

TV Transposer Station
at
Hill 374, Lam Tsuen Country Park
Short Term Tenancy No. 1985
D.D. 104

Project Profile

Version 3.3

August 2003

Table of Contents

1.0	Basic Information	4
1.1	Project Title	4
1.2	Purpose and Nature of Project	4
1.3	Name of Project Proponen.....	4
1.4	Location and Scale of Project & History of Site	4
1.5	Number and types of designated projects covered by the project profile.....	5
1.6	Name and Telephone Number of Contact Person	5
2.0	Outline of Planning and Implementation Programme	5
2.1	General.....	5
2.2	Responsibility of Parties	5
2.3	Project Timetable.....	6
2.4	Interaction with other projects	6
3.0	Major Elements of the Surrounding Environment.....	6
3.1	Existing Sensitive Receivers.....	6
4.0	Possible Impact on the Environment	6
4.1	General.....	6
4.2	Ecology	6
4.3	Visual Appearance and Landscape Impact.....	6
4.4	Noise	7
4.5	Air Quality	7
4.6	Water Quality.....	7
4.7	Land Contamination	8
4.8	Sewage.....	8
4.9	Waste	8
5.0	Environmental Protection Measures to be incorporated in the Design and any further environmental implications	8
5.1	General.....	8
5.2	Construction Method	8
5.3	Landscape and Visual Impact.....	9
5.4	Noise, Water & Air Quality.....	9
5.5	Possible severity, distribution and duration of environmental effects.....	9
5.6	Definition and Evaluation of the Residual Landscape and Visual Impact	9
6.0	Use of Previously Approved EIA Reports.....	10
6.1	General.....	10
7.0	Appendix: Figures relating to Project Profile	11

Table of Figures

Figure 1: Coverage map of Hill 374 Transposer Station.....11

Figure 2: Location plan of Hill 374 Transposer Station.....12

Figure 3: Site plan of Hill 374 Transposer Station (to be known as STT No. 1985 D.D. 104).....13

Figure 4: Work boundary of Hill 374 Transposer Station.....14

Figure 5: Section view of Hill 374 Transposer Station15

Figure 6: Proposed CLP Power overhead power line for Hill 374 transposer station.....16

Figure 7: Example of overhead power line erected by CLP Power16

Figure 8: Proposed planting design17

Figure 9: Different view to the Hill 374 Transposer Station.....18

Figure 10: Existing site condition viewed from location "A"19

Figure 11: Proposed Hill 374 Transposer Station viewed from location "A" without mitigation measures19

Figure 12: Proposed Hill 374 Transposer Station viewed from location "B" without mitigation measures20

Figure 13: Proposed Hill 374 Transposer Station viewed from location "B" with mitigation measures at day 1 of the operation stage.....20

Figure 14: Proposed Hill 374 Transposer Station viewed from location "B" with mitigation measures at year 10 of the operation stage.....21

Figure 15: Proposed Hill 374 Transposer Station viewed from location "C" without mitigation measures21

Figure 16: Proposed Hill 374 Transposer Station viewed from location "C" with mitigation measures at day 1 of the operation stage.....22

Figure 17: Proposed Hill 374 Transposer Station viewed from location "C" with mitigation measures at year 10 of the operation stage.....22

1.0 Basic Information

1.1 Project Title

- 1.1.1 The title of the proposed project is TV Transposer Station at Hill 374 ('the Station'). The following Project Profile outlines the environmental impacts created by the Station that is aimed to be completed before the end of 2003.

1.2 Purpose and Nature of Project

- 1.2.1 The purpose of this project is to design, construct and operate the Station at Hill 374, Yuen Long in order to provide reliable TV coverage in Yuen Long Town area and improve the coverage in the nearby areas on a long-term basis. It was agreed by OFTA to build a hilltop Station with higher output power and wider coverage. The aerial coverage of the Station is shown in Figure 1.

1.3 Name of Project Proponent

- 1.3.1 OFTA is the technical authority department that selected the site for constructing the Station. TVB is the work agent for the planning, design, construction and operation of the Station.

1.4 Location and Scale of Project & History of Site

1.4.1 Station Location

The proposed location for the Station will be at +290.75mPD resting on a minor natural "platform", on a south facing aspect of the ridgeline that rises towards the summit of Hill 374 (+374mPD). The Station site falls within the Lam Tsuen Country Park and is therefore subject to stringent regulations in respect to any proposed development. The Station site and general surrounding area is characterized by naturally occurring grass vegetation and occasional low shrubs. The specific location of the Station is shown in Figure 2. The Site Plan and works boundary of the site is within 9m x 9m as shown in Figure 3 & 4 respectively. The mitigation measures area as illustrated in the proposed planting plan in Figure 8 will be planted, managed and maintenance by the applicant.

1.4.2 Project Scale & Description

The base of the Station consists of a square concrete plinth at dimension 9000mm x 9000mm with a paved finish of thickness ~100mm. Surrounding the edge of the plinth is a 2400mm steel chain link fence with barbed wire. Located in a line along one side of the plinth are four paraflector TV receiver antenna array at dimension 1727mm x 914mm x 457mm each located on poles ~4500mm in height. In close proximity is a 14 meters high circular hollow mounting pole upon which are two transmission antenna panel at dimension about 1000mm x 470mm x 210mm each and a further 2000mm high lightning conductor above. On top of the pole will be a light equipped with automatic light control subject to the request either from CAD or PLA Shek Kong Camp. Within the centre of the plinth are two steel equipment containers of 2450mm width x 3000mm length x 2600mm height. The mounting pole, antenna system, fencing, and equipment container (the "Station Equipment") will all maintain a subdued grey chromatic scheme. The works boundary of the project together with mitigation measures and the extent of the Station Equipment are presented in Figure 4, 5 & 8.

1.4.3 CLP Power Source

A mains power of 3-phase, 380V, and 60A will be applied from CLP for this station and a meter kiosk will be provided for accommodation of CLP equipment and station electrical equipment that will be placed within site boundary as shown in Figure 3. A power source to the station will be provided via an overhead power line that CLP Power will apply permit from DLO and provide works of design, construction and operation for the power lines and poles. The proposed overhead power line route is shown in Figure 5. Detailed design refers to CLP's application no.: NRYL2003-0374-01/03 for a DLO Permit. The proposed 11KV overhead line will be

Television Broadcasts Limited

erected connecting from an existing 11KV power source and further supported by a total 11 nos. of poles. The size of poles and overhead power line is commonly used by CLP Power in their installation work all over the New Territories. It is considered that the connection will not create any significant environmental issues during the construction and operation of the project as CLP Power will follow all the stringent regulations within the Country Park in respect to the environmental impacts. A sample of 11KV overhead power lines and poles are shown in photo following the Figure 6. The new power poles are far away from existing sensitive receivers.

