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## 1. BASIC INFORMATION

### 1.1 Project Title

Carving of Professor Jao Tsung I's Calligraphy at Ngong Ping

### 1.2 Purpose and Nature of the Project

The project is an art installation work on a natural grassy slope near the Lantau Trail. In June 2002, HKSAR was honoured to receive the donation of the art-pieces, calligraphy of **Heart Sutra** from Professor Jao. To reflect the depth, character and artistic value of this master pieces, it was proposed to carve the work on timber posts and install it on a natural slope in Hong Kong.

### 1.3 Name of Project Proponent

Commissioner for Tourism

### 1.4 Location and Scale of Project

The site is an existing natural grassy slope near the Lantau Peak (Project Site). From Po Lin Monastery, Lantau Peak and Tung Chun to the Site is about 15 minutes, 30 minutes and 90 minutes walking distance respectively. (Figure 1.1)

The site area is about 3,500 sq m. It is zoned 'Conservation Area' ("CA") on the approved Ngong Ping Outline Zoning Plan No. S/1-NP/2 (OZP). Free of disturbance from the surroundings, the site is a quiet and peaceful place, which is an ideal environment for the public to appreciate the art and contemplate the meaning of the Heart Sutra. (Figure 1.2)

The proposed location is inaccessible by means of ordinary vehicular traffic. No haul road will be constructed. To support the Project Site, a temporary loading and unloading bay (Loading Area) near the existing open car park of Ngong Ping Road is reserved. Bulk material will be unload there and take to the Project Site by smaller tractors and helicopter.

The arrangement of the installation is simple. It consists of a total of 30 numbers of randomly spaced timber columns in different heights (from 5 m to 8 m) installed on a natural slope facing towards the Lantau Peak. The calligraphy of Heart Sutra is carved in the timber posts on single side or double sides (Figure 1.3). To preserve the natural beauty of the environment, the slope will be reinstated to its original profile with shrubs and ground cover. Existing outcrops and boulders will also be retained as far as practicable. Neither hard paved footpath nor concrete steps will be provided. It is up to the visitors to view it in a distance or walk on the grass slope, to contemplate the meaning of Heart Sutra while appreciating Professor Jao's calligraphy. (Figure 1.4)

An existing timber pavilion will be relocated to the place near Lantau Trail. It serves as a vantagepoint of the installation and a shelter for the hikers as well.

**1.5 Number and Type of Designated Project to be covered**

The site falls within "CA" of Approved OZP. Installation of timber posts and relocation of pavilion involve earthworks and are identified as Designated Project under Schedule 2, Part 1, Item Q of the Environmental Assessment Ordinance (Cp. 499).

**1.6 Name and Telephone number of Contact Person(s)**

Mr. Raymond Fung, Senior Architect, Architectural Services Department (Tel 2867 3969).

**2. OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME**

**2.1 Contract Procurement**

Due to the urgency of the project, the works will be carried out by Minor Works Term Contractor under the supervision of Architectural Services Department.

**2.2 Management of the Project**

On completion, the installation will be handed over to Agricultural, Fisheries and Conservation Department for management.

**2.3 Tentative Timetable**

The preliminary works on site is summarized in Table 2.1 below.

**Table 2.1** Preliminary schedule of works

<b>Construction Activities</b>	<b>From</b>	<b>To</b>
Preliminary site works	Feb 2004	Feb 2004
Demolition of pavilion	March 2004	March 2004
Footing & excavation	April 2004	June 2004
Column erection	July 2004	October 2004
Construction of Pavilion	May 2004	June 2004
Reinstatement woks	November 2004	November 2004

**2.4 Interactions with Other Projects**

The following projects would likely be undertaken concurrently with this Project:

- Ngong Ping Sewage Treatment Works and Sewerage by Drainage Services Department (hereinafter referred to as "Ngong Ping STW"); and
- Tung Chung – Ngong Ping Cable Car Project (hereinafter referred to as "the Cable Car Project") by Mass Transit Railway Corporation

### 3. MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT

#### 3.1 The Landscape Profile

The landscape of Lantau Island, south of Tung Chung, is characterized by a high mountainous ridge running along the length of the island. The peaks rise sharply from the sea to 934 mPD on Lantau Peak, which lies to the south east of Ngong Ping. The uplands form rugged and dramatic ridges, peaks and spurs, angular in appearance and often given an undulating form by the numerous streams and gullies that run down them. The hilltops are large in scale, exposed and tranquil. The lower slopes are characterized by shrubs or woodland vegetation whilst the upper slopes are grass-covered with numerous rock outcrops and landslide scars.

