

8.1 *INTRODUCTION*

This section presents the landscape and visual impact assessment conducted for the Preferred Development Option for the Study Area. The objective of the assessment is to predict and assess the impact of the proposed developments within the Study Area on the existing landscape and visual resources.

8.2 *ENVIRONMENTAL LEGISLATION AND CRITERIA*

The EIAO is the legislation providing statutory control of the EIA process and the EIATM issued under *Section 16* of the EIAO sets out technical requirements for all aspects of the EIA process. The criteria and guidelines for landscape and visual impact assessment are set out in *Annex 10* and *Annex 18* of the EIATM respectively.

8.3 *ASSESSMENT METHODOLOGY*

The methodology adopted for this assessment is in general accordance with the Study Brief and *Annex 18* of the EIATM. The main elements are:

- baseline study;
- review of planning and control framework;
- description of proposed development;
- impact assessment; and
- recommendations on mitigation measures.

8.3.1 *Baseline Study*

The baseline study examined all the components of the landscape and visual resources. An inventory of the landscape and visual features of the site was prepared and mapped. The survey and inventory was determined by site inspection, examination of aerial photos and desk top study. A photographic record of the site was prepared for reference. The landscape baseline condition was comprehensively mapped and described using graphic techniques as far as possible. The landscape baseline condition was appraised and conclusions drawn on its quality, sensitivity and its ability to accommodate change.

A visual envelope was established which will effectively define the extent of the likely visual impacts. Establishing the visual envelope was based on desktop study as well as site investigation. Visual receivers within the visual envelope were chosen from a variety of distances.

8.3.2 *Planning and Development Control Framework*

This task included a review of the planning studies and documents stated in the brief to gain an insight into the planned role of the site and its context. This will include review of land with landscape-related zoning. This information was mapped and analysed to provide an insight to the future outlook of the area affected and the way the project fits into its wider context.

Impact Assessment

Direct impacts upon specific landscape and visual receivers were assessed. The broader effects on the landscape patterns of the area was assessed by mapping and reviewing the site within its broader context.

The significance of the landscape and visual impact was judged using the following criteria:

- the level of change to the baseline condition;
- the proximity of the sensitive viewpoint to the proposed development;
- the number of people representing the sensitive viewpoint;
- the frequency and length of the view of the proposed developments;
- the activity of the viewer (for example, leisure time, working etc.);
- the scale of the proposed works in relation to the overall view (the impact would be less significant if part of a wide or panoramic view).

The analysis of the degree of impact is based on the following matrix:

Magnitude of Change	High	Moderate Impact	Moderate / Significant Impact	Significant Impact
	Medium	Slight / Moderate Impact	Moderate Impact	Moderate / Significant Impact
	Low	Slight Impact	Slight / Moderate Impact	Moderate Impact
		Low	Medium	High
	Sensitivity / Quality			

The above matrix will apply in the assessment of the majority of situations, however, in certain cases a deviation from this may occur, e.g. the impact may be so major that a significant impact may occur to a low quality element.

8.3.4

Recommendation of Mitigation Measures

An initial Landscape and Visual Impact Assessment conducted during an earlier part of the Study recommended a number of components to be incorporated into a Master Landscape Plan (MLSP). These elements would mitigate the landscape and visual impacts of the proposed development. The MLSP has now been developed and the Landscape and Visual Impact Assessment assessed its main elements as well as the preferred development option.

8.3.5

Residual (Operation) Impacts

The recommended mitigation measures intend to alleviate the impacts identified during the impact analysis. However, permanent or residual impacts may still be present during the operation phase of the development. These impacts will be classified in accordance with Annex 10 of the EIAO TM to reflect whether these residual impacts are acceptable with, or without, the mitigation measures or whether they are unacceptable in the long term.

8.3.6 *Definition of Technical Terms*

For the purpose of this Landscape and Visual Impact Assessment, the technical terms used are defined as follows:

Landscape impact is a direct physical change to existing landscape features such as vegetation, topography, open space and recreation facilities as well as buildings and structures. By mapping the extent and location of these features, any loss or change can be objectively assessed.

Visual impact is a change to the appearance of the landscape and its subsequent effect on the views of groups of people at particularly sensitive viewpoints. Visual impact can vary in significance from overall improvement to degradation. The assessment of visual impact relies on an understanding of aesthetic principles, the design and function of urban form, and the characteristics of human perception. It should be noted that, unlike the more tangible environmental impacts, visual impact does not usually result in direct physical changes to the occupants of an area, as would damage to health from air, noise or water pollution. However, this is not to say that adverse levels of visual impact are harmless and can be ignored because they are not physical. Research has shown that the need for aesthetic control of visual impact arises from the desire of people to exercise control over their environments, rather than from the desire to protect "visual beauty". The consequences of adverse levels of visual impact can lead to the blighting of urban and rural areas, resulting in a long-term decline in the quality of environmental amenity. To people affected by this blight, it represents a loss of control of their environment generating strong feelings of resistance to proposed developments.

Visual receivers are groups of people who are sensitive to changes in their views. The Environmental Guidelines for Planning in Hong Kong define sensitive users as 'land uses which, by virtue of the nature of the activities thereon are susceptible to the influence of residual or physical changes generated by polluting uses'.

Sensitive visual receivers are groups of people with views from residential developments and buildings who would be particularly aware of any visual changes. Residents are likely to care about the views from their homes as this is where they are likely to spend their family and leisure time. In addition, residents are likely to have a financial interest in the property (either ownership or rental) and a change in the appearance of the surroundings could have a significant implication on property values.

8.4 *EXISTING LANDSCAPE AND VISUAL RESOURCES*

8.4.1 *Landscape within Visual Catchment*

Area 54 is on the north-west fringe of Tuen Mun surrounded by the distinctive hills of the Tai Lam Country Park to the east and the foothills of Castle Peak to the west. Its periphery is bounded by housing developments such as Siu Hong Court, Tai Hing Court and Tin King Estate to the south and east which overlook the site. Within the villages of Area 54, the visual boundaries tend to be the dramatic foothills and ridgelines of Tai Lam Country Park and Castle Peak (refer to *Figure 8.4a*).

Within this visual catchment, there are a number of elements which combine to distinguish the landscape:

- landscape and village character;

- topography; and
- vegetation cover.

Landscape and Village Character

The existing four villages lie in the central and eastern parts of the site and generally are relatively concentrated into distinctive areas. Scattered between the villages to the south and west are areas of open space storage. Corridors and patches of agricultural land penetrate through the village areas and open storage areas. Along the western edge of the Study Area, this patchwork of land uses ends abruptly at extensive stands of mixed woodland or the wooded foothills of Castle Peak.

Topography

The topography of the site is essentially flat, except for the western edge (refer to *Figure 8.4b*). In this location, the elevation is abruptly transformed into the foothills of Castle Peak with steep slopes of over 10% dissected by streams. There are two knolls in the south west part of the site, both of which are covered by thick woodland and are distinctive local landforms.

Vegetation cover

The vegetation cover of site comprises a number of distinctive types (refer to *Figure 8.4c*):

- agricultural land;
- woodland adjacent to streams;
- mixed woodland;
- wooded foothills; and
- Government-managed farms.

Parts of the agricultural land are under cultivation and have therefore reverted to fallow grassy fields. Where fields are worked, there are interesting mixes of crops (see *Agricultural Land Image 2, Figure 8.4c*). These areas are scattered throughout the site. There are a number of thick stands of woodland, particularly to the south-west and west. These areas are characterised by mature trees and a variety of botanical associations (refer to *Section 7*). As the gradients increase to the west of the site, the vegetation becomes more scrub-like owing to its exposure to wind and the thin soils of the foothills. Where streams are present, the vegetation tends to become thicker owing to protection from wind and a more abundant supply of water. To the south of the site is a Government managed farm which also contains some Government offices. This area is not intensively developed and contains open stands of trees and grass.

8.4.2

Evaluation of Existing Landscape and Visual Resources

The mosaic of villages, agricultural land and woodland framed by the dramatic slopes of the Castle Peak range are considered to be an extremely interesting example of urban fringe village development. This interest can be attributed to the variety of landscape character types, the intimate scale of the spaces created by these landscape types and the setting of the foothills behind. The landscape and visual resources of Area 54 contrast markedly with intensive urban development of the Tuen Mun Town Centre and the adjacent housing developments a short distance away such as Siu Hong Court, Tai Hing Court and Tin King Estate. For this reason, the landscape and visual resources of Area 54 are considered to be of high local value, especially the existing woodlands and wooded foothills to the west of the site.