1.5 Number and types of designated projects covered by the project profile

- 1.5.1 The project is a designed project under section Q.1 of Schedule 2, Environmental Impact Assessment (EIA) Ordinance, as the site is within an existing country park, namely Lam Tsuen Country Park.

1.6 Name and Telephone Number of Contact Person

- 1.6.1 All queries regarding the project can be addressed to:

Engineering Division
Transmission Department

Mr. Peter Chu Yat-chiu, Principal Engineer (Transmission Network)

Tel: 2335-7432

Fax: 2358-0470

E-mail: peter.chu@tvb.com.hk

Mr. William Kwok W. L., Engineer II (Transposer)

Tel: 2335-7434

Fax: 2358-0470

E-mail: william.kwok@tvb.com.hk

2.0 Outline of Planning and Implementation Programme

2.1 General

- 2.1.1 It was confirmed that TVB was assigned as the Project Manager to undertake the development, planning, detailed design, works supervision, construction and operation of the Station. Based on the role as Project Manager for a Designated Project, TVB requires an Environmental Permit under the EIA Ordinance.

2.2 Responsibility of Parties

Organization	Task
TVB	Construction and Operation of Station
CLP Power	Mains provided by overhead power lines and poles
OFTA	Agreement for Use of Site

2.3 Project Timetable

- 2.3.1 The proposed design and tender works for the Station will be during the period from April to August 2003 and the construction, equipment installation and commissioning will be during the period from September to late December 2003. The tentative commencement date for the operation of the Station is end of 2003 onward.

2.4 Interaction with other projects

- 2.4.1 There is no interaction with other projects in the vicinity of the Site.

3.0 Major Elements of the Surrounding Environment

3.1 Existing Sensitive Receivers

Due to the remote hilltop location there are no sensitive receivers in close proximity to the Station. The main local sensitive receivers will be the walkers that utilize the footpath trails along the ridgeline through the Country Park, although they are non-permanent in nature. The main permanent sensitive receivers from the Station are mostly residential in nature and are located at a considerable distance and lower elevation across the valley floor towards the south and include the residential areas of Shek Kong, Pat Heung and Yuen Long New Town. The nearest permanent visual sensitive receiver is the village of Fung Kat Heung that is located at a distance of ~1.5km from the Station.

4.0 Possible Impact on the Environment

4.1 General

- 4.1.2 The potential environmental impacts that may arise from the construction and operation of the Project are discussed below:

4.2 Ecology

- 4.2.1 The site of the proposed Station is characterized by typical naturally occurring grass vegetation and occasional low shrubs ~500mm in height. During the construction of the project, there will be an environmental impact on the vegetation communities due to the requirement to unload building material by the helicopter that will deliver the building material to/from the Station site. The effect on the vegetation caused by landing the helicopter and placing the material on the ground will be temporary in nature. The vegetation to be lost has no ecological function and there is no anticipated ecological impact. During the operation of the project, all regular maintenance will be undertaken via the existing footpath and at very limited intervals, about 1-2 month per visit. Therefore, there will not be any environmental effect on the vegetation communities.
- 4.2.2 There was no indication of any particular fauna species or habitats that exist within or in the vicinity of the proposed Station. The existing footpath has existed for a considerable period of time and therefore it has not affected any existing habitat in the area. There will be no effect on the fauna communities during either the construction or operation phases.

4.3 Visual Appearance and Landscape Impact

- 4.3.1 The Station site maintains a medium to high visual value due to its exposed location along the ridgeline of the hills within the Lam Tsuen Country Park. During the construction stage, there will be a slight impact for the walkers that utilize the footpath trails through the Country Park, although due to their non-permanent nature

Television Broadcasts Limited

there will not be any significant impact. For the majority of permanent visual sensitive receivers, the visual impact is minimized due to the distance factor, location, elevation and altitude of the Station. Apart from the impact created by the placement of the Station within the landscape, there will be a visual impact created by the helicopter loading/unloading of building material at the site, although this will only be residual. During the operation stage there will be a moderate adverse visual impact for the non-permanent sensitive receivers due to the installation of the new artificial structure within the landscape. Whereas, the visual impact for the permanent sensitive receivers will be minimal due to the distance factor, although there may be some impact created by the imposition of the pole lighting at night.

- 4.3.2 The proposals incorporate the construction of a 9m x 9m concrete plinth as a foundation base for the Station equipment. During the construction stage there will be a moderate adverse landscape impact due to the loss of ~81m² of existing grassland vegetation habitat. The concrete plinth will create a permanent slight adverse landscape impact due to the loss of vegetation although the construction is small relative to the spatial extent of the inherent landscape character. During the operation stage there will be no change in respect to the landscape impact as the screen vegetation planting will comprise one of the landscape mitigation measures. Following the provision of tall shrub planting on two sides of the plinth there will be a moderate beneficial impact due to the provision of new vegetation within the landscape. The proposed species will effectively blend with the nature of the surrounding grassland and generally support the increase in the bio-diversity across the ridgeline.

4.4 Noise

- 4.4.1 During the construction stage, there may be a slight noise impact created by the helicopter involved in the transportation of building material to the Station site and a further minor noise impact due to the excavation works and the creation of the concrete plinth. As the walkers are non-permanent in nature they will not be severely affected. There will not be any noise impact on the permanent sensitive receivers due to the remote location. There will not be any noise impact during the operation stage as there will be no emergency generator installed at the Station.

4.5 Air Quality

- 4.5.1 During the construction stage there will be the generation of a small amount of dust particles due to the excavation works, although this will not be significant. There will not be any air impact during the operation stage. In respect to dust suppression, mitigation measures according to the APC (Construction Dust) Regulation will be implemented whenever necessary. The concrete plinth and Station Equipment will all be formed off-site and transported by helicopter.

4.6 Water Quality

- 4.6.1 During construction, the Contractor shall observe and comply with the Water Pollution Control Ordinance and its subsidiary regulation. The Contractor shall carry out the Works in such a manner as to minimize adverse impacts on water quality during execution of the works. In particular, the Contractor shall arrange method of working to minimize the effects on the water quality within and outside the Site. The Contractor shall follow the practices, and be responsible for the design, construction, operation and maintenance of all the mitigation measures as specified in the Professional Persons Environmental Consultative Committee Practice Note (ProPECC PN) 1/94 “Construction Site Drainage” issued by the Director of Environmental Protection.
- 4.6.2 There is a watercourse located 40m west of the site. Any surface runoff generated from the works area will flow to this watercourse. Therefore, it is important that suitable mitigation measures are provided. During the construction stage there will not be a generation of polluted water as the concrete plinth will be formed using the cement mixed ready off site and to be transported to the station by helicopter. However, to ensure during construction that there is no surface run-off, a row of sand bags will be placed along the south side of the site to prevent any excess earth or storm water flowing down to the watercourse.
- 4.6.3 During the operation stage, all surface water within the site boundary will be collected to a storm water pit located inside the boundary area (see Figure 4) and discharged below ground level.

