over the Depot.			

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68	ROS-GHH	4.4.2 Depot Strategy	Nothing to screen on the west except route 3 which is at a significantly higher elevation. Underpasses, except pedestrian underpasses for access are impractical due to the elevation of watercourses in the area. Totally unfeasible to fill area of depot to sufficient elevation to permit roads under. Noise barriers should be to bottom of window level or lower, as currently are receptors, except highway route 3 which will be at equal or lower elevations than the depot itself.	Initial proposals for Depot included workshops 15m in height which would require screening from surrounding landscape. Elevated roads and footpaths over Depot will have a high visual impact. Noted.			
69	ROS-GHH	4.5.2 Kam Tin to Au Tau	Embankment may be lowered due to revised (lowered) floodwater elevations due to river retraining.	Noted			
70	ROS-MB	4.6.2 P 4-49 to 55	Shows single viaduct but, what happens when 2 tracks diverge for island platforms. Same principles could apply but ???? 6.50 LOP/TIS	No information was available for the Report on tracks diverging for island platforms. The detailed design to be developed by TS-300, TS-100 and TS-200 consultants.			

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71	ROS-CB,GHH, *RN*	4.7.2	Type and location of landscaping in PRT will need to be reviewed closely. *Over 200 lorries will move between PRT and the various MCT's. Multiple gantry crane movements in the PRT, CCTV, and security surveillance requirements will need to be co-ordinated with TS-1150 and TS-1500 to preclude visual obstructions by landscaping.* *A similar landscape approach applies to NFY owing to intense gantry crane, yard hostlers, rail movements including CCTV surveillance requirements*	Noted. The timing of the LDSR has been programmed so that issues relating to landscape and visual impact can be discussed and allowed for in the detailed engineering design of the railway alignment and of the layouts for NFY and PRT.			
72	ROS-RN	Page 4.56	Page is blank (missing or revise # sequence). # skips from 4-55 to 4-57.	Noted and amended accordingly.			
73	LP	p. ii, Fig. 4F	"Port Rail Depot" should be changed to "Port Rail Terminal".	Noted and amended accordingly.			
74	LP	p. 2.01	For the Southern Section, the wordings "entirely in cut-and-cover tunnel" does not fully reflect the accuracy of the construction method for the whole alignment. For example, it has been proposed that bored tunnel method be used under Cherry Street underpass (ref: DCR - Cherry Street Underpass Tunnel). It is also recommended that the descriptions be more elaborate to distinguish between cut-and-cover and at-grade enclosed box tunnel.	Noted and amended accordingly.			

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75	LP	p. 2.01	For the Central Section, 2nd paragraph, "It will enter rock tunnel under the high rock plateau between Has Kwai Chung and Hing Shing Road" is not entirely accurate. The railway goes into cut-and-cover tunnel under Kwai Fuk Road before reverting back to bored tunnel adjacent to Hing Shing Road. It is also recommended that the descriptions be more elaborate to distinguish the sections of bored and cut-and-cover tunnel.	Noted and amended accordingly.			
76	LP	p. 2.01	For the Central Section, last paragraph, please re-word to "From there it will continue underground along the shoreline east of Tsuen Wan Bay where the railway will proceed north entering the adjacent..."	Noted and amended accordingly.			
77	LP	p. 2.02	**No Views from the Train** Please make the changes to the sentence: ...the railway will be either in "enclosed box", cut and cover or "bored" tunnel.	Noted and amended accordingly.			
78	LP	p. 2.02	The correct word is "Terminal" in "West Kowloon Passenger Terminus".	Noted and amended accordingly.			
79	LP	p. 2.05	**Views in the Southern and Central Section** In the 1st paragraph, please include at-grade enclosed box tunnel which will be appropriately landscaped to integrate with the surroundings.	Noted and amended accordingly.			