The Project Site is to the north of the Lantau South Country Park (LSCP). Further down hill is Shek Pik Reservoir. A Tea Garden and Po Lin Monastery are located to the north. Big Buddha Statue is visible from the northwest direction. (Figure 3.1)

#### 3.2 Air Quality

There would be no major source of air pollution identified in the vicinity of the Project Site apart from the limited local traffic along Ngong Ping Road. In the absence of in-situ monitoring data, the annual average concentrations of pollutants measured at EPD's nearest monitoring station (Tung Chung) would be used as a reference to provide information on the background air pollutant levels. Table 3.1 summarizes the annual average concentrations of the pollutants as reported in the "Air Quality in Hong Kong, 2000" published by EPD.

**Table 3.1** Annual average concentrations of the pollutants in Tung Chung

Pollutants	Annual Average Concentrations ( $\mu\text{g}/\text{m}^3$ )
<b>TSP</b>	71
<b>NO<sub>2</sub></b>	45
<b>RSP</b>	45

In accordance with the Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM), representative air sensitive receivers (ASRs) were identified close to the site, as presented in Table 3.2 (refer to Figure 3.2).

**Table 3.2** Air Sensitive Receivers (ASR)

NSR	Description	Approximate Distance between the ASR and its Nearest Work Site <sup>1</sup> Boundary (m)
A1	Village house near Ngong Ping Road	20
A2	Buddha Statue	105
A3	Po Lin Monastery	120
A4	Village house at Tea Farm	20
A5	Ngong Ping Youth Hostel	110

Note: <sup>1</sup> Work sites include the Loading Area, route for material delivery and the Project Site

### 3.3 Noise

The Project Site is adjacent to Lantau Trail Stage 4 in Lantau South Country Park, it is an area of conservation value. Except Ngong Ping Road, no major noise emission source was identified in the vicinity. The ambient noise level is expected to be low, and primarily affected by noise due to local traffic along Ngong Ping Road and human activities.

Noise sensitive receivers (NSRs) were identified with reference to the EIAO-TM. Figure 3.3 shows the locations of representative NSRs.

**Table 3.3** Noise Sensitive Receivers (NSRs) in the vicinity

NSR	Description	Approximate Distance between the NSR and its Nearest Work Site <sup>1</sup> Boundary (m)	EIAO-TM Construction Noise Criteria, dB(A)
N1	Village house near Ngong Ping Road	20	75
N2	Buddha Statue	105	70
N3	Po Lin Monastery	120	70
N4	Village house at Tea Farm	20	75
N5	Ngong Ping Youth Hostel	110	75

Note: <sup>1</sup> Work sites include the Loading Area, route for material delivery and the Project Site

### 3.4 Water quality

Water-bodies potentially affected by the proposed works would be the water gathering ground (WGG) of Shek Pik Reservoir. The Reservoir is 1800 m away from the Project Site.

### 3.5 Ecology

Ecological surveys of the Project Site and surrounding areas (the Study Area) were conducted from 9th-11th April, 2002. The surveys were focussed on the proposed Project Site, with more general surveys conducted in the surrounding habitats (including the adjacent Ngong Ping "SSS" and Lantau South CP).

#### Habitat/Vegetation Surveys

Habitat types, along with dominant and notable plant species, relative abundance and growth forms of plants were recorded.

#### Wildlife Surveys

Wildlife including avifauna, herpetofauna/mammals, terrestrial insects (Odonates and Lepidoptera) and aquatic communities were surveyed by direct observation, listening for calling animals, and active searching of potential micro-habitats. Signs of terrestrial mammals (i.e., droppings, footprints and burrows) were searched for. A night survey was conducted on 9<sup>th</sup> April to record nocturnal fauna.