4.7 Land Contamination

4.7.1 The Station site does not have any history of land contamination and therefore it is considered that there will not be any land contamination during the construction or operation stages.

4.8 Sewage

4.8.1 During the construction period, all sewage arising from the construction works will be collected in buckets and removed from the site at the end of each working day and disposed of legally to foul sewer. There will not be any sewage impact created by the Station during the operation stage as it is an unmanned operation.

4.9 Waste

4.9.1 During the construction stage there will be ~15m³ of excavated earth to be removed from the Station Site. All the earth will be bagged and removed by helicopter. It is proposed that all excavated earth and waste material that will be removed off-site by helicopter will be properly disposed of at the closest landfill site.

5.0 Environmental Protection Measures to be incorporated in the Design and any further environmental implications

5.1 General

5.1.1 Effective mitigation measures will be incorporated to ensure that the visual impact of the Project can be minimized.

5.2 Construction Method

5.2.1 As the location of the Project is very remote, the method of construction utilized is very important in respect to minimizing any significant environmental impact. It is proposed to utilize the following construction method for the installation of the Station and removal of all waste material:

1. Transport small size construction machinery and equipment to site by helicopter.
2. Excavate earth within the site area to the require founding level.
3. Load excavated earth to sandbag and remove off site by helicopter.
4. Transport building material to site by helicopter.
5. Erect sawn formwork and fix reinforcement to footing.
6. Pour concrete to footing.
7. Erect sawn formwork and fix reinforcement to meter cabinet and concrete plinth.
8. Pour concrete to meter cabinet and concrete plinth.
9. Erect antenna poles, steel fence and gate.

5.2.2 In many respects, it is considered that the utilization of the helicopter is one of the main mitigation measures to reduce the overall environmental impact. The small size construction machinery and equipment will be transported to site along with the building material. The excavated earth will be sandbagged and removed off site by helicopter.

5.2.3 After completion of construction works, the site will be cleared including debris outside the site boundary. The excess building material, construction machinery and equipment will be removed from site by means of helicopter.

5.3 Landscape and Visual Impact

- 5.3.1 In respect to the visual impact from the adjacent sensitive receivers, there will be shrub screen planting along two sides of the Transposer Station directly facing the footpath as shown in the Planting Plan as shown in Figure 8 – Planting Plan. 9 nos. of the tree species – Casuarina equisetifolia (Heavy Standard) and 172 nos. of the shrub species - Calliandra haematcephala (Ht 500 x Spd. 300) will be placed as screen planting.
- 5.3.2 To further reduce the visual impact, all the Station Equipment will use a low glare subtle grey colour (Pantone 462U, BS10B25 or equivalent) and will be managed and maintained by the applicant.
- 5.3.3 All construction activities will be undertaken during the daylight hours, between 8.00am and 6.00pm and therefore there will be no night time lighting “glare”.

5.4 Noise, Water & Air Quality

- 5.4.1 As far as possible all construction activities will be undertaken to minimize any noise, water or air quality. All construction activities will be undertaken during the daylight hours, between 8.00am and 6.00pm, to minimize noise impact. There will be no construction activities between 6.00pm and 8.00am.
- 5.4.2 There is a watercourse located 40m west of the site. Any surface runoff generated from the works area will flow to this watercourse. Therefore, it is important that suitable mitigation measures are provided. During the construction stage there will not be a generation of polluted water as the concrete plinth will be formed using the cement mixed ready off site and to be transported to the station by helicopter. However, to ensure during construction that there is no surface run-off a row of sand bags will be placed along the south side of the site to prevent any excess earth or storm water flowing down to the watercourse.
- 5.4.3 During the construction period, all sewage arising from the construction works will be collected in buckets and removed from the site at the end of each working day and disposed of legally to foul sewer.
- 5.4.4 The nearest sensitive receiver in respect to Air Quality is located at 1.5km. It is considered that proposed mitigation measures in respect to dust suppression will be implemented according to the APC (Construction Dust) Regulation whenever necessary. The concrete plinth and Station Equipment will all be formed off-site and transported by helicopter.

5.5 Possible severity, distribution and duration of environmental effects

- 5.5.1 The Station will create minimal ecological, noise, air quality, water quality and waste impacts in the short term during construction. Any impact will be minimized through the imposition of the effective mitigation measures stated in Section 5.
- 5.5.2 It is generally considered that the minimal environmental effect of the Station is acceptable. There will be no long term environmental effect as this station is an unmanned operation.

5.6 Definition and Evaluation of the Residual Landscape and Visual Impact

- 5.6.1 Effectiveness of Mitigation Measures
- 5.6.2 In respect to Station, the landscape mitigation measures will seek to screen all sensitive views and to blend it into the landscape pattern of the surrounding area. The size and extent of Station is not extensive and in some situations the impact will be beneficial. In many situations the Station will create an insignificant visual and landscape impact that will gradually be reduced over a period of time through effective mitigation measures.
- 5.6.3 The potential visual and landscape impacts will be considered at three points in time:
- During construction;
 - On the opening day (upon implementation of landscape mitigation measures);
 - At Year 10 during operation, when planting is sufficiently mature to provide screening.

Through the assessment of impacts at these three points in time, distinction will be drawn between temporary, short-term and permanent residual impacts and the effectiveness of the mitigation proposals. The potential visual and landscape impacts at the three points in time are shown in Table 5.1 - 5.3.

Table 5.1 – During Construction

Visual and Landscape Impact
Removal of vegetation
New artificial structure
Construction movement

Table 5.2 – On the Opening Day

Visual and Landscape Impact
New shrub planting
New artificial structure

Table 5.3 – At Year 10 during Operation

Visual and Landscape Impact
Artificial structure

5.6.4 The significance of impacts and the effectiveness of the proposed mitigation measures at the following time frame is illustrated in Figure 10 to 17 of this document.

- (i) the existing conditions (see figure 10)
- (ii) unmitigated impacts (see figure 11, 12 & 15)
- (iii) partially mitigated impact after the implementation of the proposed mitigation measure a day 1 of the operation stage (see figure 13 & 16) ; and
- (iv) residual impact at year 10 of the operation stage (see figure 14 & 17)

5.6.5 In respect to the Technical Memorandum the impact of the Station is acceptable with mitigation measures as the assessment indicates there will be no significant effects on the landscape, significant visual effects caused by the appearance of the project, or interference with key views. Within the local and wider regional context the Station will not be significant.