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80	LP	p. 4.13, Context, 1st point	It should be noted that the Cherry Street Underpass may be in bored tunnel as was proposed (see above ref.).	TS-400 engineers to advise if there is a section of bored tunnel.			
81	LP	p. 4.14 & 4.15, Context, 2nd point	The word "elevated" in front of "linear mound" should be deleted because it may cause confusion as to the type and extent of elevation.	Noted and amended accordingly.			
82	LP	p. 4.13,-4.23, Strategy, Visual impact	Preliminary information on vent shafts for the Southern and Central section from PBA dated 24.2.97 (PBA ref.: 9595-ECS-350; KCRC ref.: 024251) can be used for incorporation into the report.	PBA/ TS-300 and TS-400 engineers to provide information for incorporation in LDSR.			
83	LP	p. 4.14, Strategy, Property interfaces	It seems that the first 2 sentences are repetitive.	Noted and amended accordingly.			
84	LP	p. 4.20, Context, 1st point	Please indicate that the tunnel through Lai Chi Kok Park (Phase 1) is at-grade in an enclosed box structure.	Noted and amended accordingly.			
85	LP	p. 4.20, Context, 2nd point	"Kwai Chung Road" should be "Kwai Fuk Road".	Noted and amended accordingly.			
86	LP	p. 4.21, Context, 1st point	"Cut and Cover" should be in small letters for consistency.	Noted and amended accordingly.			
87	LP	p. 4.22, Context, 2nd point	Please add to the sentence: In Tsuen Wan Bay "area...".	Noted and amended accordingly.			
88	LP	p. 4.60, Strategy, Visual impact	The words "depot" and "yard" should be changed to "terminal". Also, capitalisation for the word "terminal" should be consistent throughout the page.	Noted and amended accordingly.			

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89	EC	p.4.54 Section 4.6.2	What we leave will not constitute a park. The issues list should identify that the park as it is today will disappear. The Strategy section should identify that the park needs to be reprovisioned somewhere else if possible.	Noted and amended accordingly.			
90	EC	Strategy section Bullet 4	It is an expensive solution.	In our experience the cost of transparent and opaque noise barriers is comparable.			
91	EC	p.4.55 Section 4.6.2	Context: The statement here is incorrect. We will not be on viaduct within the River Park. The first bullet is great as goal but has little to do with reality. TS-200 has not determined the pier shape but they will probably be round if it is structurally more efficient.	TS-200 consultants to provide updated information on latest horizontal and vertical alignment. Public use of the area under the viaduct is an important issue and is achievable. The area under the viaduct must not be a sterile fenced off area. Noted			
92	AN	p.4.55 Section 4.6.2	To add on the comments above and for your information, the rail will be on viaduct just before it passes the most southern block of Affluence Garden, passes over the Choi Yi Bridge as it crosses the Tuen Mun Nullah. Pls check.	Noted and amended accordingly.			

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93	AN	p.2.03 Fig.2A p.2.04 Fig.2B p.4.29 Fig.4D p.4.57 Fig. 4F	The eastern track of the NFY is incorrect.	We are currently waiting for an updated layout for NFY.			
94	AN	p.2.02 ,Section 2.2 p.2.05, Section 2.3 p.2.06, Section 2.3	Views in the ~~Kam Tin~~ Depot It should be West Rail Depot. Pls also revise the text. Views in the West Rail Depot in Kam Tin - pls revise Kam Tin Depot to West Rail Depot View in the Northern Section - revise Kam Tin Depot to West Rail Depot	Noted and amended accordingly.			
95	AN	p.4.07 Viaducts	Hard Landscape Treatment Bullet 1: suggested here that viaducts are preferred to embankments when the track is 10 m or more above the surrounding land. However, for later sections e.g. Strategy sections on p.4.38,4.40, 4.42, a criteria of '7 m' is quoted instead.	Noted and amended to 10m throughout Report.			
96	AN	p.4.25 Fig.4C	Pls revise the layout of the depot according to the latest information.	TS-600 engineers to forward latest layout.			
97	AN	p.4.26 Section 4.4.1	It is noticed that within the depot layout, there are three legends of 'F'. Besides the Ho Pui Egretry, what are the other 2 egretries identified?	One 'F' is Toll Plaza egretry. The other 'F' should be 'E' i.e. Kam Tin River and is amended accordingly.			
98	AN	p.4.30 Section 4.5.1	The legend for historical bldg 'A' does not show the correct location of Pun Uk.	Noted and amended accordingly.			