8.5

IDENTIFICATION OF SENSITIVE RECEIVERS

The Visual Sensitive Receivers (VSRs) identified for the implementation of the proposed developments in the Study Area are:

- residents in Po Tong Ha Village;
- residents in Siu Hang Tsuen;
- residents in Kei Lun Wai Village;
- residents in Tsz Tin Tsuen;
- patients in Castle Peak Hospital;
- residents in Siu Hong Court;
- residents in Tai Hing Court;
- residents in Kin San Estate;
- residents in Venice Garden;
- residents in Tin King Estate;
- passengers along the LRT line between King San Court, together with Ching Chung and Kei Lun stations;
- vehicular passengers along Castle Peak Road; and
- Fung Shui shrine in Tsz Tin Tsuen.

The VSRs are presented in *Figure 8.5a*.

8.6

DEVELOPMENT CONTEXT

8.6.1

Green Belt

The western extent of Area 54 is zoned as a Green Belt, intended to define the limits of Tuen Mun's urban development by conserving landscape features and to promote conservation and protection of the environment. There are no district or open space zonings present on site. While the majority of land within the Green Belt remains undeveloped landscape, a strip of land adjacent to Hong Po Road to the north-east has a variety of housing and industrial, attenuating its land-use planning function. There is an intention to change the planned land-use of this piece of land to residential.

To the east of the Study Area are the existing high-rise developments of Siu Hong Court. These affect the Study Area resulting in it being on the urban fringes of the dense high-rise areas of Tuen Mun.

8.7

DESCRIPTION OF PREFERRED DEVELOPMENT OPTION AND LANDSCAPE MASTER PLAN

8.7.1

Preferred Development Option

The Preferred Development Option is described in *Section 2* of this EIA-FAR. The main attributes of the development affecting the landscape and visual resources are summarised as follows:

- 36 no. high-rise buildings;
- 10 no. schools;
- distributor and estate roads; and
- underground services.

The nature of the development results in the MLSP being the main mitigation measure to the impacts. There are six main components of the MLSP, which are:

- rationalisation of the Green Belt zoning;
- the protection of the existing woodland;
- the provision of view corridors through the development including:
 - from the Siu Hong Court west and north-west towards the Castle Peak Ridgeline;
 - from Kei Lun Wai north-west to the Castle Peak Ridgeline
 - from Po Tong Ha, Tsz Tin Tsuen and Siu Hang Tsuen to the south and east..
- primary pedestrian corridors through the development;
- the provision of local open space; and
- landscape design of roads.

The MLSP and the visual simulation of the proposed developments in Tuen Mun Area 54 are shown in *Figure 8.7a* and *Figure 8.7b* respectively.

Green Belt Zoning

The Green Belt zoning of the woodland at the base of the Castle Peak foothills has been retained within the MLSP, including at the north east boundary between Area 54 and San Hing Tsuen village despite its existing industrial uses. As there is a surplus of industrial land in the New Territories, there is an intention to change the planned use of existing industrial uses in San Hing Tsuen to residential. The retention and intended improvement of the Green Belt is a significant aspect of the MLSP and is an important transitional urban fringe landscape between Tuen Mun and the Castle Peak hill ranges.

Existing Woodland

The mixed mature woodland present on the knoll is a landscape and ecological feature of high value and is recommended as a Conservation Area (CA), and therefore subject to more stringent statutory planning control and protection than a Green Belt. The purpose of the CA is to retain the existing natural features and rural use. The cumulative effect of the Green Belt and CA is to conserve and protect a significant amount of the Area 54 natural environment for the benefit of the local population.

View Corridors

View corridors from Siu Hong Court adjacent to Area 54 will be preserved by locating low-level G/IC development between Siu Hang Tsuen and Kei Lun Wai villages. This will allow views out to Tai Lam Country Park and Castle Peak. The retention of the Green Belt zoning and the CA woodland will also allow view corridors from Blossom Garden and Goodrich Garden of the same scenery. Views out from Siu Hang Tsuen, Po Tang Ha and Tsz Tin Tsuen will not be completely obstructed by high-rise buildings and some long-distance views will be preserved. Kei Lun Wai will have visual relief over the G/IC sites rather than a solid wall of development, but views from within this village will be contained in most directions. Views from King San Estate towards the Castle Peak foothills will be preserved and enhanced by the retention of the Green Belt zoning and the protection of the wooded knolls by a CA zoning (refer to *Figure 8.7c, Aerial View of Site*).

Primary Pedestrian Corridors

The distributor road and the Green Belt-CA zoned areas will be physically separated from most of the proposed development as shown on *Figure 2.3d*. Therefore, there will be a need for pedestrian linkages from the new housing sites through the existing villages to the preserved landscape areas. An opportunity arises to provide pedestrian footpaths for the benefit of the local villagers and the future population. These linkages should carry through the new development and link to the future KCR West Rail Tuen Mun North Station and the existing LRT stations at Tin King, Kin Sang and Tsing Tsung.

Local Open Space

In accordance with HKPSG, a total of 53,000 m of local open space will be required for Area 54, which will be incorporated into each new development in proportion to the target population for each site.

A number of key primary pedestrian corridors have been identified through the proposed development (refer to *Figure 8.7a*, Master Landscape Plan) which will keep intact connections between existing villages lead to important off-site public transport locations. These linkages will need to be reinforced by amenity planting and shade tree planting.

Landscape Design for Roads

The Green Belt-CA transitional landscape is clearly defined by the main distributor road, which has been designed to avoid impacting on a stand of trees of significant value (refer to *Section 7 Terrestrial Ecology*). The road essentially acts as a main transport corridor through the site and is potentially a physical and visual obstacle to the Green Belt-CA zonings. To overcome this, the design of the road will incorporate a 'green corridor' of new landscape such as street trees and massed shrub planting. An innovative approach would be to incorporate a soil corridor 1.5 m wide and 1.2 m deep adjacent to other utility and services alignments.

8.7.3 Additional Mitigation Measures

Although the MLSP is the primary mitigation for the development, additional measures are required to avoid alleviate other impacts. These are:

During Construction

Tree Preservation

The detail design process should consider the requirements of both PELBTC no. 3/94 and WBTC 24/94 concerning Tree Preservation. A full tree survey of all trees affected will be undertaken and submitted to the appropriate government department. This will include recommendations for all trees, together with a compensatory planting plan. Trees should be retained where possible. Any trees with good amenity value and unable to be retained should be considered for their suitability for transplanting.

Adequate protection should be given to the retained trees on site and adjacent to works.

Glare

There is a potential for glare occurring during the construction period if night-time working is required. To mitigate this, night-time lighting should be minimised with directional cowled light being used.

Views of Construction Works

The views of construction works are not able to be mitigated in visual impacts from elevated VSRs in high-rise buildings. However, at ground level the works can be screened by the use of a hoarding between the works and the lower level VSRs.

Topsoils

Topsoils, if worthy of retention, should be stockpiled up to 2m high and for a period not exceeding 12 months, and temporarily vegetated with hydroseeded grass during construction. After completion it should be reused or considered for use in other projects.

After Construction (Operation)

Compensatory Planting

As part of any Tree Felling Application, in accordance with WBTC 24/94 a compensatory planting plan will be submitted for approval by the relevant government authorities. This should replace at least the same number of trees affected and should place an emphasis on native species. It should also reflect the species required within the mitigation measures for Section 7 ecological impacts.

Glare

This will occur due to the new building reflecting light and to the night-time highway lighting increasing the ambient light levels. The former should be countered by the use of non-reflective materials on the building facades. The latter will be alleviated by the use of directional and cowled highway lighting.

Noise Barriers

In the context of the scale and type of the development the noise barriers will contribute to the overall impacts, rather than be a sole source of impact. Nevertheless they should be considered. In general they will be screened from the existing VSRs due to the new buildings. However, in order to reduce their intrusion they should be design to be visually recessive by the use of clear material and the use of posts painted in colours reflecting the surrounding tonal qualities as far as practicable. Detail design of noise barriers should be submitted to ACABAS for consultation.

8.8

IMPACT ASSESSMENT

The landscape and visual impacts of the Preferred Development Option can be divided into impacts during construction and impacts during operation (after construction). *Table 8.8a* and *Table 8.8b* summarises these impacts assuming the mitigation measures of the MLSP are incorporated into scheme.

