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1. BASIC INFORMATION

1.1 **Project Title**

Hill-top Transposer Station Expansion at Hill 374, Lam Tsuen Country Park, STT No. 1985, DD 104 (the Project).

1.2 Purpose and Nature of the Project

In July 2004, the Government announced the implementation framework for the Digital Terrestrial Television Broadcasting (DTTB) policy. The objective of launching the DTTB is to enhance Hong Kong's broadcasting infrastructure to make Hong Kong a leading digital city, to improve spectrum efficiency and enhance the quality of broadcasting, and also to enable high-definition television (HDTV), interactive television and data casting services.

To facilitate DTTB, extensions are required to some existing hill-top transposer stations to house additional broadcasting equipment.

The purpose of the Project is to extend the existing Hill-top Transposer Station at Hill 374, Lam Tsuen Country Park (the Existing Station) in order to enhance the High Definition Television (HDTV) transmission coverage in Yuen Long Town area and the nearby areas.

This Project Profile has been prepared to identify and assess the potential environmental impacts associated with the construction and operation of the Project.

1.3 Name of Project Proponent

Television Broadcasts Limited (TVB).

1.4 Location and Scale of Project and History of Project Site

1.4.1 Station Location

The Project, with proposed coverage of about 111 m², is a "L" shape extension to the Existing Station that commenced operation since 2003. The Existing Station is currently operated with environmental permit via direct application, application number is DIR-088/2003.

The location of the Project is at +290.75 mPD resting on a minor natural "platform" on a south facing aspect of the ridgeline that rises towards the summit of Hill 374 (+374 mPD). The Project site falls within the Lam Tsuen Country Park. The general surroundings of the Project site include trees planted as visual mitigation measures for the Existing Station, naturally occurring grass vegetation and occasional low shrubs. The location and site plan of the Project are shown in Figure 1.1.

1.4.2 Project Scale and Description

The Project consists of a one storey (5 m high plus 1.1 m parapet) building which includes:

- one (1) generator room, with one backup generator;
- one (1) fuel store (diesel) for backup generator, with capacity no more than 2500 L;
- one (1) uninterruptible power supply (UPS) room; and
- one (1) common equipment room.



The foundation of the Project building consists of a 'L' shape concrete with dimension of 13.5m x 14.2m and a paved finish thickness of about 0.1m. Surrounding the outside edge of the foundation is a 2.4m steel chain link fence with barbed wire. The Project building will be in subdue colour grey chromatic scheme with total GFA of 68.971 m². The ground floor plan of the Project is provided in Figure 1.2.

1.5 Number and Types of Designated Projects Covered by the Project Profile

The Project is a designated project under Q.1, Part I of Schedule 2, Environmental Impact Assessment Ordinance (EIAO), as the site is within an existing country park, namely Lam Tsuen Country Park.

1.6 Name and Telephone Number of Contact Person

Queries regarding the Project can be addressed to:

Engineering Division Building Services Department Mr. Eddie Sum, Engineer III Tel: 2335-7424 Fax: 2358-0470 E-mail: eddie.sum@tvb.com.hk

Mr. K C Chan, Assistant Project Manager Tel: 2335-8937/ 9666-4584 Fax: 2358-0470 E-mail: <u>kichung.chan@tvb.com.hk</u>

2. OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME

2.1 General

TVB was assigned as the Project Manager to undertake the development, planning, detailed design, works supervision, construction and operation of the Project.

2.2 **Project Timetable**

The design of the Project is underway and tendering will be conducted in December 2009. The construction, equipment installation and commissioning of the Project will be carried out from March to September 2010. The tentative commencement date for operation of the Project is end of 2010.

2.3 Interaction with Other Projects

The Project site is located adjacent to the Existing Station that is currently in operation. There are no other planned projects located near the Project sites that are known at the time of preparation of this Project Profile that would interact with the construction programme of the Project.





3. MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT

3.1 Existing Sensitive Receivers

Due to the remote hilltop location, there are no sensitive receivers for noise and air quality within 300 m and 500 m respectively from the site boundary. The nearest noise and air sensitive receiver is Fung Kat Heung which location approximately 1.5km away from the Project site. Hikers utilising the trails along the ridgeline through the Country Park may subject to air and noise impacts, although they are transient in nature.

In terms of water quality, there is a watercourse located approximately 40m west of the site.

The Project site surrounding is characterized by typical naturally occurring grass vegetation and occasional low shrubs about 0.5m in height. In addition, there are 8 *Casurina equisetifolia* that were planted as visual mitigation measure of Existing Station and they will be transplanted for accommodating the Project. There was no indication of any particular fauna species or habitats that exist within or in the vicinity of the Project site.