## 4. POSSIBLE IMPACT ON THE ENVIRONMENT

### 4.1 Possible Environmental Impacts During Construction

#### 4.1.1 Air Quality

Potential construction phase air quality impacts pertinent to the Project would include dust nuisance and gaseous emissions from the construction plant and vehicles. Fugitive dust emissions arising from material handling, site excavation, drilling operation, truck movement and wind erosion would be the main sources of air pollution.

Given that the number of plant to be used on site would be limited and the work site area would be small, adverse dust impacts during construction at the identified Air Sensitive Receivers would not be insurmountable. With the incorporation of mitigation measures stipulated in the Air Pollution Control (Construction Dust) Regulation, the impact would be minor and acceptable. Vehicle and plant exhaust emissions from the site would not be considered to constitute a significant source of air pollution.

#### 4.1.2 Noise

The Noise Control Ordinance (NCO) and Environmental Impact Assessment Ordinance (EIAO) provide the statutory framework for noise control. Assessment procedures and standards are set out in five Technical Memoranda (TMs) listed below:

- TM on Environmental Impact Assessment Process (EIAO-TM);
- TM on Noise from Construction Work other than Percussive Piling (GW-TW);
- TM on Noise from Percussive Piling (PP-TM);
- TM on Noise from Construction Work in Designated Area (DA-TM); and
- TM on Noise from Places other than Domestic Premises, Public Places or Construction Sites (IND-TM)

Potential noise impacts arising from the Project have been assessed in accordance with the criteria and methodology given in the TMs made under the NCO and the EIAO-TM. Daytime construction noise, i.e. 0700 – 1900 on weekdays, is controlled under the EIAO-TM. Annex 5 of the EIAO-TM sets out the construction noise limits, the noise limit is Leq(30 min) 75dB(A) for domestic premises and Leq(30 min) 70dB(A) for schools during normal hours (65dB(A) during examination) and all other uses where unaided voice communication is required.

Construction activities other than percussive piling using powered mechanical equipment (PME) undertaken at other times (i.e. restricted hours) are under the control of the NCO. Between 1900 and 0700 hours and whole day on Sundays and public holidays, activities involving the use of PME for the purpose of carrying out construction work are prohibited unless a construction noise permit (CNP) has been obtained. A CNP may be granted provided that the Acceptable Noise Level (ANL) for the Noise Sensitive Receivers (NSRs) can comply with the requirements in the GW-

TM. ANLs are assigned depending upon the Area Sensitivity Rating (ASR). The corresponding basic noise levels (BNLs) for evening and night-time period, are given in Table 4.1.

**Table 4.1** Construction Noise Criteria for Activity other than Percussive Piling

Time Period	Basic Noise Level (BNLs)		
	ASR A	ASR B	ASR C
Evening (1900 to 2300 hours) <sup>1</sup>	60	65	70
Night (2300 to 0700 hours)	45	50	55

Notes: <sup>1</sup> includes Sundays and Public Holidays during daytime and evening

The use of PME for the construction activities as summarized in Table 4.2 would be the potential sources of noise impact.

**Table 4.2** Potential Sources of Construction Noise Impact

Construction Task	Location	Proposed PME	Working Period	
			From	To
Demolition of the existing pavilion	At the Project Site	Excavator/loader, bulldozer, generator, vibration hammer, driller, hydraulic breaker and air compressor	Mar 2004	Mar 2004
Foundation works and excavation	At the Project Site	Generator, backhoe, hand-held pneumatic rock drill, air compressor and concrete mixer	Apr 2004	Apr 2004
Column erection	At the Project Site	Electric winch and generator	Jul 2004	Oct 2004
Construction of pavilion	At the Project Site	Concrete mixer, generator, vibratory poker and steel bender	May 2003	Jun 2004
Reinstatement works	At the Project Site	No PME would be used	Nov 2004	Nov 2004
Loading and unloading of materials	At the Loading Area near Ngong Ping Road	Loader, dump truck	Feb 2004	Nov 2004
Material delivery to/from the designated Loading Area and the Project Site	Along the proposed route for material delivery	Small tractors and Helicopter	Feb 2004	Nov 2004

It would be envisaged that the maximum number of tractors employed for material delivery would be about 2 vehicles per hour and the maximum allowable speed of tractors would be 10 km/h. Apart from tractors, helicopter would also be used for transporting timber posts from Loading Area to the Project Site.