Table 8.8a Landscape and Visual Impacts During Construction

Sensitive Receiver	Source of Impact	Level of Unmitigated Impact	Mitigation	Level of Mitigated Impact
Residential VSRs in villages, residents in Po Tong Ha Village;	High magnitude of change due to: <ul style="list-style-type: none"> • machinery operation • haul roads and vehicle movements • piling • potential night-time lighting if required • construction activities • site formation, cut slopes and embankments • loss of vegetation • loss of quiet urban-fringe village residential amenity 	High magnitude of change causing significant adverse impacts	<ul style="list-style-type: none"> • restriction of night-time working • mitigation will be through the creation of the Landscape Master Plan, creation of local open space, compensatory planting, etc. 	Acceptable with mitigation measures (temporary impacts only)
residents in Siu Hang Tsuen; residents in Kei Lun Wai Village;				
residents in Tsz Tin Tsuen;				
Fung Shui shrine in Tsz Tin Tsuen..				
Residential VSRs in local hospital, high-rise estates and associated public areas of high sensitivity				
• patients in Castle Peak Hospital;				
• residents in Siu Hong Court;				
• residents in Tai Hing Court;				
• residents in Kin San Estate;				
• residents in Venice Garden;				
• residents in Tin King Estate.				
Vehicular VSRs on transport corridors of low sensitivity				
• passengers along the LRT line between King San Court, together with Chung Chung and Kei Lun stations;				
• vehicular passengers along Castle Peak Road.				
Local landscape character of villages of high sensitivity	High magnitude of change due to: <ul style="list-style-type: none"> • construction activities • loss of quiet urban-fringe village residential amenity • loss of diverse and intimate scale of village landscape • exposure of topsoil to erosion 	High magnitude of change causing significant adverse impacts	<ul style="list-style-type: none"> • mitigation will be through the creation of the Landscape Master Plan, creation of local open space, compensatory planting, etc. 	Acceptable with mitigation measures (temporary impacts only)

Sensitive Receiver	Source of Impact	Level of Unmitigated Impact	Mitigation	Level of Mitigated Impact
Local agricultural and woodland landscape character and vegetation of high sensitivity	High magnitude of change due to: <ul style="list-style-type: none"> • appearance of extensive engineering platforms • loss of the landscape 	High magnitude of change causing significant adverse impacts	<ul style="list-style-type: none"> • detailed tree survey and retention of trees where possible • transplanting of significant trees if suitable • compensatory tree planting of equivalent number trees affected • compensatory tree planting in the Conservation Area 	Acceptable with mitigation measures (temporary impacts only)

Table 8.8b Residual Landscape and Visual Impacts During Operation

Sensitive Receiver	Source of Impact	Level of Unmitigated Impact	Mitigated Impact	Level of Mitigated Impact
<p>Residential VSRs in villages, <ul style="list-style-type: none"> • residents in Po Tong Ha Village; • residents in Siu Hang Tsuen; • residents in Kei Lun Wai Village; • residents in Tsz Tin Tsuen; • Fung Shui shrine in Tsz Tin Tsuen.. </p>	<p>High magnitude of change due to:</p> <ul style="list-style-type: none"> • High-rise buildings • Potential for glare from buildings 	<p>High magnitude of change causing significant adverse impact</p>	<ul style="list-style-type: none"> • permanent negative impact from the appearance of new man-made elements at the periphery of village environs but in context of local high rise urban areas of Tuen Mun • permanent negative impact to views from estates to Castle Peak partially obstructed 	<p>Acceptable with mitigation</p>
<p>Residential VSRs in local hospital, high-rise estates and associated public areas of high sensitivity</p>	<ul style="list-style-type: none"> • patients in Castle Peak Hospital; • residents in Siu Hong Court; • residents in Tai Hing Court; • residents in Kin San Estate; • residents in Venice Garden; • residents in Tin King Estate. 			
<p>Vehicular VSRs on transport corridors of low sensitivity</p>	<ul style="list-style-type: none"> • passengers along the LRT line between King San Court, together with Ching Chung and Kei Lun stations; • vehicular passengers along Castle Peak Road. 			

Sensitive Receiver	Source of Impact	Level of Unmitigated Impact	Mitigated Impact	Level of Mitigated Impact
Residential VSRs in villages, <ul style="list-style-type: none"> residents in Po Tong Ha Village; residents in Siu Hang Tsuen; residents in Kei Lun Wai Village; residents in Tsz Tin Tsuen; Fung Shui shrine in Tsz Tin Tsuen.. Residential VSRs in local hospital, high-rise estates and associated public areas of high sensitivity <ul style="list-style-type: none"> patients in Castle Peak Hospital; residents in Siu Hong Court; residents in Tai Hing Court; residents in Tin King Estate. 	High magnitude of change due to: <ul style="list-style-type: none"> Dual carriageway distributor road and estate roads and associated landscape design Increase in ambient light levels due to highway lighting 	Medium magnitude of change causing moderate adverse impact	<ul style="list-style-type: none"> limited permanent negative impact which is acceptable with mitigation measures - new, wide transport corridor within a semi-rural landscape mitigated by the proposed extensive street tree planting limited negative impact which is acceptable with mitigation measures - cowling of lights and use of directional lighting 	Acceptable with mitigation
Vehicular VSRs on transport corridors of low sensitivity <ul style="list-style-type: none"> passengers along the LRT line between King San Court, together with Chung Chung and Kei Lun stations; vehicular passengers along Castle Peak Road. 	Medium magnitude of change due to: <ul style="list-style-type: none"> Creation of local open space 	Medium magnitude of change causing beneficial impact	<ul style="list-style-type: none"> permanent positive impact which is acceptable by creation of areas for passive and active recreation 	Acceptable beneficial landscape and visual impacts
Local agricultural and woodland landscape character of high sensitivity	Medium magnitude of change due to: <ul style="list-style-type: none"> Rationalisation of the Green Belt zoning 	Medium magnitude of change causing beneficial impact	<ul style="list-style-type: none"> permanent positive impact due to rationalisation of Green Belt Areas and statutory protection of the urban fringe landscape 	Acceptable beneficial landscape impact for landscape of high local importance
Green Belt Areas of high sensitivity	Medium magnitude of change due to: <ul style="list-style-type: none"> Protection of the existing woodland 	Medium magnitude of change causing beneficial impact	<ul style="list-style-type: none"> permanent positive impact due to protection of existing woodland and statutory landscape protection for a landscape with rare trees and important ecological habitats 	Acceptable beneficial landscape impact for landscape of regional importance

Sensitive Receiver	Source of Impact	Level of Unmitigated Impact	Mitigated Impact	Level of Mitigated Impact
Residential VSRs in villages, <ul style="list-style-type: none"> residents in Po Tong Ha Village; residents in Siu Hang Tsuen; residents in Kei Lun Wai Village; residents in Tsz Tin Tsuen; Fung Shui shrine in Tsz Tin Tsuen.. Residential VSRs in local high-rise estates and associated public areas of high sensitivity <ul style="list-style-type: none"> patients in Castle Peak Hospital; residents in Siu Hong Court; residents in Tai Hing Court; residents in Tin King Estate. Vehicular VSRs on transport corridors of low sensitivity <ul style="list-style-type: none"> passengers along the LRT line between King San Court, together with Ching Chung and Kei Lun stations; vehicular passengers along Castle Peak Road. Local pedestrians of high sensitivity	High magnitude of change due to: <ul style="list-style-type: none"> Introduction of major high-rise development in local views 	High magnitude of change causing significant adverse impact	<ul style="list-style-type: none"> permanent negative impact due to high-rise development, however, provision of view corridors through the development retain some views from local estates towards Castle Peak, retain visual connections between villages and retain views from the fung shui shrine 	Acceptable with mitigation measures
	Medium magnitude of change due to: <ul style="list-style-type: none"> creation of primary pedestrian corridors 	Medium magnitude of change causing beneficial impacts	<ul style="list-style-type: none"> permanent positive impact due to physical connections between villages reinforced by amenity planting and local open space 	Acceptable beneficial impact

The extent of the landscape impacts to the existing vegetation has been quantified, where possible. Approximate areas for the loss of vegetation is as follows:

Vegetation Type	Approximate Area Lost
Orchard	1.4 Ha
Woodland	3.3 Ha
Agricultural Fields	9.6 Ha

Photomontages have been formulated to aid visualisation of the development. These have been based on photographs of the site taken from typical viewpoints as shown in Figure 8.8a representing the key VSRs where possible. However, site restrictions prevent photographs being taken from certain locations, including:

- restricted access to apartment blocks overseeing the site, however, where possible, views have been taken from podium level;
- intermediate low-rise buildings screening views from podium; and,
- local topography and vegetation restricting views from those areas which are accessible.

Photomontages have been created for the following:

- typical view from Siu Hong Court at podium level representing views from Siu Hong Court apartments and residential local open space as shown in Figure 8.8b;
- typical view from ground level representing Kei Lun Wai village and local public areas as shown in Figure 8.8c; and,
- typical view from the Po Tong Ha as shown in Figure 8.8d.