For visual sensitive receivers, permanent ones 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 about 1.5 km from the Project site. Hikers utilising the trails along the ridgeline through the Country Park will subject to visual impacts but only transient in nature.

4. POSSIBLE IMPACT ON THE ENVIRONMENT

4.1 Process Involved

All construction activities will be conducted during daytime. The following construction method will be used for the installation of the Project building and removal of all waste material:

- transport small size construction machinery and equipment to site by helicopter;
- excavate and reuse earth within the site area to the required founding level;
- load excavated earth to sandbag and remove off site by helicopter;
- transport building material to site by helicopter;
- erect sawn formwork and fix reinforcement to footing;
- pour concrete to footing;
- erect sawn formwork and fix reinforcement to meter cabinet and concrete foundation;
- pour concrete to meter cabinet and concrete foundation; and
- erect steel fence and gate.

In many respects, it is considered that the utilisation 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 surplus excavated earth will be sandbagged and removed off site by helicopter.

After completion of construction works, the Project 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.



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

4.2 Ecology

The Project site surrounding is characterized by typical naturally occurring grass vegetation and occasional low shrubs about 0.5m in height. There were 8 *Casurina equisetifolia* planted along the boundary of the Existing Station as visual mitigation measure. These 8 planted trees will be transplanted.

There was no indication of any particular fauna species or habitats that exist within or in the vicinity of the Project site. The vegetation to be lost has no ecological function and there is no anticipated ecological impact. There will be no effect on the fauna communities during construction phase.

During the operation of the Project, regular maintenance will be undertaken at limited intervals, about once per week. Access to the Station will be via existing trail that has existed for a considerable period of time and therefore it will unlikely affect any existing habitat in the area. Therefore, there will not be any effect on the flora and fauna communities during operation phase.

4.3 Visual and Landscape Impact

Visual and landscape impact assessment and tree survey were conducted in October 2009. The findings are provided below.

4.3.1 Visual Impact

The Project site has medium visual value to the surrounding due to its exposed location along the ridgeline of Hill 374 within the Lam Tsuen Country Park. The trees surrounding the Existing Station create a focal point in this grass covered hillside.

During the construction phase, there will be a slight adverse visual impact to the hikers that using the trail within the Country Park including blockage of view as well as disharmony from construction materials and machinery. However, their non-permanent nature and small scale relative to the Country Park. For the majority of permanent visual sensitive receiver, the visual impact during construction phase is insignificant due to the small scale of the Project, the distance factor, location, elevation and altitude of the Project.

During the operation phase, there will be minimal adverse impact to the hikers who are transient through the area due to the blockage of some views and the disharmony of the building with surrounding landscape. For other permanent visual sensitive receiver, the visual impact is insignificant due to the small scale of the Project and the distance factor, although the lighting at night may create some impact to them.

4.3.2 Landscape Impact

The general surrounding area of the Project site is occupied by trees planted several years ago for screening of Existing Station, grassy vegetation and occasional low shrubs.

During the construction phase, there will be a moderate adverse impact due to the lost of 8 planted *Casurina equisetifolia*, 20m² *Calliandra haematocephala* (shrub) and 90m² existing grassland (see Figure 4.1). The impact will be minimized by transplanting the 8 existing *Casurina equisetifolia* to the southeast of the Project site.



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During the operation phase, the impact is the same as construction phase due to the permanent lost of vegetation. However, after the implementation of mitigation measures, as described in Section 5.3, there will be a moderate beneficial impact as a result of the provision of new planting to the existing landscape. The proposed species are native pioneer species that will effectively blend with the nature of the surrounding grassland.

4.4 Air Quality

During the construction phase there will be the generation of a small amount of dust due to the excavation works, although this will not be significant. In respect to dust suppression, mitigation measures according to the Air Pollution Control (Construction Dust) Regulation will be implemented whenever necessary. Exhaust emissions (SO_2 and NO_x) from the diesel powered construction machinery will be minimal due to the small number of plants used. Through the application of dust control measures and use of properly maintained equipment, adverse air quality impacts are not anticipated.

The Project will run on power supply by CLP. No air emissions are anticipated during normal operation. There will be one backup generator as emergency backup power supply in case of power supply failure. However, the emissions will occur only during emergency situations. Furthermore the diesel generator will comply with the requirements stipulated under the Air Pollution Control (Furnaces, Ovens and Chimneys) (Installation and Alteration) Regulations. Therefore, the adverse impacts on air quality during operation are not anticipated.

4.5 Noise

During the construction phase, there may be noise impact created by the helicopter involved in the transportation of building material to the Project site and due to the excavation works and installation of the concrete foundation using powered mechanical equipment. There will not be any noise impact on the permanent noise sensitive receivers (closest one being 1.5km away) due to the large distance separation from the site. Noise impacts on hikers who happen to come close to the Project site are not expected to be adverse due to their transient nature.