It is reckoned that about 30 flights would be required as there are 30 timber posts to be transported, and each flight would take about 15 minutes. The delivery of posts by the helicopter would be completed within one to two days. The type of helicopter to be employed for the delivery would be Eurocopter Super Puma AS332L2 which is a medium utility transport helicopter.

Given the number of flights as well as the duration of helicopter operations would be limited, insurmountable noise impact due to which would not be envisaged. Having regarded the above, construction noise impact due to the use of helicopter for this Project would be considered to be short-term and not significant.

As broadly illustrated in the construction programme, various construction activities may be carried out concurrently during a particular period. The unmitigated cumulative noise levels at representative NSRs were predicted, and are shown in the table 4.3 below.

**Table 4.3** Unmitigated Cumulative Noise Levels at Representative NSRs

NSR	Predicted Noise Levels, dB(A)		Cumulative Noise Levels, dB(A)	EIAO-TM Daytime Noise Criteria, dB(A)
	Proposed Project	Concurrent Projects <sup>1</sup>		
N1	62-63	70	71	75
N2	62	66	67	70
N3	58 – 60	N/A	58 – 60	70
N4	65 – 66	N/A	65 – 66	75
N5	58 - 62	N/A	58 – 62	75

Note: <sup>1</sup> Concurrent Projects include the Ngong Ping STW and Cable Car Projects  
 N/A denotes not applicable.

The assessment results indicated that unmitigated noise levels at all representative NSRs would comply with the daytime noise criterion of 75dB(A). According to the Noise Impact Assessment Report prepared by a Maunsell Environmental Management Consultants Asia Ltd. (Consultant), (Annex 1), mitigation measure would be considered not necessary.

#### 4.1.3 Water Quality

During the construction phase, runoff and drainage from construction sites might be the main sources of potential water quality impacts to the nearby water bodies if uncontrolled. Due to the small quantity of the wastewater to be generated, the impact on water quality is not insurmountable.

#### 4.1.4 Waste Management Implications

Excavation is inevitable in the construction of the footing. The volume of excavated material would be less than 150 m<sup>3</sup>. Demolition debris, construction waste used in formwork, and temporary works will be generated. Due to the small quantity of the waste to be generated, the impact on waste management is negligible.

#### 4.1.5 Ecology

The Project Site lies within the boundary of Conservation Area. According to the Ecology Survey Report (ESR) prepared by a Maunsell Environmental Management Consultants Asia Ltd., ([Annex 2](#)) the site is not of high ecological value.

Habitat in the Project Site consist of stands of planted trees (*Acacia confusia*, *Pinus elliottii*) separated by open areas of grassland / shrubland and occasional rocky outcrops. The site is exposed to strong wind that would appear to limit the growth of vegetation on the slope. Twenty species of avifauna were recorded in the site. All are common and widespread in Hong Kong and no species of conservation interest were recorded.

Four species of amphibian were observed. All are common and widespread in Hong Kong, except the locally uncommon, endemic and protected Romer's Tree Frog in the stream running through Ngong Ping "SSSI".

Four species of reptile were identified during the wildlife survey, two of which (Copperhead Racer, *Elaphe radiata*; and Reeve's Terrapin, *Chinemys reevesii*) are considered of conservation interest.

Eight species of butterfly and one species of odonate were recorded in the site. All recorded terrestrial insects are common and widespread in Hong Kong. The protected Common Birdwing had been recorded in 1998 but no recorded of this species was made during the survey conducted in early April 2003. It is expected that the site is of minor importance to the species.

No direct or indirect observation of mammals or fish was made during the survey. Only a few invertebrate species were recorded.

The affected habitats would be limited to low ecological value immature plantation and open grassy areas on the site. No species of conservation interest would be directly affected by the proposed works and no direct impacts to Ngong Ping "SSSI" or Lantau South CP would be result from the Project. Construction Phase activities are anticipated to result in minor and acceptable direct ecological impacts.

With reference to the EIAO TM Annex 8 criteria, the ecological importance of species of conservation interest recorded in the Study Area has been evaluated in table 4.4 and 4.7 below.