8.9 FUNDING IMPLEMENTATION, MANAGEMENT AND MAINTENANCE OF LANDSCAPE WORKS

During construction works, the implementation, management and maintenance of the landscape mitigation measures will be the responsibility of TDD, and enforced through the contract and the team responsible for the design and construction for the project.

The funding, implementation, management and maintenance of Landscape Works after construction (operation phase) is given in *Table 8.9a*.

Table 8.9a *Funding, Implementation, Management and Maintenance of Landscape Works*

Landscape Team	Proposed Funding/Implementation	Management Department	Maintenance Department
Roadside Hardworks	TDD	HyD	HyD
Roadside Planting	TDD	RSD	RSD
Open space within housing development	HD/PSPS developer	HD	HD
Amenity Areas	TDD	RSD	ASD/RSD
Conservation Areas	TDD	TDD	AFD
Noise Barriers	TDD	HyD	HyD

Table 8.9a is based on the WBTC 18/94, Management and Maintenance of both Natural Vegetation and Landscape Works. TDD confirmed to obtain agreements from the responsible departments on funding, management/maintenance of the above measures during both construction and operational stages.

All landscape works within housing development and the PSPS site (Site 3) will be the responsibility of Housing Department and the PSPS site developer respectively.

8.10 CONCLUSIONS

8.10.1 Landscape Impacts

The site planning solution proposed for Area 54 is considered to be the best practical design that satisfied planning, engineering and landscape. The design features which should be incorporated into the Preferred Development Option as part of the MLSP would substantially mitigate the direct landscape impacts in Area 54.

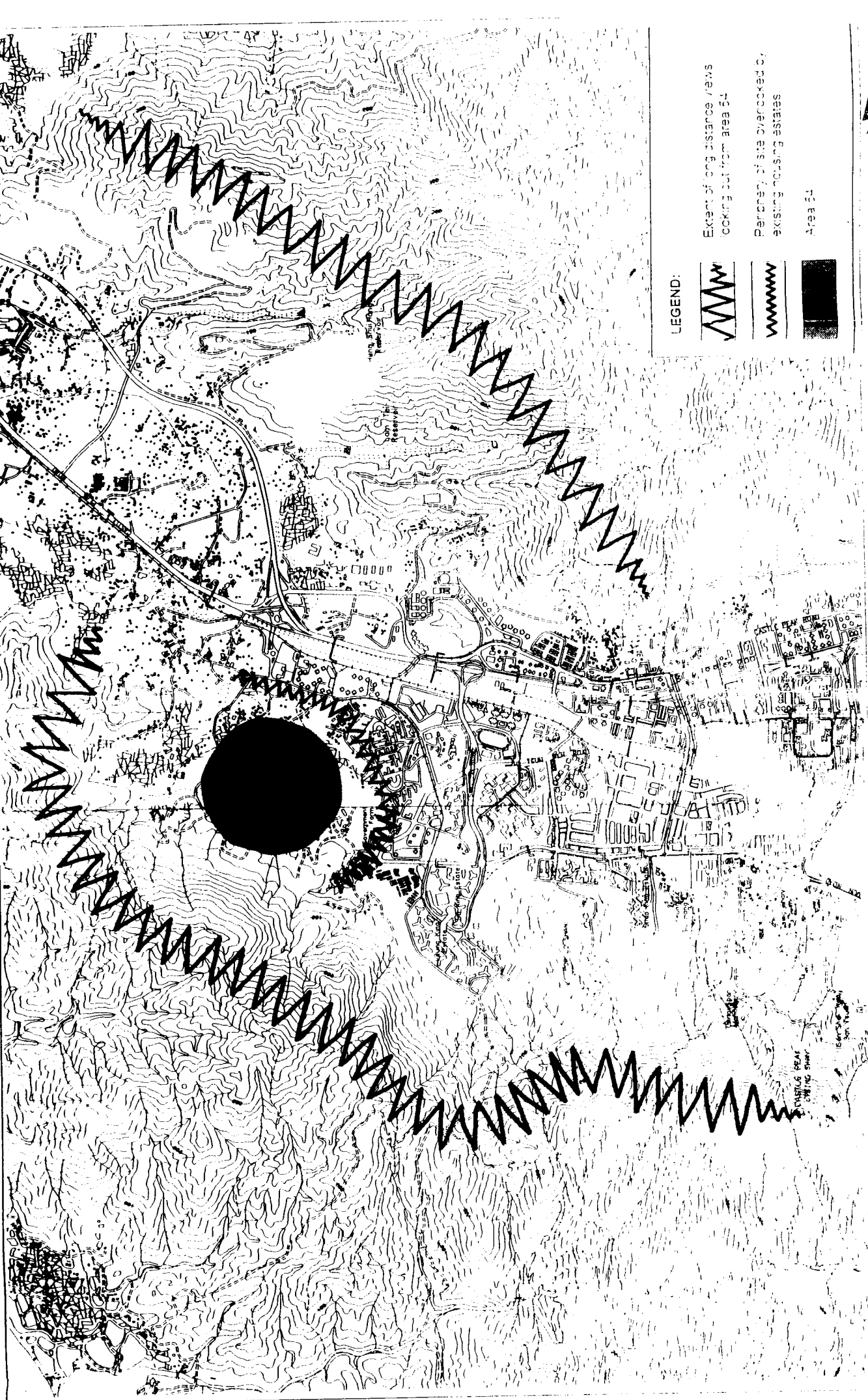
It is identified that the unmitigated impacts both during and immediately after construction will be of a high degree with many being significant adverse. However, the incorporation of the mitigation measures will, in general, result in these being acceptable with several being beneficial. While it is recognised that construction of the development will result in the removal of vegetation over a wide area, no significant vegetation will be affected. In particular, the proposal of a Conservation Area would enhance the protection of the existing landscape.

It is recommended that a woodland management plan should be formulated for woodland areas during the detail design stage. This management plan would be based on detailed ecological, landscape and species analysis of the woodland. Both short-term and long-term management goals and objectives would be formulated and would be achieved by the implementation of detailed maintenance schedules.

Visual impacts

During construction, the proposed developments would be seen from the sensitive viewpoints, particularly the high-rise buildings. The visual impact is predicted to be significant adverse but limited to the construction period. During operation, the impacts, when mitigated, will be acceptable.

The residents in the estates in Area 54 will be most affected by the construction and operation of the road. This will occur mainly due to the introduction of direct noise mitigation measures such as roadside barriers. The detail design of these structures will assist in minimising these visual impacts.



LEGEND:

-  Extent of long distance views looking out from area 54
-  Periphery of site overlooked by existing housing estates
-  Area 54

8.4a

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Forward Consultants
 ERM Hong Kong
 MVA Hong Kong
 AECOM Hong Kong
 David C. Lee Surveyors



拓展署
 Territory Development Department Hong Kong

AGREEMENT NO. CE 21/97
 PLANNING AND DEVELOPMENT STUDY OF
 POTENTIAL HOUSING SITE IN AREA 54, TUEN MUN

LEGEND



FLAT AREAS



NATURAL SLOPES(5 - 10)