During operation phase, noise will be generated from the backup generator when they are in use during emergency. The generator will be installed inside the Project building and is therefore screened. To this end, operational noise impacts are not anticipated. In addition, the impact is expected to be insufficient and temporary due to backup nature of generator, non-permanent nature of hikers and long distance from permanent sensitive receivers.

4.6 Water Quality

During construction of the Project, 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 Project 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.





There is a watercourse located approximately 40m west of the site. If unmitigated, surface runoff generated from the works area will flow directly to this watercourse. Therefore, it is important that suitable mitigation measures are provided. During the construction phase there will not be any generation of polluted water as the concrete foundation will be formed off site and transported to the Project site by helicopter. However, to ensure during construction that there is no surface runoff entering the watercourse, a row of sand bags will be placed along the south side of the Project site to prevent any excess earth or storm water flowing down to the watercourse.

During the operation phase, all surface water within the Project site boundary will be collected to a storm water pit located inside the Project boundary area (see Figure 1.2) and discharged below ground level. There will be no effluent discharge during the operation of the Project. No water quality impacts are anticipated.

4.7 Land Contamination

The Project site does not have any history of land contamination and therefore it is considered that there will not be any contaminated soil or groundwater generated during the construction phase. During operation phase, since all equipment will be used within Project site boundary and on top of concrete foundation, no contamination to the surrounding land is expected.

4.8 Sewage

During the construction phase, 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 Project during the operation phase as it is an unmanned operation.

4.9 Waste Management

Only a small amount of construction and demolition (C&D) materials such as timber formworks, packaging for plant/ equipment/ materials, general refuse etc. will be generated during construction phase. Also there will be approximately 130 m³ of excavated earth (inert C&D materials) generated. Where possible, the excavated earth will be reused on site (e.g. site formation and levelling). All C&D materials will be bagged, removed by helicopter and disposal of in accordance with the trip-ticket system following the guidance given in ETWB Technical Circular No. 31/2004 "Trip Ticket System for Disposal of Construction & Demolition Materials".

A very small amount of chemical waste will be generated during construction phase. Any chemical waste produced will be handled in accordance with Waste Disposal (Chemical Waste) (General) Regulation. No adverse impacts during construction will be expected.

Maintenance works during operational phase will generate small amount of waste such as waste lubricants. This will be disposed of as chemical waste in accordance with Waste Disposal (Chemical Waste) (General) Regulation.

4.10 Hazard to Life

There is no activity during construction phase that causes issues on hazard to life.



During operation phase, in order to provide uninterrupted services, it is necessary to store no more than 2500 L of diesel to run backup generator. Associate with this is the potential environmental risk of catastrophic failure of storage tank leading to spillage of all the contents or to less extent accidental spillage during re-fuelling. The probability of this happening is considered remote although the consequence could be serious in terms of water pollution and land contamination if not properly controlled. The containment of fuel will be provided in accordance with Dangerous Goods (General) Regulations. As such, the risk in endangering the surrounding environment is expected to be low.

In addition, fire control design/ measures will be incorporated into the design and it shall comply with relevant requirements from Fire Services Department. With the fire control design/ measures in place, the risk of fire is considered to be low.

5. ENVIRONMENTAL PROTECTION MEASURES TO BE INCORPORATED IN THE DESIGN AND ANY FURTHER ENVIRONMENTAL IMPLICATIONS

5.1 General

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

5.2 Ecology

No mitigation measure is expected as there will be minimal ecological impacts during construction and operation phases.

5.3 Landscape and Visual Impact

During construction phase, the small wooden shed (as hideout during rain), the scaffolding and the storage materials will be carefully posited to minimize the visual impact to the sensitive receivers. All construction activities will be undertaken during the daylight hours to avoid night time lighting.

During operation phase, the subdue grey colour scheme (Pantone 462U, BS10B25 or equivalent) will be used at Project building and screening planting will be provided along the three sides of the Project building that mostly visible to hikers. Apart from transplanting the 8 existing *Casurina equisetifolia* to the southeast of the Project site, 5 *Schima superba*, 4 *Castanopsis fissa* and shrub mix composed of *Rhaphiolepis indica* and *Rhodomyrtus tomentosa* will be planted as screening (see Proposed Planting Plan, Figure 5.1). There will be a moderate beneficial impact due to mitigation measures, as the screening plants are native plant species, which will enhance the biodiversity and ecological value of surrounding landscape.