6.0 Use of Previously Approved EIA Reports

6.1 General

6.1.1 No previous EIA Report has been approved or submitted for the subject development.

7.0 Appendix: Figures relating to Project Profile

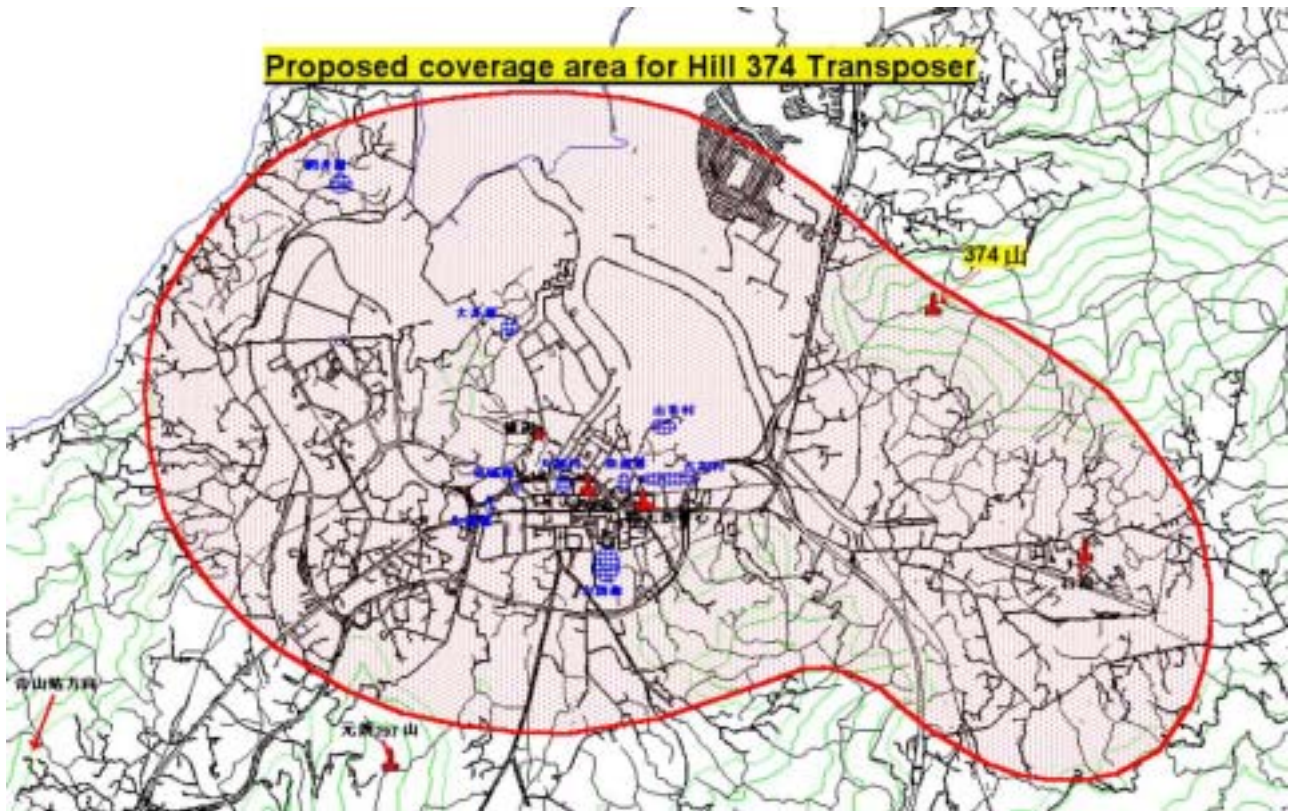