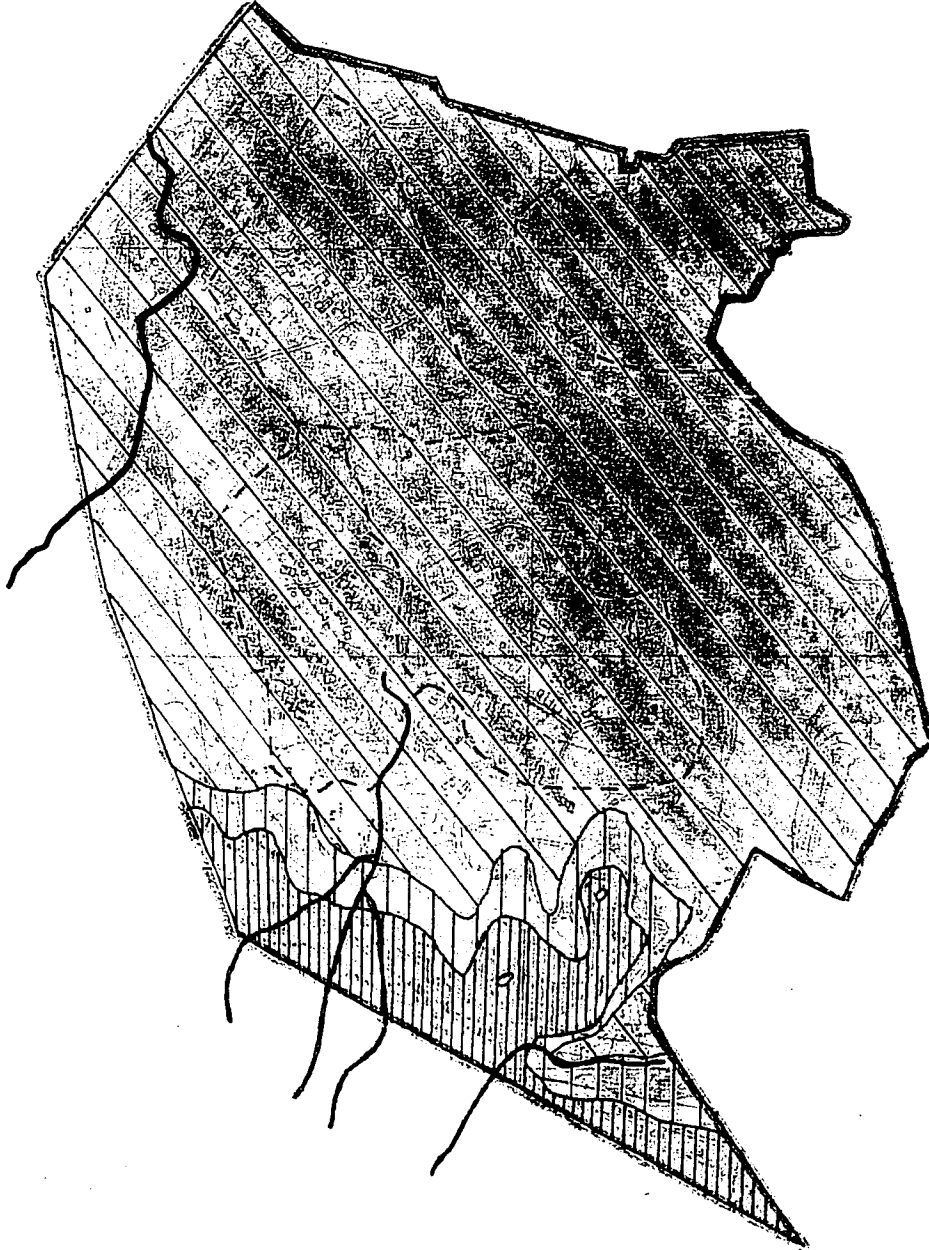
STEEP NATURAL SLOPES (>10%)



KNOLLS



NATURAL STREAMS



拓展署
Territory Development Department, Hong Kong

AGREEMENT NO. CE 21/97
PLANNING AND DEVELOPMENT STUDY OF
POTENTIAL HOUSING SITE IN AREA 54, TUEN MUN

OLD PLEASANT, TSIENSHUIWU

TOPOGRAPHY

Figure No.

8,4b

Drawn

Checked JDW

Approved PWA

Scale

Date 18/8/98

Date 18/8/98

Status

NTS

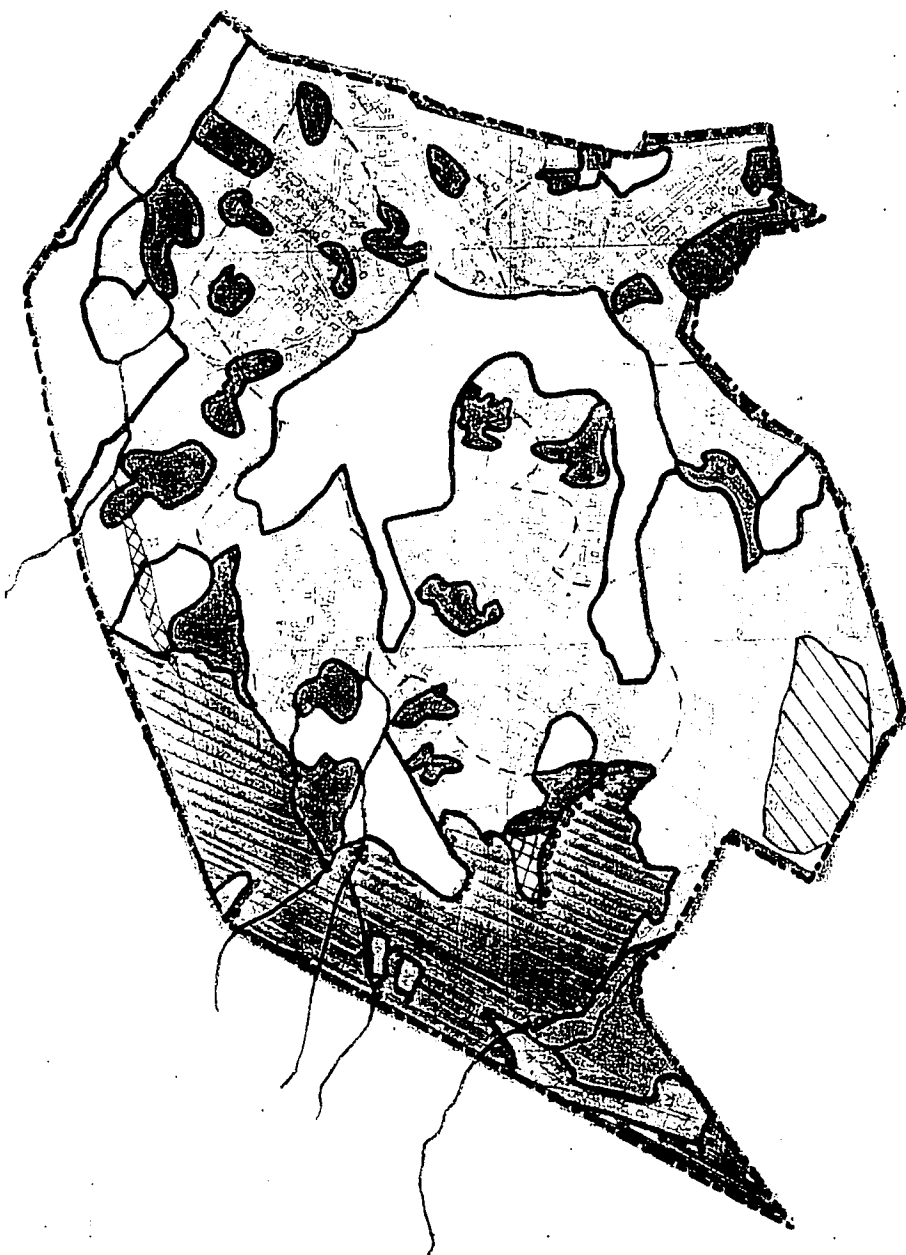
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信信(香港)有限公司



Townland Consultants
信信(香港)有限公司
信信(香港)有限公司
信信(香港)有限公司
David C Lee Surveyors

- WOODLAND
- ORCHARD
- AGRICULTURAL FIELD
- GRASSLAND
- DEVELOPED AREA
- COMPENSATION AREA
- STREAM
- BOUNDARY OF STUDY AREA
- GOVERNMENT FARM/
MANAGED FARM