Figures 5.2 to 5.4 show the existing views as well as views right after the mitigation measures on Day 1 and after 10 years from southwest, southeast and hiking trail; there would be no residual adverse visual impacts to the hiker and other permanent visual sensitive receivers.

Overall, it is considered that the residual landscape and visual impacts of the Project are acceptable with mitigation measures.





5.4 Noise, Air and Water Quality

All construction activities will be restricted within daytime, between 8.00am and 6.00pm, to avoid nighttime construction noise impact. Duration of each trip by helicopter should be controlled to as short as required for the loading/ unloading of materials so as to further minimize the construction noise impacts generated from the Project site.

Dust suppression measures will be implemented in accordance with the Air Pollution Control (Construction Dust) Regulation to minimize fugitive dust emissions from the construction works.

For controlling construction site runoff, mitigation measures as specified in ProPECC PN 1/94 "Construction Site Drainage" should be adopted. These include use of sand bags to divert sediment laden surface runoff away from watercourse, covering and containment of all excavated materials.

5.5 Land Contamination

No mitigation measure is expected as there will be no land contamination issues during construction and operation phases.

5.6 Sewage

During the construction phase, 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.

5.7 Waste Management

Where possible, the excavated earth will be reused on site (e.g. site formation and levelling). All C&D materials to be disposed of will follow the trip-ticket system in accordance with the guidance stipulated by the ETWB Technical Circular No. 31/2004 "Trip Ticket System for Disposal of Construction & Demolition Materials".

All chemical waste from plant maintenance during operation will be handled, stored and disposed of in accordance with the requirements under Waste Disposal (Chemical Waste) (General) Regulations.

5.8 Hazard to Life

Fuel storage will be designed in accordance with Dangerous Goods (General) Regulations. Fire control design/ measures complying relevant requirements from Fire Services Department will be incorporated into the Project building to minimize the risk of hazard to life.

5.9 Possible Severity, Distribution and Duration of Environmental Effects

The Project will create minimal ecological, noise, air quality, water quality and waste management impacts during construction phase. During operation phase, minimal impacts on ecology, noise, air quality, water quality, waste management and hazard to life are expected. The impacts arised will be minimized through the imposition of the effective mitigation measures stated in Section 5. The construction works will last approximately 6 months and will affect only a small and localized area in the Project site. With proper implementation of the recommended mitigation measures, no adverse environmental effect are anticipated during the construction and operation of the Project.

It is generally considered that the minimal environmental effect of the Project is acceptable.





6. USE OF PREVIOUSLY APPROVED EIA REPORTS/ DIRECT ENVIRONMENTAL PERMIT APPLICATIONS

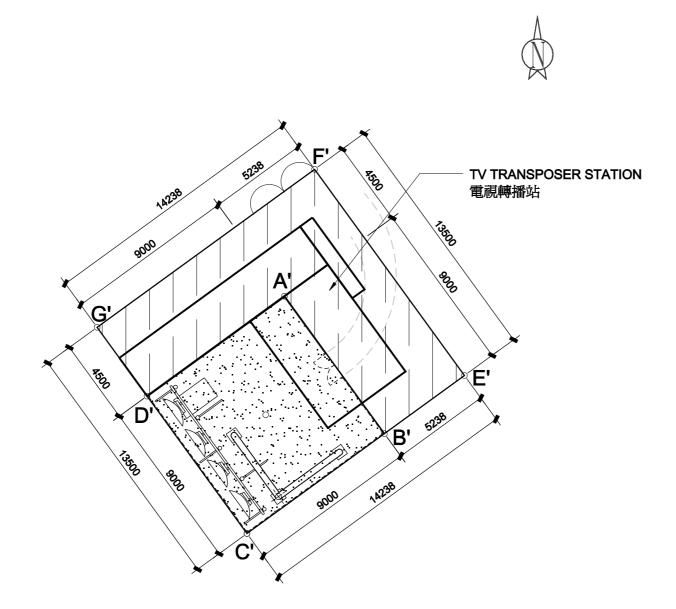
6.1 General

This Project is an expansion of the Existing Station, namely TV Transposer Station at Hill 374, Lam Tsuen Country Park. Reference has been made to the Project Profile of the Existing Station used for direct application of environmental permit under EIAO (PP-196/2003).