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99	AN	p.4.33 Section 4.5.1	The legends for historical bldg 'A' and for temple 'B' are not located correctly. Pls revise.	Noted and amended accordingly.			
100	AN	p.4.35 Section 4.5.2 Strategy	Poon Uk Hakka Mansion is incorrectly located.	Noted and amended accordingly.			
101	AN	p.4.43 Section 4.5.2 The figure	Incorrect location of Kui Shek Hau Ancestral Hall which should be in Ho Sheung Heung.	Noted and amended accordingly.			
102	AN	p.4.46 Section 4.6.1	There are 2 legends 'C' in the Au Tau region. One should indicate the Pun Uk but is located incorrectly. The other 'C' should locate the 5 clan houses at Tung Shing Lei? Pls review the locations. Pok Oi Hospital is not indicated. Also for legend 'A' near Yuen Long station, which historical bldg is supposed to be indicated? If it is the Tin Hau Temple, why not use legend 'B' instead? The Tin Hau Temple near Long Ping Station is not shown? Locations of the Pagoda & Tat Tak Kung Sho and Tin Shui Wai station are located incorrectly. Location of legend G is also a Fung Shui Hill.	Noted Legend 'A' near Yuen Long is Yuen Long Kau Hui (Old Market). Tin Hau Temple will be located correctly using legend 'B'. Noted and amended accordingly. Noted and amended accordingly. Noted and amended accordingly.			
103	AN	p.4.47 Section 4.6.1	Some comments above are applicable as the Tin Shui Wai region also appears in this figure.	Noted			

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104	AN	p.4.48 Section 4.6.1	Does 'B' locate Miu Fat Tsz? The location should move slightly southwards. Pls check. Which ancestral bldg does 'C' indicate? Ching Leung Fat Yuen is mentioned on p.4.54 but not located in this figure? Will Ching Chung Kwun which is near Castle Peak Hospital constitute a visual element from the alignment?	'B' is Miu Fat Tsz, location will be amended. 'C' is Ching Leung Fat Yuen and will be relocated to its correct position. The visual and landscape impact of West Rail on Ching Chung Kwun viewing point will be assessed as part of the Environmental Impact Assessment.			
105	AN	p.4.49 Issues	Bullet 5: Disruption to Yuen Kwan Yi Tai Temple ..... Kwun Yum Temple. The alignment is 120 to 240 m from these temples. What type of disruption is envisaged?	Access to Yuen Kwan Yi Tai Temple, Tin Hau Temple and Kwun Yum Temple will be off Long Yat Road. Yuen Long Station will be constructed over Long Yat Road and access to the historic sites may be temporarily disrupted.			
106	AN	p.4.50 Context	Typo: folloWang? Wang Ning Tsuen ~~Village.~~	Noted and amended accordingly.			
107	AN	p. 4.58 Section 4.7.1 and p.4.33 Section 4.5.1	In the figure, pls review the locations of A, B, C which represent historical bldgs, temple, ancestral bldg respectively. Hung Shing Temple, Sin Wai Nunnery are located somewhere south of the legend (B) & Kui Shek Hau Kung Tsz (the ancestral hall) is located in Ho Sheung Heung, somewhere at the legend (2).	Noted Noted			

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108	VM	p. 2.01, Northern Section, 4th paragraph	"The other six railway lines..." is incorrect. 2 tracks head west to the Yuen Long Station and 2 centre tracks which serve as shuttle service will merge with the 2 other outside tracks. Therefore, only 2 railway lines will remain going north.	Noted and amended accordingly.			
109	VM	p. 2.02 Western Section, p. 2.02 No Views from the train, p. 2.05 Views in the Western Section, p. 4.54 drawing, p. 4.55 drawing	Change "Tuen Mun Central Station" to "Tuen Mun Centre terminus". Please note that the word "terminus" should not be capitalised as it is not part of the name.	Noted and amended accordingly.			
110	VM	General	It should be noted that "Lok Ma Chau Station" should be changed to "Lok Ma Chau terminus" and "Yen Chow Street Station" should be changed to "Yen Chow Street terminus" (see above). Yen Chow Street terminus is an interim terminus until WKPT is approved. The text should be revised where appropriate.	Noted and amended accordingly.			
111	VM	p. 2.03	The extension to Lok Ma Chau terminus is incorrect (see attachment).	Noted and amended accordingly.			
112	VM	p. 4.04, (ii), 6th point	The sentence should read: Patterned effects "on" opaque barriers...	Noted and amended accordingly.			
113	VM	p. 4.12	The Port Rail Terminal section (Area 20) should be at-grade, not embankment.	Noted and amended accordingly			