VEGETATION COVER

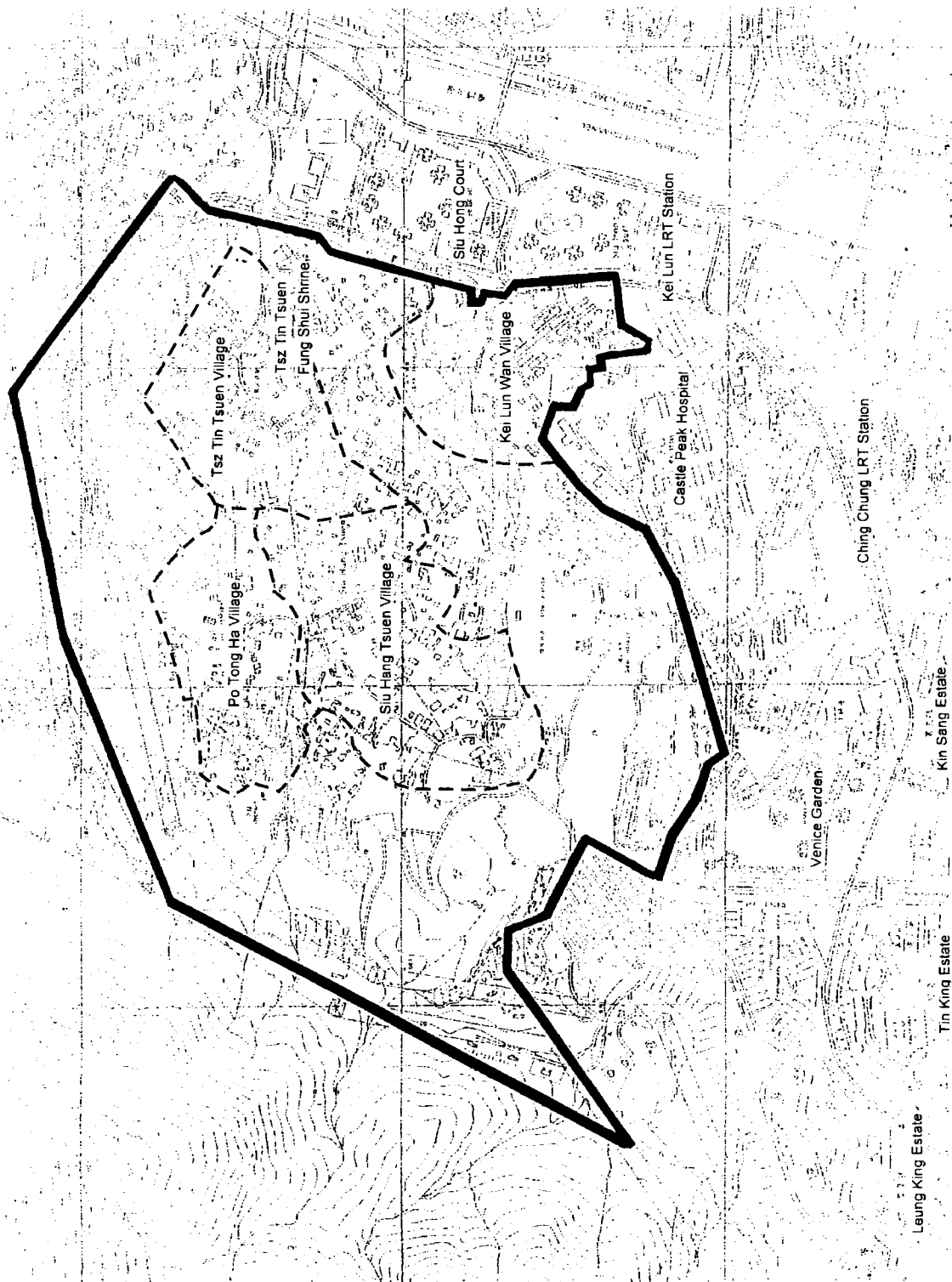


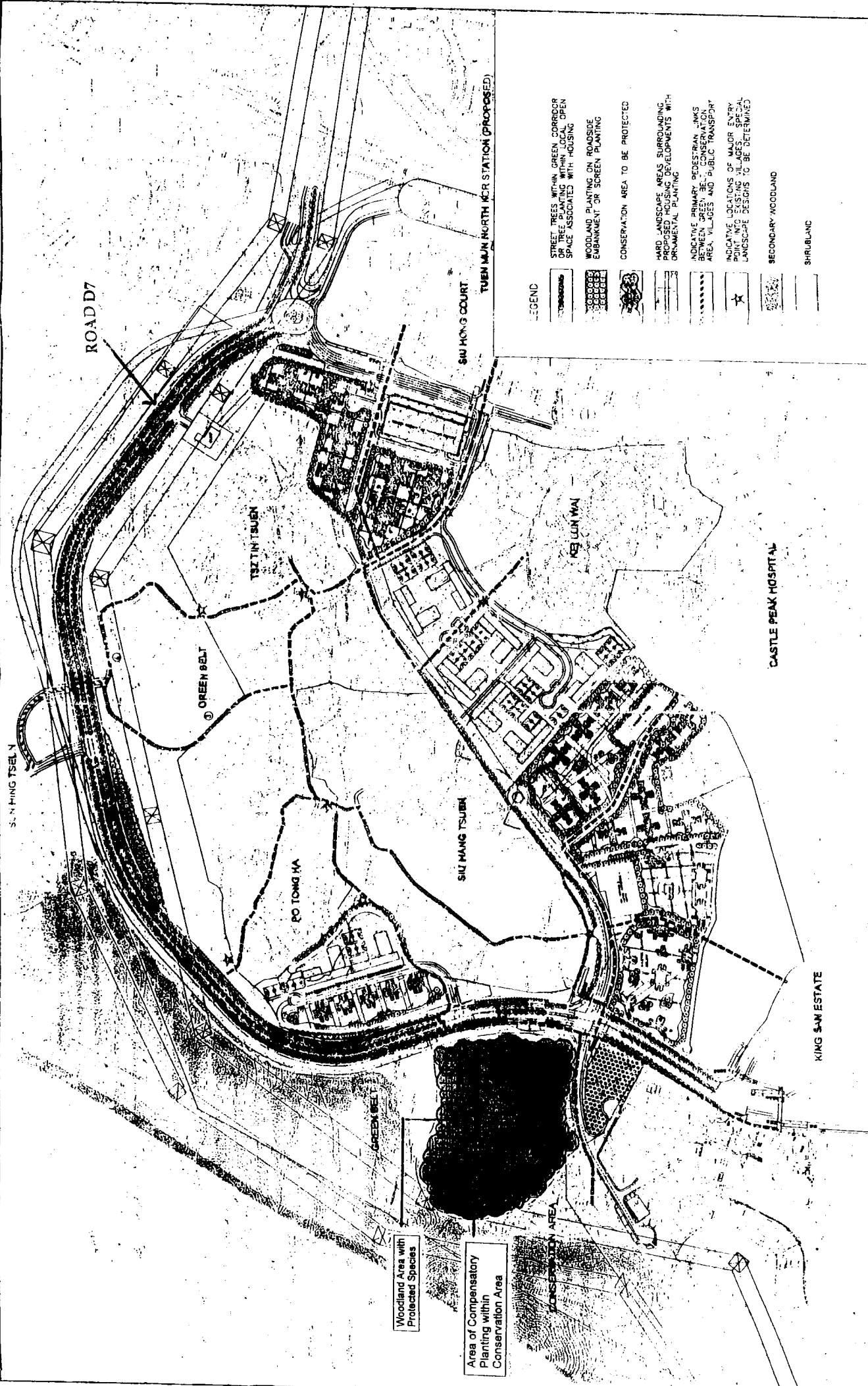
拓展署
Territory Development Department, Hong Kong
AGREEMENT NO. CE 21/97
PLANNING AND DEVELOPMENT STUDY OF
POTENTIAL HOUSING SITE IN AREA 54, TUEN MUN

VEGETATION COVER

Drawing No. 圖則編號	8.4C	
Drawn 繪圖	Checked 校核	Approved 批准
Scale 比例	Date 日期	Date 日期
N.T.S.	2/99	2/99
	Status 現況	

Scott Wilson (Hong Kong) Ltd
信偉顧問(香港)有限公司
Technical Consultants
MVA Hong Kong
Approved Consultant
David C Lee Surveyors


VISUAL SENSITIVE RECEIVERS
FIGURE 8.5a



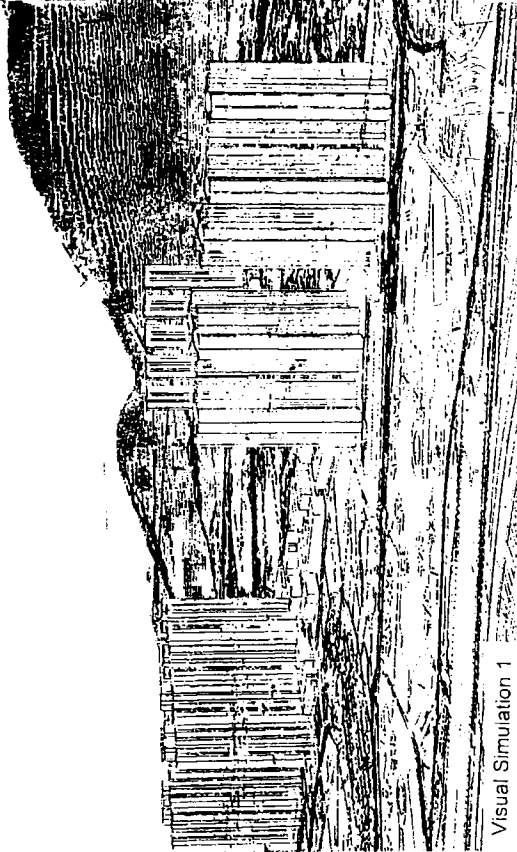
- LEGEND
- STREET TREES WITHIN GREEN CORRIDOR OR TREE PLANTING WITHIN LOCAL OPEN SPACE ASSOCIATED WITH HOUSING
 - WOODLAND PLANTING ON ROADSIDE EMBANKMENT OR SCREEN PLANTING
 - CONSERVATION AREA TO BE PROTECTED
 - HARD LANDSCAPE AREAS SURROUNDING PROPOSED HOUSING DEVELOPMENTS WITH ORNAMENTAL PLANTING
 - INDICATIVE PRIMARY PEDESTRIAN LINKS BETWEEN GREEN BELT CONSERVATION AREA, VILLAGES AND PUBLIC TRANSPORT
 - INDICATIVE LOCATIONS OF MAJOR ENTRY POINT INTO EXISTING VILLAGES. SPECIAL LANDSCAPE DESIGNS TO BE DETERMINED
 - SECONDARY WOODLAND
 - SHRUBLAND