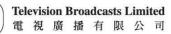
FIGURES

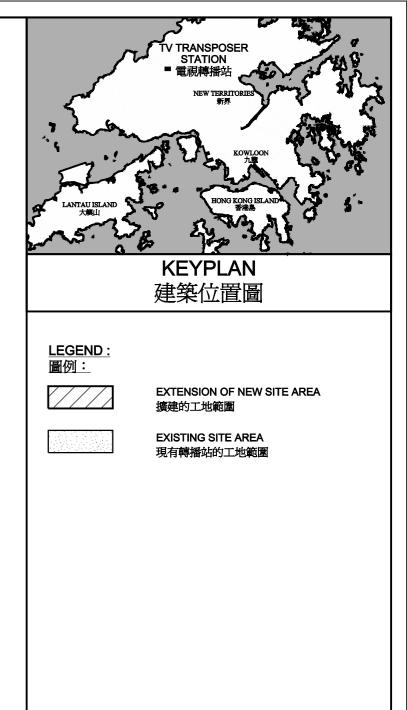


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В'	835963.29	824589.78
C'	835958.00	824582.50
D'	835965.28	824577.21
E'	835966.25	824594.11
F'	835977.17	824586.17
G'	835968.80	824574.65

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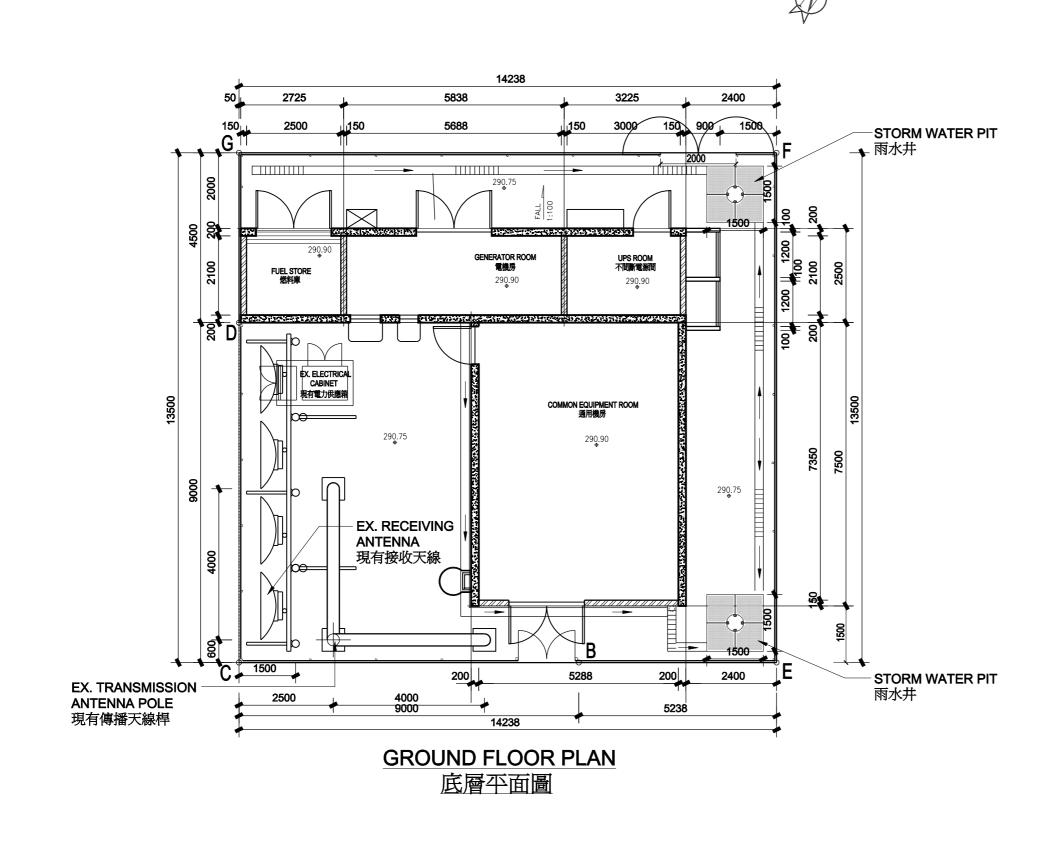


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Project Location and Site Plan