Figure 1: Coverage map of Hill 374 Transposer Station

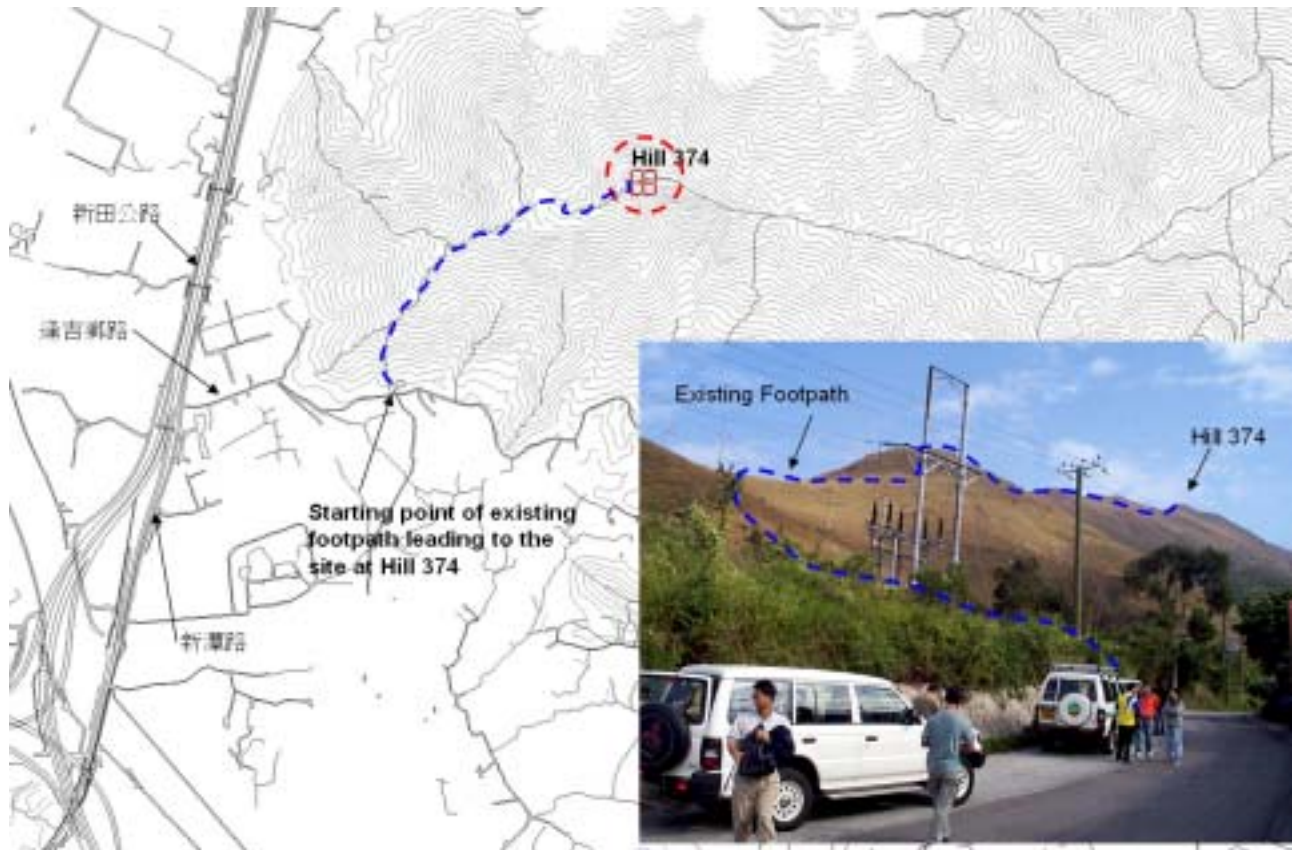


Figure 2: Location plan of Hill 374 Transposer Station

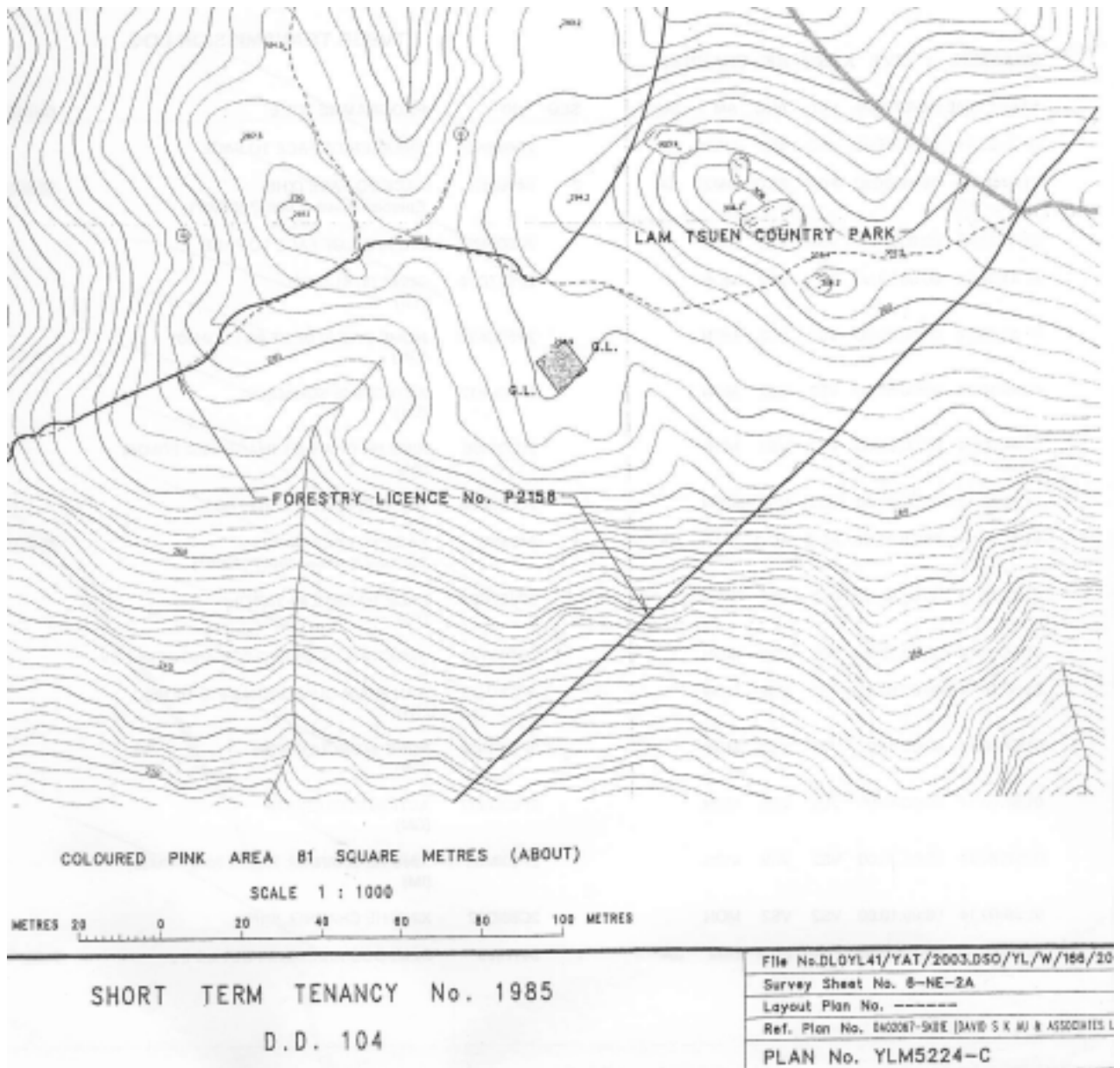


Figure 3: Site plan of Hill 374 Transposer Station (to be known as STT No. 1985 D.D. 104)