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114	VM	p. 4.23	The words "North Portal" on the drawing should be moved up where the arrow is to better indicate the correct location. Also, "Maclehole Trail" should be "Maclehose Trail".	Noted and amended accordingly.			
115	VM	p. 4.26	The egretries (Area F) have not been accurately shown on the drawing (see attachment).	Noted and amended accordingly.			
116	VM	p. 4.27, Context	Updated information on the size and layout of the Depot are available. Please revise the text to reflect this.	Noted and amended accordingly.			
117	VM	p. 4.30	Some of the delineated areas are incorrect (see attachment).	Noted and amended accordingly.			
118	VM	p. 4.32	Area 7 near Lok Ma Chau terminus is incorrect.	Noted and amended accordingly.			
119	VM	p. 4.41	There is a typo on the bottom of the page: Proposed "acquired" area by KCRC	Noted and amended accordingly.			
120	VM	p. 4.43	The Lo Wu Station should not be overlapping the river on the drawing. Also, the drawing does not show the location of Kui Shek Hau Ancestral Hall accurately (see attachment).	Noted and amended accordingly. Noted and amended accordingly.			
121	VM	p. 4.44	On the drawing, "KCR East Passenger Line" should be changed to "KCR East Rail". Also, "Castle Peak Road" should be "NT Circular Road".	Noted and amended accordingly. Noted and amended accordingly.			

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122	ROS	P4.27	The Depot is not on a 3m high embankment. At the southern end the Depot will be in shallow cut and the rail level is expected to be just below the existing natural surface. Therefore there is no batter slope on which to establish vegetation. Further, much of the eastern boundary is defined by a retaining wall (in cut and in fill) to minimise the impact on properties. At the northern end the Depot is on 3-4m of fill near the drainage channel.	All information in Report relating to Depot was based on information provided by TS-600 consultants. All changes to the Depot layout are noted. We are currently waiting for information on the revised layout and will amend accordingly.			
123	ROS	P4.27	The plan of the drainage channel shown on P4.27 is not correct. The Land Requirement boundaries shown are incorrect.	We are currently waiting for information on the revised layout and will amend accordingly.			
124	ROS	P4.27	The scope of some of the comments on P4.27 go beyond landscaping. For example discussion of "severed accesses" under the heading "Property Interface". These issues are being addressed in other disciplines.	The subject of 'severed accesses' is discussed under 'Property Interfaces' because the reprovisioning of roads and footpaths as a result of the Depot may result in the resumption of private land for this purpose. The resumption of additional land will primarily be dealt with by other disciplines but it will also have a landscape impact and is therefore addressed in the LDSR.			

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125	ROS		The comments re the use of "grass-reinforced" finish to the channel is noted. However this would conflict with the requirements of DSD, and in any case would result in a much larger channel due to surface roughness.	The use of grass reinforced concrete finish to the drainage channel to reduce the visual impact is suggested as a bio-engineering technique which will only be used if acceptable to DSD. Text will be amended for clarity.			
126	ROS	General	The document refers to Technical Appendices (Appendix I and Appendix II). These were not forwarded with the LDSR.	Appendices I and II will be forwarded when completed.			
127	ROS	Page 2.01	Page 2.01, Section 2.1 West Rail Depot in the Kam Tin Valley (TS600) TS-900 environmental consultants have not confirmed in any of the deliverables yet received that noise barriers will be required and where they will be located. 3rd para. The Depot is now located to both the west and east of the main line tracks.	Only limited information was available from TS-600 at the time of compiling the LDSR. As discussed in the meeting with TS-600 consultants on 20 March 1997, noise mitigation requirements will not be available to TS-600 until agreement with EPD. We are currently waiting for information on the revised layout and will amend accordingly.			
128	ROS	Page 2.02	Page 2.02, Section 2.2, Views in the Kam Tin Depot The height of noise barriers has not yet been confirmed. Only tall noise barriers would restrict the views from the train.	Noted Tall barriers would restrict the views from the train if they were opaque. It is intended that noise barriers should be transparent at passenger height to maintain views. Text will be amended for clarity.			