項目位置及工地平面圖

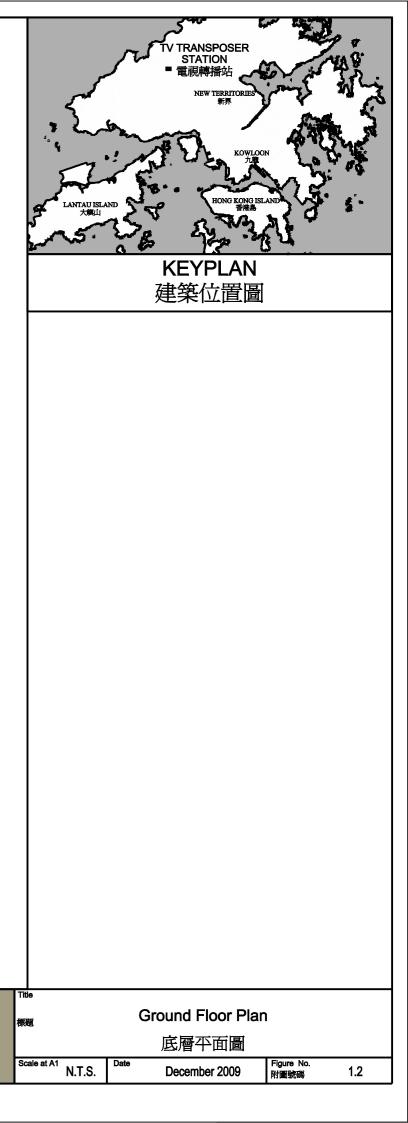
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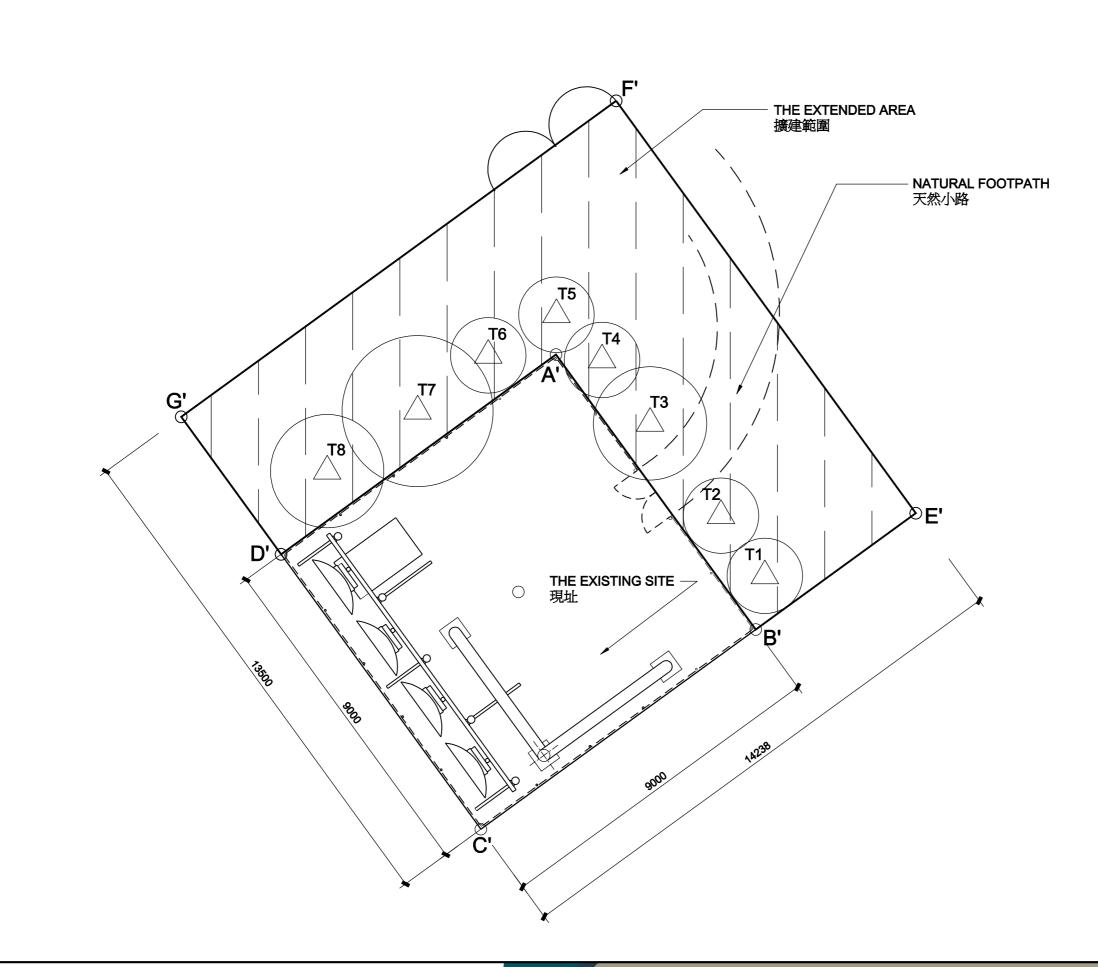




Television Broadcasts Limited 電視廣播有限公司 **ATKINS**

Hill-top Transposer Station Expansion at Hill 374 Lam Tsuen Country Park, Short Term Tenancy No. 1985, DD104 林村郊野公園374號小山電視轉播站擴建工程 短期租約第1985號丈量約份第104約