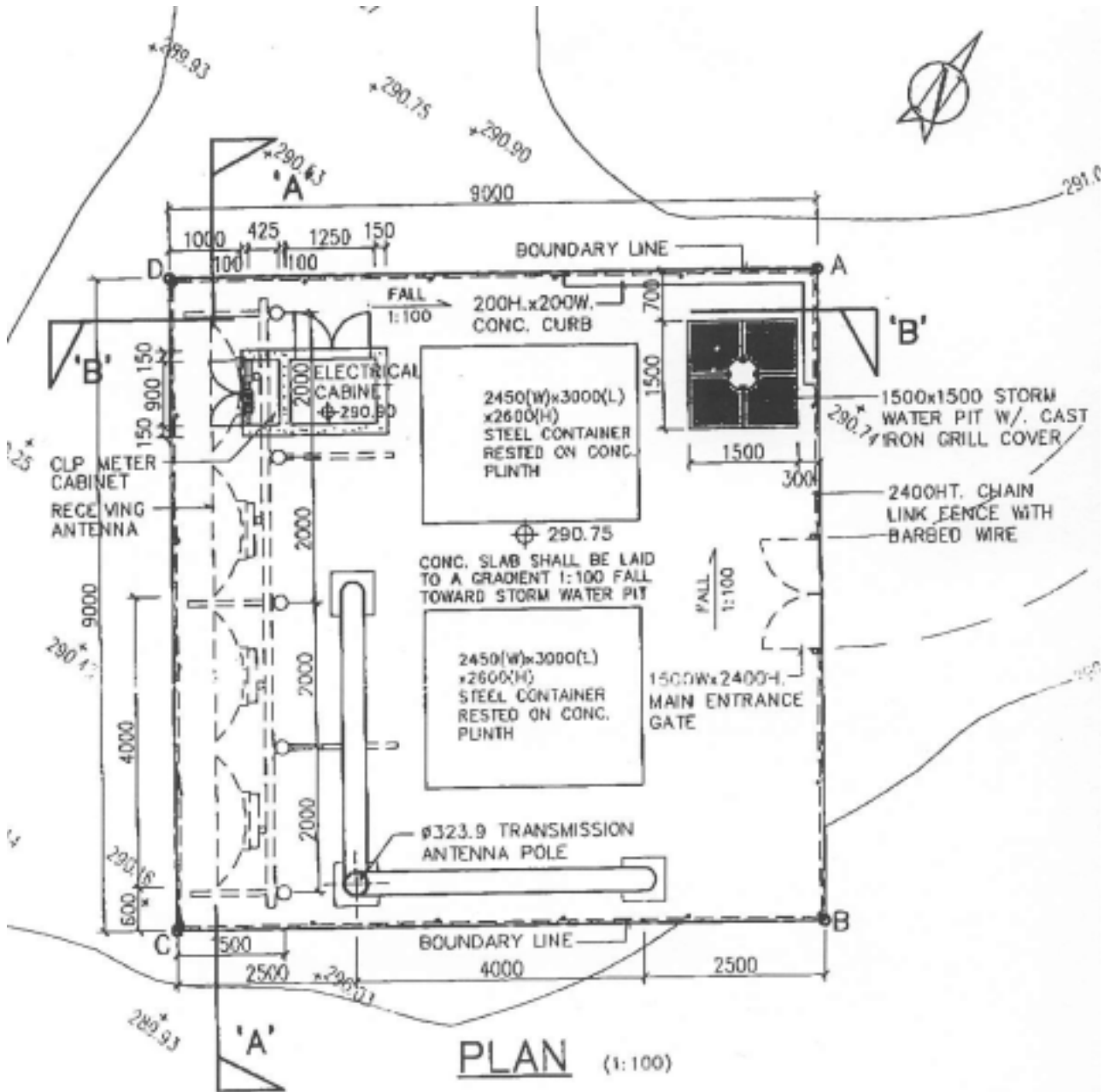


Figure 4: Work boundary of Hill 374 Transposer Station

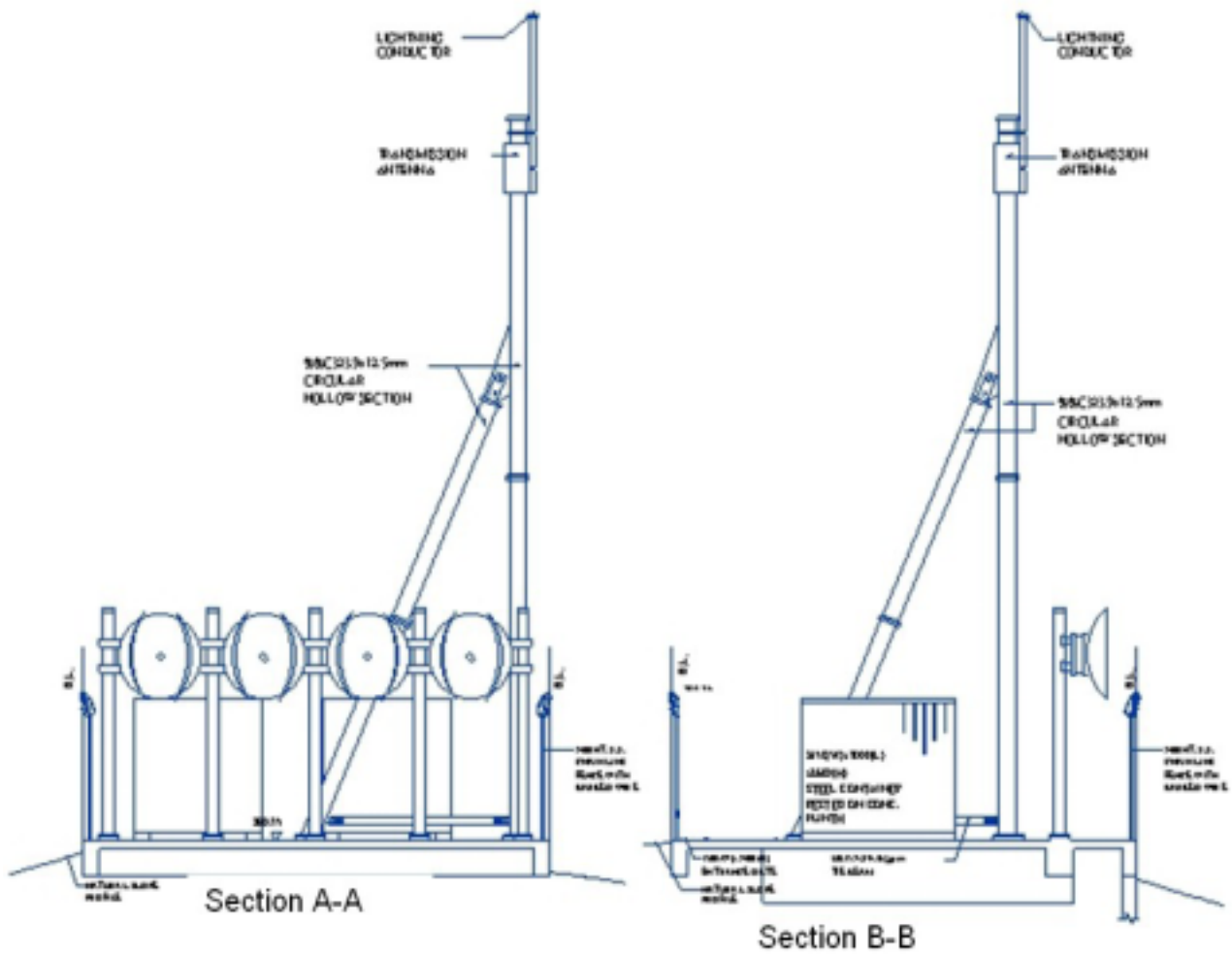


Figure 5: Section view of Hill 374 Transposer Station

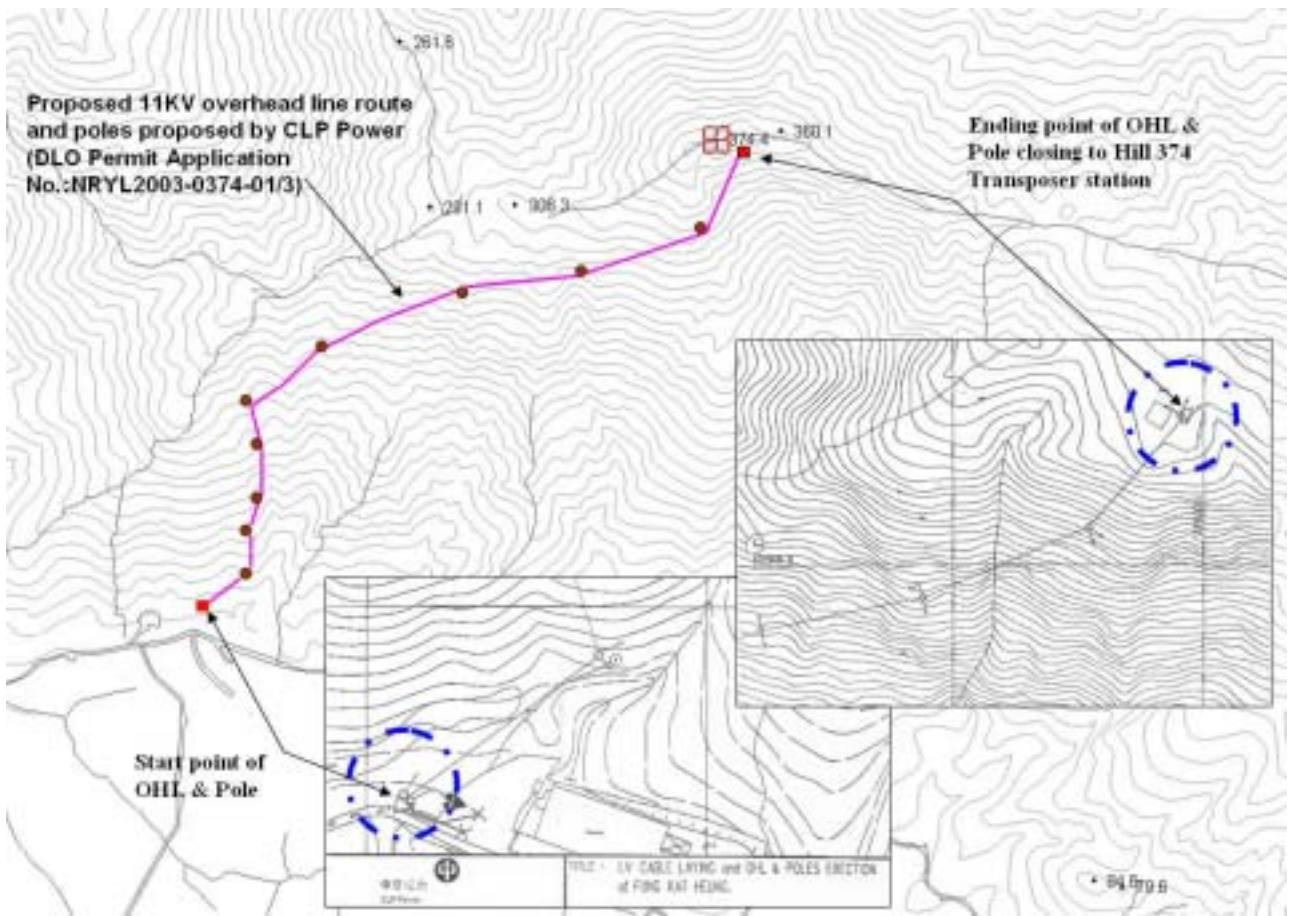


Figure 6: Proposed CLP Power overhead power line for Hill 374 transposer station



Figure 7: Example of overhead power line erected by CLP Power



Figure 8: Proposed planting design

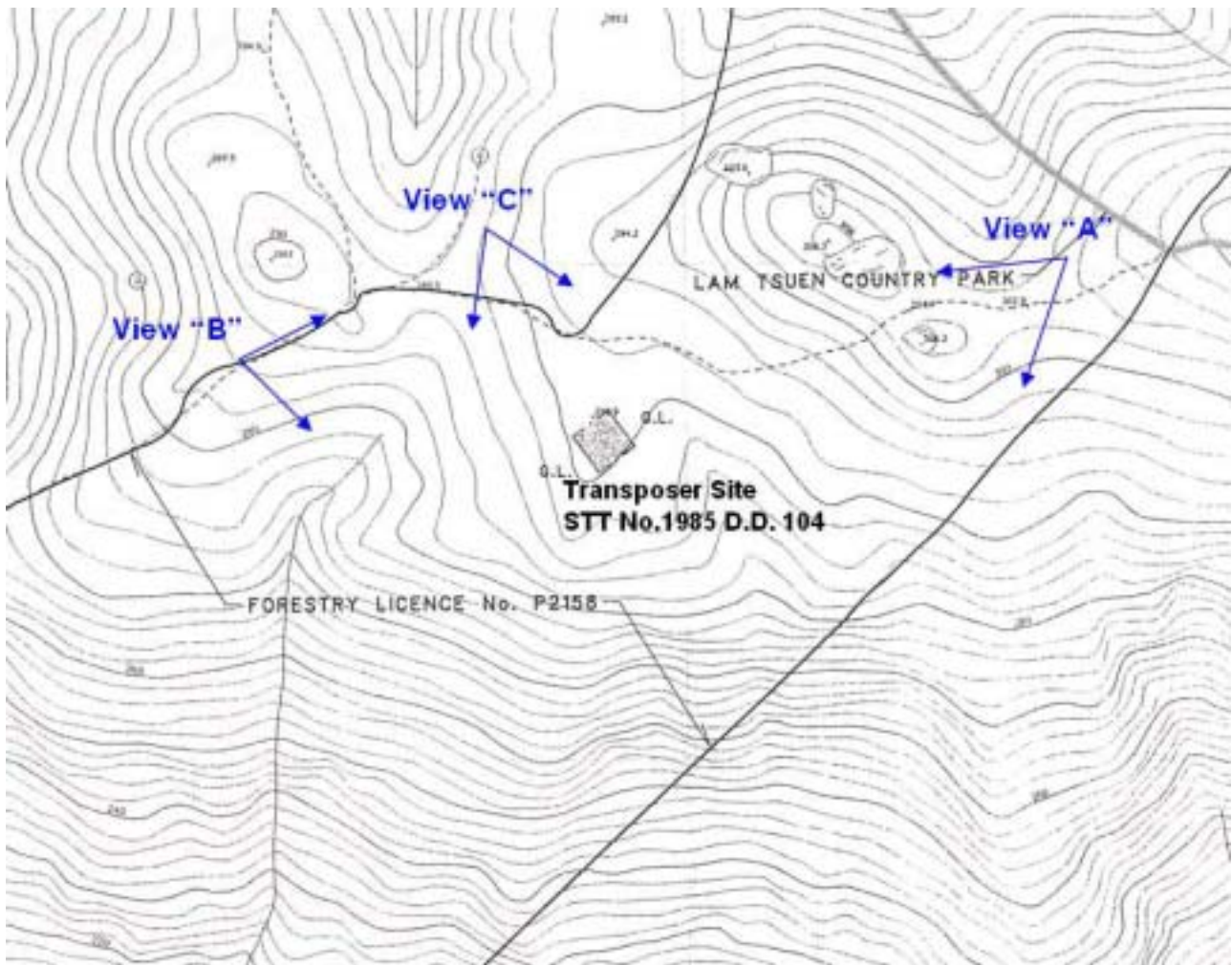


Figure 9: Different view to the Hill 374 Transposer Station



Figure 10: Existing site condition viewed from location "A"



Figure 11: Proposed Hill 374 Transposer Station viewed from location "A" without mitigation measures



Figure 12: Proposed Hill 374 Transposer Station viewed from location "B" without mitigation measures



Figure 13: Proposed Hill 374 Transposer Station viewed from location "B" with mitigation measures at day 1 of the operation stage



Figure 14: Proposed Hill 374 Transposer Station viewed from location "B" with mitigation measures at year 10 of the operation stage



Figure 15: Proposed Hill 374 Transposer Station viewed from location "C" without mitigation measures