Scott Wilson (Hong Kong) Ltd
 信偉有限公司 (香港) 有限公司
 註冊專業人士
 香港
 9/A Hong Kong
 ACLA Limited
 David C. Lee Surveyors

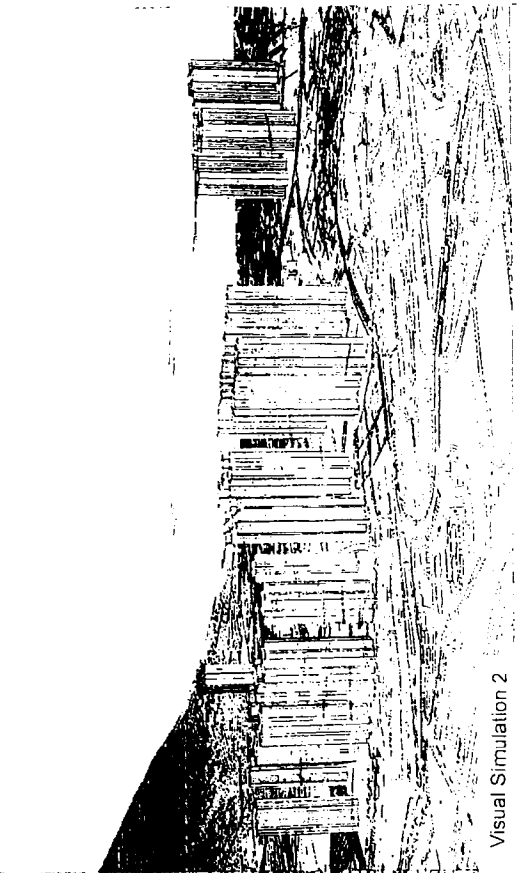
Figure No	8.7a
Checked	Approved
Date	30/11/98
Date	30/11/98
Status	

**PREFERRED OPTION
 LANDSCAPE MASTER PLAN**

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 AGREEMENT NO. CE 21/97
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 POTENTIAL HOUSING SITE IN AREA 54, TUEN MUN
 CDD PLAN No. 200/198.2/97



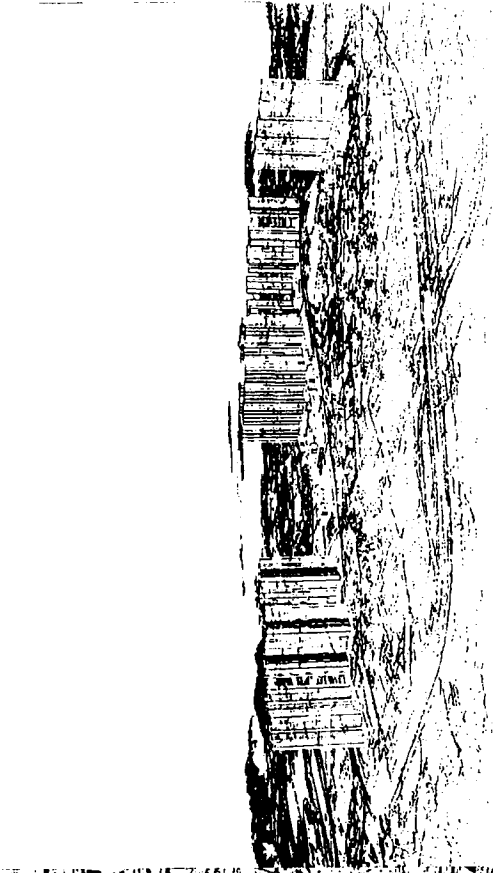
Visual Simulation 1



Visual Simulation 2



Visual Simulation 3

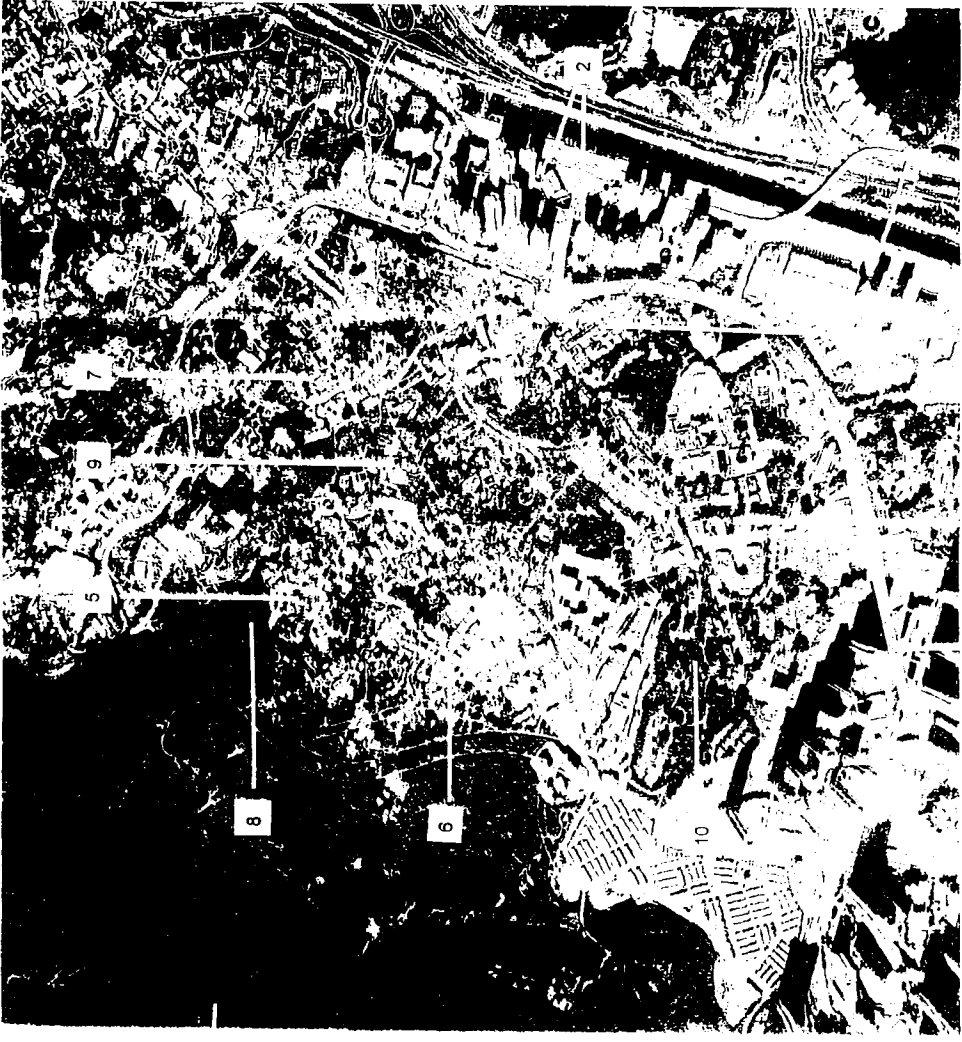


Visual Simulation 4

FIGURE 8.7b

VISUAL SIMULATION SHOWING DEVELOPMENT ONLY

- 1 Castle Peak Ridgeline
- 2 Siu Hong Court
- 3 Castle Peak Hospital
- 4 Kin San Estate
- 5 Po Tong Ha
- 6 Tsz Tin Tsuen
- 7 Siu Hang Tsuen
- 8 Woodland
- 9 Agricultural Fields
- 10 Government Managed farm
- 11 Kei Lun Wai
- 12 LRT Line



4 12 3 11

Figure 8.7c
AERIAL VIEW OF SITE



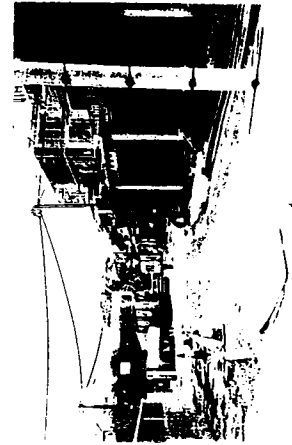
VIEW 1
View over the Agricultural Fields with Po Tong Ha to the left and the woodland areas in the background