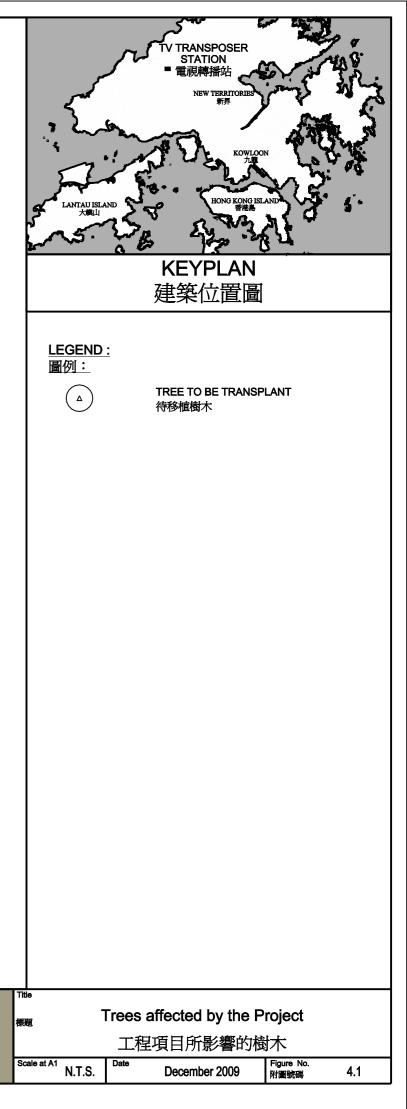


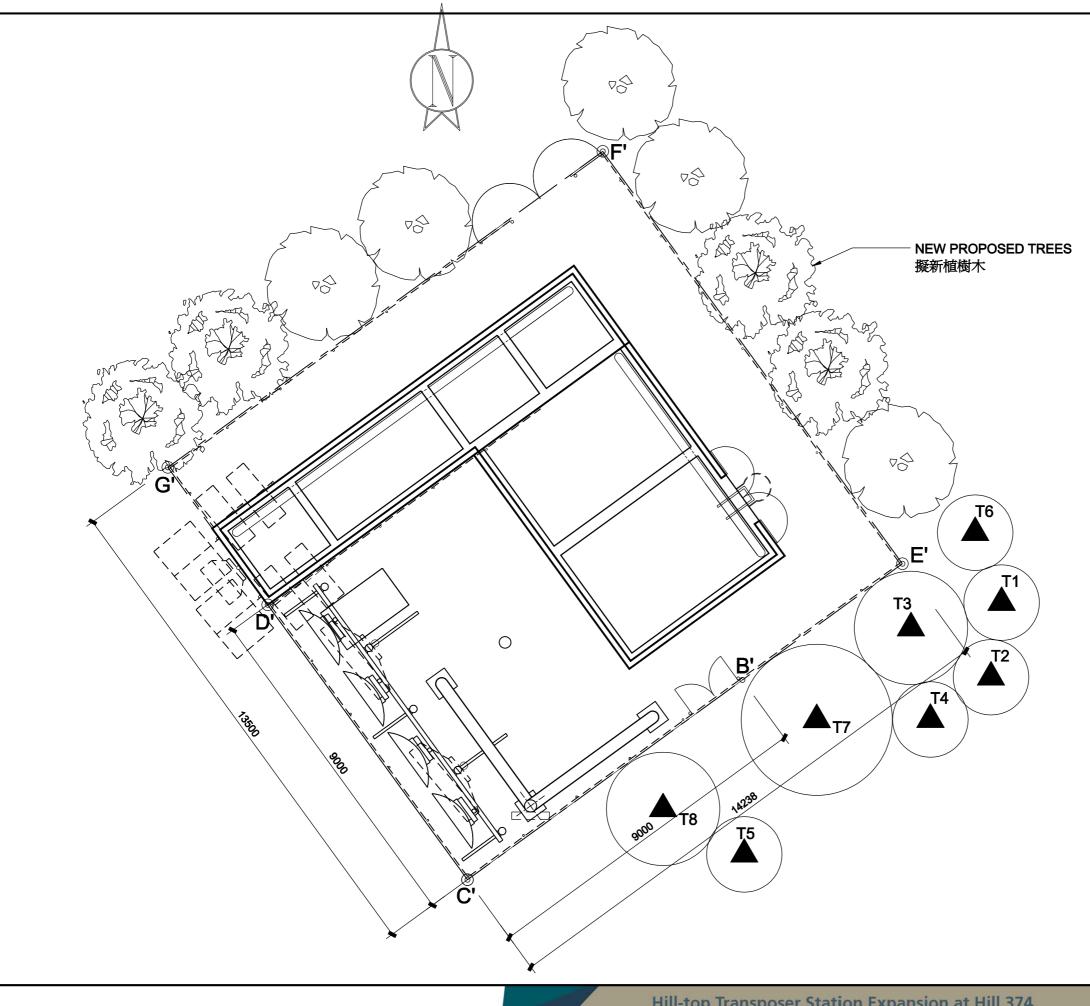




Television Broadcasts Limited 電視廣播有限公司 **ATKINS**

Hill-top Transposer Station Expansion at Hill 374 Lam Tsuen Country Park, Short Term Tenancy No. 1985, DD104 林村郊野公園374號小山電視轉播站擴建工程 短期租約第1985號丈量約份第104約