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129	ROS	Page 2.02	Page 2.02. Discussion of views of depot. Will not be views if Depot and Main Line are decked over.	Noted, however current information does not indicate that Depot and Main Line will be decked over. Please note that any associated property development is outside the scope of TS-900.			
130	ROS	Page 3.02	Page 3.02, Section 3.2, Secondary Design Parameters. The last bullet point in the first column and the 4th bullet point in column 2 suggest a conflict approach to screening. Clarification would assist in interpreting this design parameter.	The last bullet point in the first column refers to screen planting to enhance the external view of West Rail e.g. planting to screen views into yard or Depot from adjacent properties. The 4th bullet point in column 2 refers to the passenger experience and the importance of maintaining views from the train. One design intention is to preserve views out of the train where possible. However, in situations where screen planting is felt to be required to reduce visual impacts on adjacent sensitive receivers (e.g. to screen large cut slopes or large buildings in rural settings) then the need for screen planting will take priority over the need to preserve views out of the train. (Train passengers are not regarded as sensitive receivers in this context)			

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131	ROS	Page 4.27	Page 4.27, Section 4.4.2 Context. Work has progressed on the vertical profile of the Depot. The latest cross sections suggest that the southern section of the Depot will be in up to 2 metres of cut and the northern section will be on up to 3 metres of fill.	Noted and will be amended accordingly.			
132	ROS	Page 4.27	Page 4.27, Section 4.4.2 Strategy. Columnar trees are proposed within the maintenance yard to screen views from surrounding elevated land. As stated on page 4.05, section iii soft landscape treatment, trees should not be planted in locations where they can damage the track and OHCS. Generally, adequate and safe width for tree planting has not been allowed within the current layout and land take, however trees will certainly be considered where space permits within the approved layout.	Noted			
133	ROS	Page 4.27	Page 4.27, Cross Section The figures shows intermittent tree planting on the eastern embankment of the Depot to retain views out. We are concerned that this will not provide the optimum, visual mitigation from the villages on the eastern side of the Depot (Tin Sam Tsuen, Sam San Tsuen and Cheung Po) who have dwellings extremely close to the Depot.	Noted, mitigation measures will be reassessed in view of the new layout. As noted in response to comment 130, visual mitigation for adjacent sensitive receivers takes priority over passenger views out.			

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134	ROS	Page 4.04	Page 4.04 Noise Barriers and Noise Enclosures No indicate of dimension as potential impact upon land take.	It is intended that noise barriers would form an integral part of the ovoid template concept which comprises masts and overhead catenary system. This will minimise impact upon landtake.			
135	ROS	Page 4.05	Page 4.05 Boundary fence needs to be provided with a 1m easement beyond. Needs to be reflected on drawings and the requirement needs to be confirmed with KCRC.	KCRC have confirmed that the fence at the edge of the railway corridor should be located 1m within the KCRC property line. This will create a 1m wide path for KCRC access along the fence line. Text and drawings will be amended for clarity.			
136	ROS	Page 4.06	Page 4.06 Cutting recommended gradient is 1 in 1.5. Is this confirmed by KCRC?	As advised by TS-100 consultants, according to normal practice, soft ground cutting will be at an angle of approximately 30°. For cut slopes in rock, the cutting will be an angle of approximately 70°			

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137	ROS	Page 4.07	Page 4.07. Viaducts States that land beneath viaduct should be reinstated to previous use. Not practical from maintenance prospective. Also likely that land will revert to KCRC or other Government Department after resumption. Cannot give land back to previous owner.	Public use of the area under the viaduct is an important issue and is achievable. The area under the viaduct must not be a sterile fenced off area. It is intended that all land required for the railway is permanently gazetted as KCRC land. Land under viaduct could be used for a range of uses: open space, amenity or utility. It is possible that the land could be leased back to former tenant if appropriate or to another tenant for a landuse compatible to adjacent land.			
			Also states access paths will not be required. However, any roads and footpaths affected by railway will need to be reprovided.	Noted			
			Whole concept of land use beneath the viaducts is impractical and does not reflect situation after resumption.	Highways Dept. and Planning Dept. support the use and proper maintenance of the areas of land under viaducts.			
138	ROS	Page 4.10	Page 4.10 Trackside Features Will need to be identified and taken into account in land take requirements.	Noted			