VIEW 2
View over the site with the Castle Peak ridge line in the background



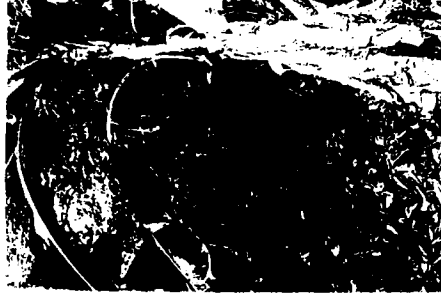
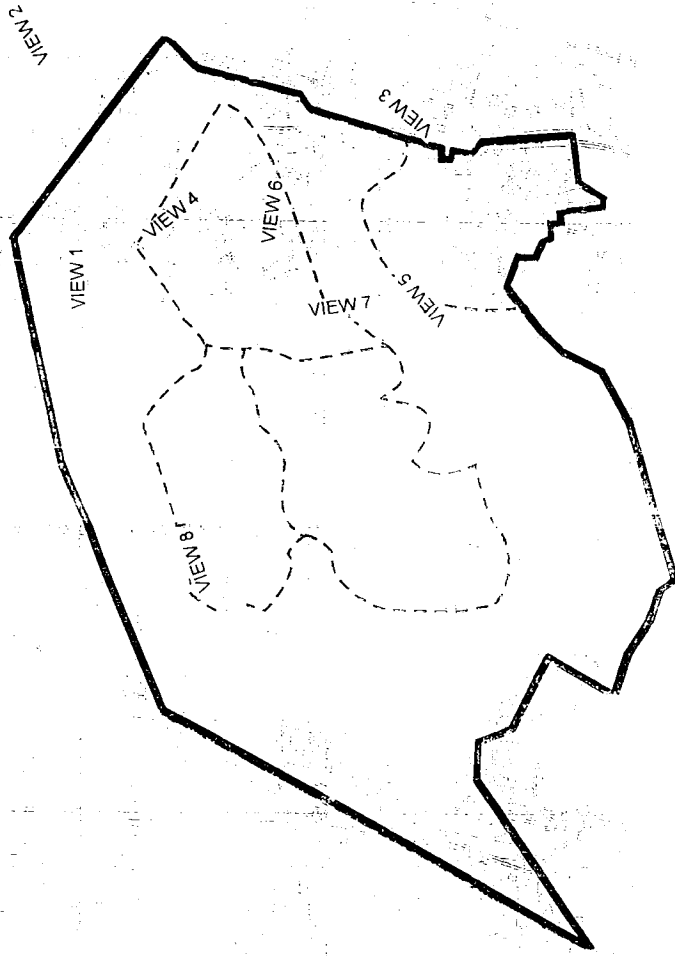
VIEW 3
View over Kei Lun Wai showing the typical village area



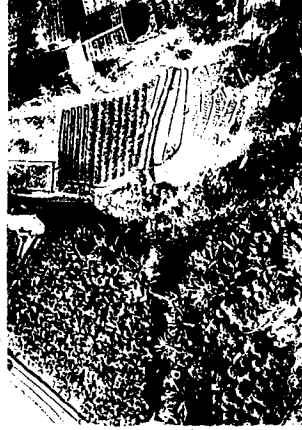
VIEW 4
View showing a typical street and village housing in the village areas of Po Tong Ha, Tsz Tin Tsuen and Siu Hang Tsuen



VIEW 5
View over the open storage site in the developed areas with Kin San Estate in the background



VIEW 8
View within the woodland areas



VIEW 7
Typical view of agricultural fields



VIEW 6
View over Po Tong Ha with the Castle Peak ridge line in the background showing the mosaic of village, agricultural fields and orchard areas

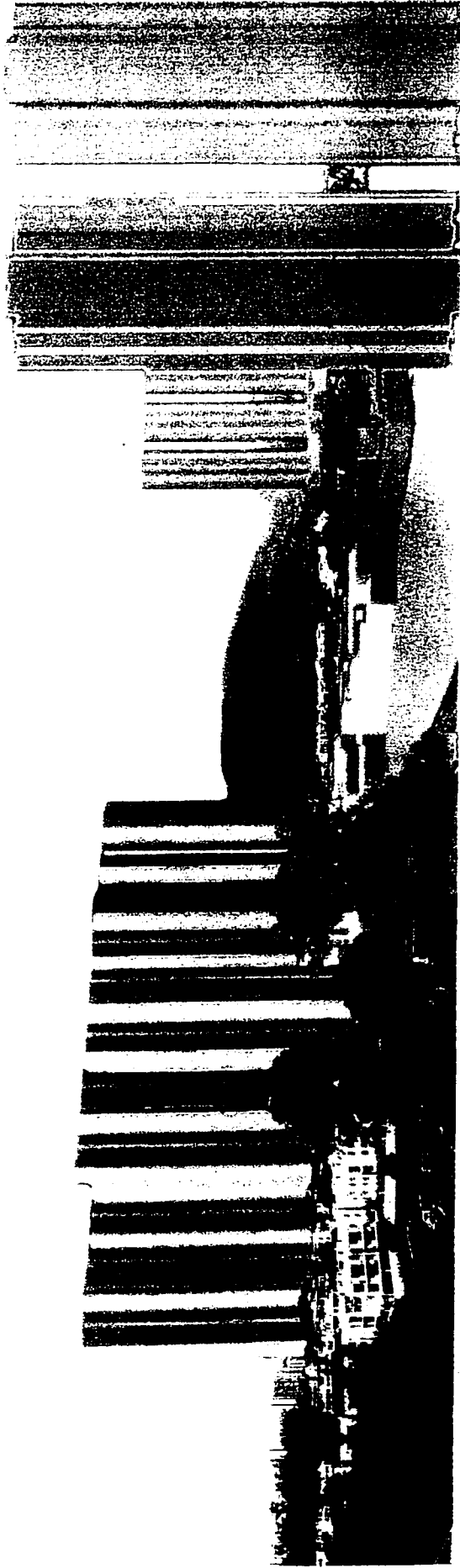


Figure 8.8b

View 1 : View from Siu Hong Local Open Space at Podium Level
Photomontage 1:

ACL

Final Assessment Report



Figure 8.8c

View 2
Photomontage 2: View adjacent to Kei Lai Wan Village and Public Area

ACL

Final Assessment Report

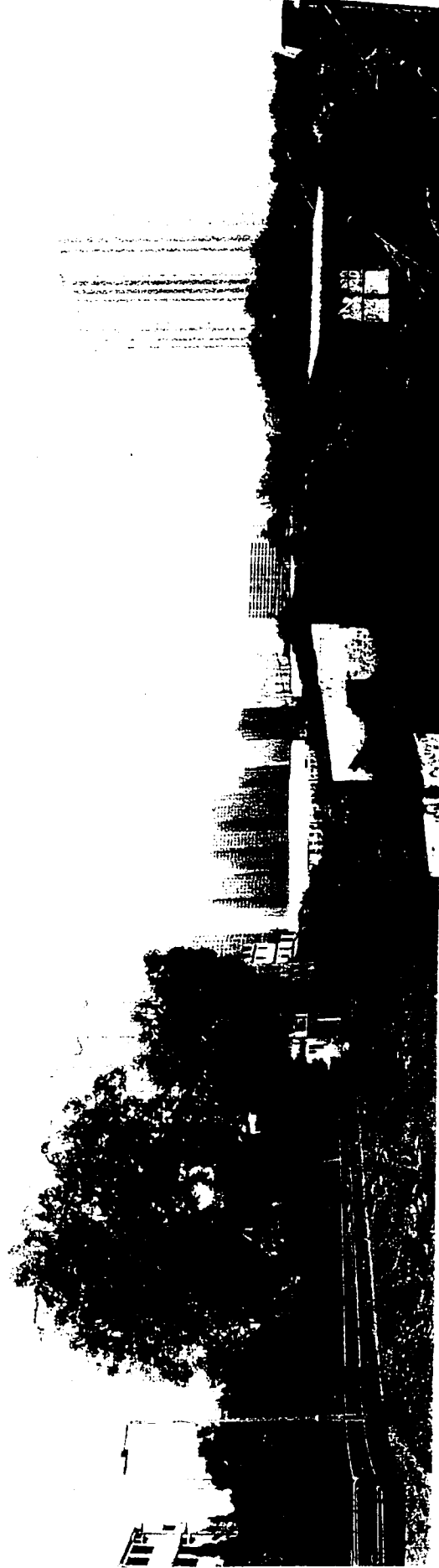


Figure 8.8d

View 3 : View from Po Tong Ha
Photomontage 3:

Final Assessment Report

ACL