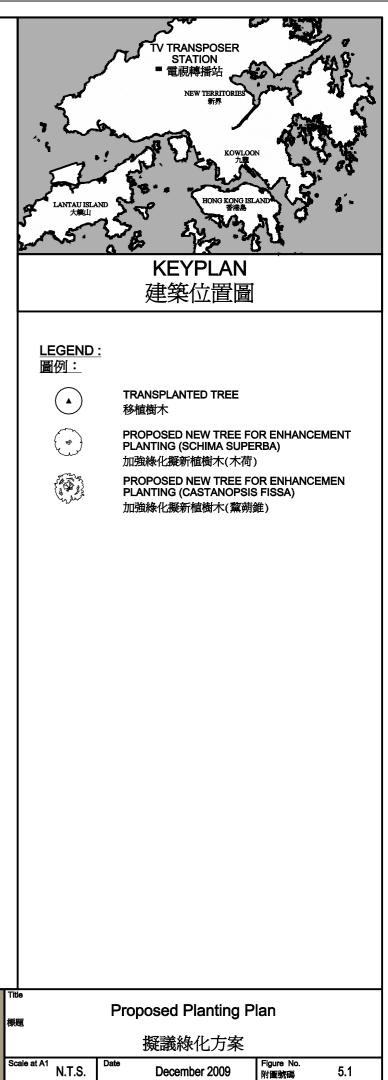






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T.S.	December 2009
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 Existing View from Southwest 目前從西南方向觀察的視覺效果



 View B
 View from Southwest with Proposed Development and Mitigation Measures on Day 1

 視圖 B
 項目及緩解措施實施後,從西南方向觀察在第一天的視覺效果



View C 視圖 C

View from Southwest with Proposed Development and Mitigation Measures after 10 Years 項目及緩解措施實施後,從西南方向觀察在 10 年後的視覺效果

Hill-top Transposer Station Expansion at Hill 374 Lam Tsuen Country Park, Short Term Tenancy No. 1985, DD104 林村郊野公園374號小山電視轉播站擴建工程 短期租約第1985號丈量約份第104約 Tifle

Existing View from Southwest, Views from Southwest with the Project and Mitigation Measures on Day 1 and After 10 Years					
標題 目前從西南方向觀察的視覺效果,項目及緩解措施實施後 從西南方向觀察在第一天及10 年後的視覺效果					
Scale at A1 N.T.S.	Date December 2009	Figure No. 附圖號碼 5.2			



View A 視圖 A Existing Closer View from Southeast 目前從東南方向觀察的近觀效果







祝圖 C

Closer View from Southeast with Proposed Development and Mitigation Measures after 10 Years 項目及緩解措施實施後,從東南方向觀察在10 年後的近觀效果



Hill-top Transposer Station Expansion at Hill 374 Lam Tsuen Country Park, Short Term Tenancy No. 1985, DD104 林村郊野公園374號小山電視轉播站擴建工程 短期租約第1985號丈量約份第104約

Title Existing Closer Southeast w 何題	View ith the n Day	View from Southeast, Closer Views from h the Project and Mitigation Measures h Day 1 and After 10 Years				
目前從東南方向觀察的近觀效果,項目及緩解措施實施復 從西南方向觀察在第一天及 10 年後的視覺效果						



View A 視圖 A Existing View from Hiking Trail 目前從行山徑方向觀察的視覺效果



 View B
 View from Hiking Trail with Proposed Development and Mitigation Measures on Day

 視圖 B
 項目及緩解措施實施後,從行山徑方向觀察在第一天的視覺:



Existing View from Hiking Trail, Views from Hiking Trail with the Project and Mitigation Measures on Day 1 and After 10 Years

lcasts Limited 有限公司 Hill-top Transposer Station Expansion at Hill 374 Lam Tsuen Country Park, Short Term Tenancy No. 1985, DD104 林村郊野公園374號小山電視轉播站擴建工程 短期租約第1985號丈量約份第104約

標題 IU Tears 目前從遊覽小路方向觀察的視覺效果,項目及緩解措施實施 後觀察在第一天及 10 年後的視覺效果

Scale at A1 N.T.S. Date December 2009 Figure No. 5.4