**Table 4.4** Ecological Value of Grassland/Shrubland Mosaic

Criteria	Grassland/Shrubland Mosaic
Naturalness	Habitat largely composed of native species.
Size	Habitat dominates exposed, upland areas in Lantau.
Diversity	Low.
Rarity	Copperhead Racer ( <i>Elaphe radiata</i> ) recorded from grassy area on proposed Project Site.
Recreatability	Shrubland regenerates quickly and naturally, therefore recreatability is high.
Fragmentation	The habitat is not fragmented.
Ecological linkage	The habitat falls partially within the boundary of Lantau South CP.
Potential value	The potential value is low-moderate.
Nursery ground	No record of significant nursery or breeding ground was found in the survey.
Age	The habitat is relatively well established.
Abundance/ Richness of Wildlife	Low.
Ecological value	Low.

**Table 4.5** Ecological Value of Plantation

Criteria	Plantation
Naturalness	Vegetation dominated by exotic tree species in mature plantation.
Size	Plantation habitat covers much of the Study Area.
Diversity	Moderate.
Rarity	Tea Plant ( <i>Camellia sinensis</i> ) and Romer's Tree Frog ( <i>Philautus romeri</i> ) recorded from Ngong Ping "SSS" plantation.
Recreatability	Moderate-High.
Fragmentation	The habitat is not fragmented.
Ecological linkage	The habitat partially falls within the boundary of Ngong Ping "SSS".and Lantau South CP.
Potential value	The potential value is moderate.
Nursery ground	Areas adjacent to stream serve as a breeding ground for Romer's Tree Frog.
Age	Plantations in the Study Area varied in age from approximately <10yrs to 30-40yrs.
Abundance/ Richness of Wildlife	Moderate.
Ecological value	Project Site & Lantau South CP Plantation – Low Ngong Ping "SSS" Plantation – Moderate.

**Table 4.6** Ecological Value of Ngong Ping “SSSI” Stream

Criteria	Stream
Naturalness	The stream is largely free from human impact.
Size	Small.
Diversity	Diversity of aquatic community was low
Rarity	Three species of conservation interest: Romer's Tree Frog ( <i>Philautus romeri</i> ), Reeve's Terrapin ( <i>Chinemys reevesii</i> ) and the freshwater crab <i>Cryptopotamon anacoluthon</i> recorded from this habitat.
Recreatability	Low.
Fragmentation	The habitat is not fragmented.
Ecological linkage	The habitat falls within the boundary of Ngong Ping “SSSI”.
Potential value	The potential value is moderate.
Nursery ground	Romer's Tree Frog breeds in this habitat.
Age	N/A.
Abundance/ Richness of Wildlife	Low.
Ecological value	High.

**Table 4.7** Evaluation of species of conservation interest recorded in the study area

Common Name	Scientific Name	Status	Distribution/Rarity	Recorded Habitat
Tea Plant	<i>Camellia sinensis</i>	Protected	Locally rare species	Plantation
Romer's Tree Frog	<i>Philautus romeri</i>	Protected	Restricted global and regional population.	Ngong Ping “SSSI” Stream and adjacent riparian habitats
Copperhead Racer	<i>Elaphe radiata</i>	-	Declining regional population.	Project Site (Grassy Area)
Reeve's Terrapin	<i>Chinemys reevesii</i>	Protected	Drastically declining global and regional population. Globally endangered species.	Ngong Ping “SSSI” Stream
Freshwater Crab	<i>Cryptopotamon anacoluthon</i>	-	Restricted global and regional population.	Ngong Ping “SSSI” Stream

#### 4.1.6 Landscape and Visual

The sources of impacts in construction phase would include:

- The excavation work of the footing;
- The loading and unloading activities at designated temporary loading area;
- The delivery of material between the loading bay area and the Project Site;
- Loss of views to the green backdrop

Occupational users of the youth hostels and the Tea Garden Restaurant lying close to the Ngong Ping “SSSI” (the tea plantation area) would have very slight long range view of the site. Given that the distance of these

views, and interference by other buildings and vegetation, and other alternative views available from the property, the magnitude of change is considered negligible.

There would be impact on the Lantau Peaks and Uplands landscape character area during construction stage. Visitors on Buddha Statue platform and Hikers on the Lantau trails and the associated footpaths would have uninterrupted views of the proposed works. The works would be seen against the backdrop of the hill slopes of the LSCP. Given the panoramic and scenic quality of alternative views, the project is expected to have only minor landscape and visual impact during construction stage.