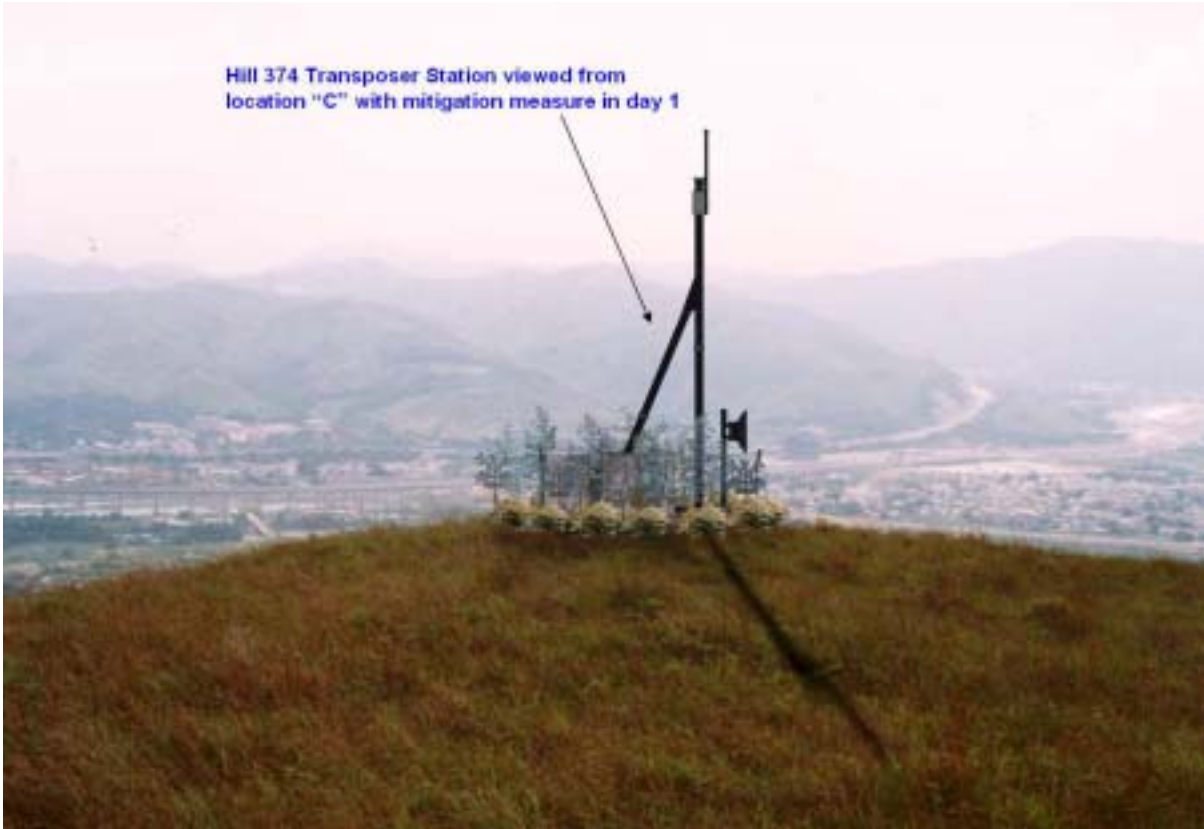


Figure 16: Proposed Hill 374 Transposer Station viewed from location "C" with mitigation measures at day 1 of the operation stage

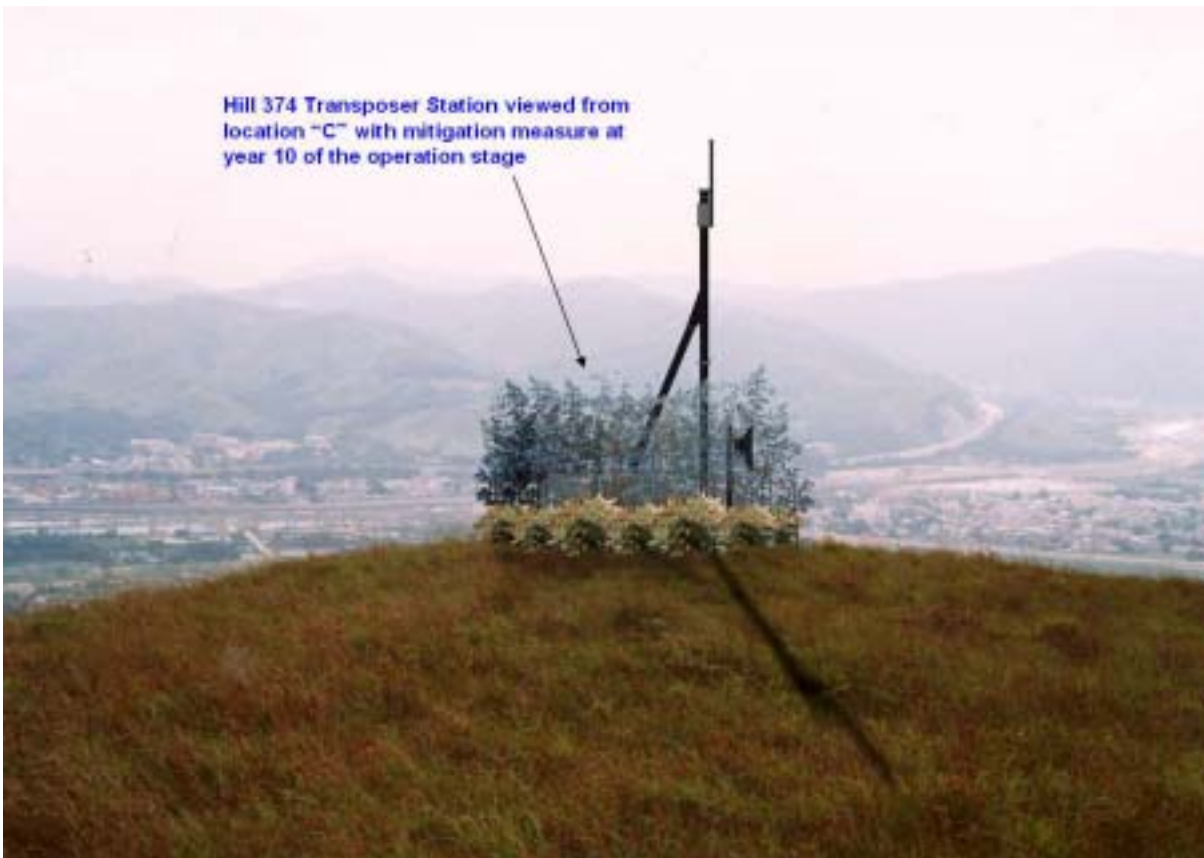


Figure 17: Proposed Hill 374 Transposer Station viewed from location "C" with mitigation measures at year 10 of the operation stage