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139	ROS	Page 4.27	Page 4.27 Proposals for Depot Land take will need to take into account noise barriers and any other mitigation measures required. Noise barrier need to be defined as well as associated land take.	Noted Noted			
140	NT Planning HQ.	General	a. The quality of the drawings and location plans are poor, this makes it difficult to comprehend the content and assess the proposals.	The clarity of some of the Analysis and Location Plans will be improved for the reproduction of the Final Report.			
141	NT Planning HQ.	page 4.54	b. Please explain the implementation mechanism for the landscape strategy proposals, for example, how the idea of "cantilevered walkway" (page 4.54 refers) is translated into the design of the West Rail.	When the Landscape Design Strategy Report (LDSR) is endorsed by the KCRC, the proposals outlined in the LDSR will be implemented in the detailed design, subject to refinements as the design evolves. Implementation of the landscape strategy proposals will be carried out by the project engineers and landscape architects. The idea of a "cantilevered walkway" (page 4.54 refers) is a suggestion to the TS-200 engineers for the reprovision of the river edge walkway within Tuen Mun River Park which will be disrupted in the construction of Tuen Mun North station.			

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142	NT Planning HQ.	General	c. It is considered necessary to use photomontage to illustrate the effectiveness of the proposed visual treatment works and landscaping proposals.	The aim of the LDSR is to establish design principles for the visual and landscape aspects of West Rail as a prelude to detailed design proposals. It is not considered necessary to use photomontage within the LDSR. This was agreed with the Planning Dept. at the meeting of 27 February 1997. Response to Comment from Inception Report quoted for your reference: "A range of representational and illustrative techniques will be employed by the Engineering Design Consultants in proposing the landscape design along the alignment. The impact assessment will utilise such material as appropriate", as discussed in the 2nd Study Management Group.			

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143	NT Planning HQ.	Section 3	Section 3 - Design Parameters 1. It seems that in the design strategy, the task of minimising the possible visual impacts on the surrounding developments and sensitive uses has not been given much attention.	It is considered that the recommendations in the LDSR will minimise the visual impact of West Rail on surrounding development e.g. aesthetically sensitive design of all structures, screening of all structures with vegetation, the replacement of embankment over 10m in height with viaduct to reduce visual severance and landtake, the grading of cuttings to allow for planting rather than spray on concrete and the planting of climbing plants on rock faces etc. More detailed assessment of the visual and landscape impacts of the West Rail will be carried out during the Initial Assessment Report. We find this comment surprising as the whole thrust of the document is towards a co-ordinated design for the railway and its components which correspondingly reduces the visual impact on sensitive receivers.			
144	NT Planning HQ.	Section 3	2. The design parameters should also cover the conservation of those fish ponds with ecological value.	Page 3.03 Primary Design Parameter: 'The landscape design strategy should be environmentally friendly' is intended to refer to sites of ecological interest. Conservation of and treatment to minimise damage to these sites is referred to throughout the Report.			

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145	NT Planning HQ.	Page 4.32	Page 4.32 1. The land use along the northern part of the alignment comprises fish ponds, woodland, vacant land and scattered domestic settlements instead of 'Rural Industrial Area'.	Noted and amended accordingly.			
146	NT Planning HQ.	Page 4.32	2. Please specify clearly that the use adjacent to the proposed Lok Ma Chau Station and the northern part of the alignment is fish pond, which is listed under cultural and environmental sites.	Noted and amended accordingly.			
147	NT Planning HQ.	Page 4.33 - Fig 4.5.1	Page 4.33 - Fig 4.5.1 1. The area (No. 7 to the immediate south of the proposed North Freight Yard (No. 20) is zoned "Comprehensive Development Area" ("CDA") on the OZP. Two low-density residential developments in the "CDA" have been approved by the Town Planning Board. Therefore, site No.7 should be regarded as committed residential development and Fig 4.5.1 needs to be amended accordingly.	Noted and amended accordingly.			