The loading bay lies close to the south of Ngong Ping Village. With proper mitigation measures to be implemented, the visual impact during construction stage would be acceptable. In view of the small scale of the works, these impacts will be small, localized and short-term.

## **4.2 Possible Environmental Impacts During Operation**

### **4.2.1 Air Quality**

Other than the timber posts and the shelter, there is no other installation on the site. Air quality impact is not anticipated.

### **4.2.2 Noise**

The carving of Heart Sutra installation is for people's contemplation and art appreciation. Additional noise generated due to the visitor will be negligible.

### **4.2.3 Water Quality**

The slope profile will be reinstated on completion of the works. Besides, there is no alteration to the stream course nor any water feature to be added to the Project Site. The impact on the water quality is not anticipated.

### **4.2.4 Waste**

A slight increase in human activity is expected. The additional waste generated due to the increase in numbers of visitors will be negligible.

### **4.2.5 Ecology**

A slight increase in human activity is expected during the operation phase. This impact is considered relatively minor, as the affected habitats are of low ecological value, and no species of conservation interest would be directly affected.

**Table 4.8** Overall Impact Evaluation to Grassland/Shrubland Mosaic

<b>Evaluation Criteria</b>	<b>Grassland/Shrubland Mosaic</b>
Habitat quality	The habitat quality is low.
Species	Potential disturbance to Copperhead Racer ( <i>Elaphe radiata</i> ).
Size/Abundance	Localized loss of small areas of grassland/shrubland mosaic and plantation habitat (total less than 0.01ha) on proposed Project Site due to column installation and pavilion construction.
Duration	Loss of habitat would be permanent. Minor disturbance from noise and increased human activity would last for duration of construction phase.
Reversibility	Loss of habitat would be permanent.
Magnitude	The scale of the impacts is considered very low.
Overall impact conclusion	Very Low.

**Table 4.9** Overall Impact Evaluation to Plantation

<b>Evaluation Criteria</b>	<b>Plantation</b>
Habitat quality	The habitat quality is low to moderate.
Species	No rare or protected species would be impacted.
Size/Abundance	Localized loss of small areas of grassland/shrubland mosaic and plantation habitat (total less than 0.01ha) on proposed Project Site due to column installation and pavilion construction.
Duration	Loss of habitat would be permanent. Minor disturbance from noise and increased human activity would last for duration of construction phase.
Reversibility	Loss of habitat would be permanent.
Magnitude	The scale of the impacts is considered low.
Overall impact conclusion	Very Low.

**Table 4.10** Overall Impact Evaluation to Ngong Ping "SSSI" Stream

<b>Evaluation Criteria</b>	<b>Ngong Ping "SSSI" Stream</b>
Habitat quality	The habitat quality is high.
Species	Three species of conservation interest: Romer's Tree Frog ( <i>Philautus romeri</i> ), Reeve's Terrapin ( <i>Chinemys reevesii</i> ), Reeve's Terrapin and the freshwater crab <i>Cryptopotamon anacoluthon</i> recorded from this habitat.
Size/Abundance	No direct impact to stream habitat
Duration	Minor disturbance from noise and increased human activity would last for duration of construction phase.
Reversibility	Duration of construction phase.
Magnitude	The scale of the impacts is considered very low.
Overall impact conclusion	Very Low.

#### 4.2.6 Landscape and Visual

No tree will be felled this project. The installation is a numbers of randomly spaced timber posts in varying heights. The timber itself is natural material. Its appearance merges easily with the surroundings and naturally blend in with the environment. The slope will be reinstated to its original profile with shrub and ground cover on top. Existing outcrops and boulders will also be retained. The whole concept is to achieve a harmony setting to match with the natural environment.

The youth hostel and Tea Garden Restaurant are located at the lower level of the Ngong Ping settlements far away from the site. Visitors on Buddha statue platform and hikers on the Lantau Peak trails and the associated footpaths would have uninterrupted views of the proposed works. The works would be seen against the backdrop of the hill slopes of the Country Park. Given that the distance of these views, and interference by other buildings and vegetation, and other alternative views available, the impact is therefore considered small. No mitigation is necessary.