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148	NT Planning HQ.	Page 4.33 - Fig 4.5.1	2. The proposed Northern Freight Yard as a massive development would have visual impacts on the village and low-rise residential developments in Kwu Tung North and Kwu Tung South as well as the high-rise residential developments in Fanling/Sheung Shui New Town. The design of the freight yard and the landscaping proposals should be able to minimise the adverse visual impacts.	Noted. TS-1150 engineers to allow sufficient land for screen planting within this site as shown on page 4.59 of LDSR.			
149	NT Planning HQ.	Page Page 4.39 & Page 4.40	Page 4.39 & page 4.40 1. The open storage yards in San Tin are mainly located to the south-west of Pun Uk Tsuen and near Castle Peak Road. For the northern section of the alignment to the north-west of Pun Uk Tsuen, the main land use is fish pond.	Noted and amended accordingly.			

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150	NT Planning HQ.	Page 4.33 - Fig 4.5.1	2. The proposed terminal and the alignment west of San Sham Road fall within Deep Bay Buffer Zone II. Please investigate the possibility of relocating the station to minimise disturbance to the fish ponds. Otherwise, a more refined strategy acceptable to relevant government departments e.g. DFA should be formulated.	Various options have been previously analysed for the location of the NFY and the proposed location is considered to achieve a reasonable balance between impacts in the existing community and the local ecology.			
151	NT Planning HQ.	Page 4.46	Page 4.46 1. The area to the north of Sheung Cheung Wai i.e. Ping Shan Pagoda is also a fung shui site (symbol marked on page 4.50 seems to be not very accurate). Please consult DO/YL for verification and details.	Presumably the pagoda refers to Tsui Shing Lau Pagoda. The location on page 4.46 (not on 4.50) has been checked and amended accordingly.			
152	NT Planning HQ.	Page 4.46	2. The area to the west of Tin Sam is mainly occupied by village settlements and farms intermixed with rural industrial workshops. It is not entirely an industrial area.	Noted and amended accordingly.			
153	NT Planning HQ.	Page 4.51 & Page 4.52	Page 4.51 & Page 4.52 1. DLO/YL should be consulted on the interface between the rail and the sites of historic and cultural interest.	Noted.			

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154	NT Planning HQ.	Page 4.51 & Page 4.52	2. Property interface may include the interface between the rail and the village settlements including two sites currently under planning review/appeal (i.e. Application Nos. DPA/YL-PS/2 and 17).	Noted.			
155	NT Planning HQ.	Page 4.51 & Page 4.52	Page 4.54 The proposed "cantilevered walkway" is a rather new idea. Its feasibility and impacts should be further studied with particular reference to the current study on nullah decking (Please contact DSD for details). The alignment of the West Rail (Tuen Mun Section) running in general along the Tuen Mun Nullah might enhance the feasibility of decking over the whole Tuen Mun Nullah.	The detailed design issues will be dealt with by the TS-100 consultants.			
156	NT Planning HQ.	Page 4.55	Page 4.55 The sitting out area at Ho Pong Street together with the entire San Fat Estate would be affected by the West Rail Tuen Mun Central Station, and reprovisioning would be required.	Current engineering information indicates that the sitting out area will be reprovisioned on the northern side of the station on the decked nullah. We are not aware of a site for the reprovisioning of San Fat Estate. This issue will be dealt with under the TS-200 consultancy.			

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157	RC and RSD	General	(a) Where landscape areas are intended to be handed over to this Department for maintenance our agreement should be sought early in the design development.	Noted			
158	RC and RSD	General	(b) Layout plans and drawings for areas to be handed over should be vetted and approved by this Department prior to commencement of works.	Noted			
159	RC and RSD	General	(c) The landscape area which are reasonably accessible by vehicles and maintenance staff should be allowed e.g. gradient of slopes less than 30° and width of verge wider than 2m.	Noted			
160	RC and RSD	General	(d) Sufficient provision of water points at appropriate locations should be allowed.	Noted			
161	RC and RSD	General	(e) Sufficient headroom should be allowed underneath bridges for plant growth; or otherwise suitable species should be selected to suit circumstances.	Noted			