### 5. ENVIRONMENTAL PROTECTION MESAURES TO BE INCOPRATED

#### 5.1 Environmental Protection Measures During Construction Stage

##### 5.1.1 Air Quality

Dust mitigation measures stipulated in the Air Pollution Control (Construction Dust) Regulation will be implemented to control fugitive dust emission from the Site during construction phase. Relevant control measures are listed below:

- Regular watering to reduce dust emissions from exposed site surfaces and unpaved road, with complete coverage, particularly during dry weather;
- Frequent watering for particularly dusty static construction areas and areas close to air sensitive receivers;
- Tarpaulin covering of all dusty vehicle loads transported to, from and between site location;
- Where feasible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from air sensitive receivers.

With the above measures in place, the dust impacts arising from the construction of the Project would be minimized to an acceptable level.

##### 5.1.2 Noise

The assessment results indicated that all predicted unmitigated noise levels at the representative NSRs would comply with the daytime noise criterion. No mitigation measure would be required.

Nonetheless, to ensure that construction noise impacts on sensitive receivers in the vicinity of the Project Site would be appropriately

controlled and minimised, The following good site practices should be followed during each phase of construction:

- Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program;
- Silencers or mufflers on construction equipment should be utilised and should be properly maintained during the construction program;
- Mobile plant, if any, should be sited as far away from NSRs as possible;
- Machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;
- Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs; and
- Material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities.

Noise impact arising from the construction of the proposed Project has been evaluated. Unmitigated cumulative construction noise levels have been predicted, which are in the range 58 to 71dB(A). The predicted unmitigated construction noise levels at all NSRs would comply with the EIAO-TM construction noise criteria. No adverse noise impact during the construction phase of the Project would be expected.

### 5.1.3 Water Quality

The Contractor will adopt the practices outlined in *ProPECC PN 1/94 Construction Site Drainage* to minimize site runoff and potential water pollution. Water quality impact will be further minimized during the construction stage of this Project with the adoption of good site arrangement and management practices.

The contractor will be required to comply with the Water Pollution Control Ordinance and also the conditions for works within WGG as follows:

- Adequate measures shall be taken to ensure that no pollution or siltation occurs to the catchwaters and catchments;
- No earth, building material, fuel, soil or toxic material or any other materials which may cause contamination to the WGG are allowed to be stockpile on site;
- Temporary drain with silt/grease traps shall be constructed at the boundary of the site prior to the commencement of any earthworks. The effluent from the drain shall comply with the standards of Group A Inland Waters as stipulated in the Technical Memorandum prepared by EPD on standard for effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters;
- All excavated or filled surfaces which have the risk of erosion shall always be protected from erosion;

- The use of chemicals, including fertilizers, disinfectants and deodorants, or insecticide within WGG shall be subject to the approval of the Director of Water supplies; and
- Any soil containment with fuel leaked from the plant shall be removed off site and the voids arising from the removal of containment soil shall be replaced by suitable material to the approval of Director of Water Supplies.

With the above measures in place, the water quality impacts arising from the construction of the Project would be minimized to an acceptable level.

### 5.1.4 Waste Management Implications

The Contractor should comply with the Waste Disposal (Chemical Waste) (General) Regulation, the Waste Disposal Ordinance and its subsidiary regulations. The Contractor should not permit any sewage, waste water or effluent containing sand, cement, silt or any other suspended or dissolved material to flow from site onto any adjoining land or allow any waste matter which is not part of the final product from waste processing plants to be deposited anywhere within any site or onto any adjoining land.

The volume of additional excavated material generated would be about 150 m<sup>3</sup>. Two third of this excavated spoil could be reused on-site and the remaining will be transported to a designated EPD outlying island transfer facilities in Mui Wo for reuse in suitable public filling areas or land formation projects. No adverse waste impact is anticipated with proper mitigation measures in place. The contractor will be required to comply with the Waste Disposal Ordinance and its subsidiary regulations.

### 5.1.5 Ecology

The Project is expected to have only minor ecological impact. Good construction practice should be implemented to minimize disturbance:

- All site workers should be briefed regarding the high ecological value of Ngong Ping "SSS". The need to adhere to existing paths, avoid disturbing vegetation and minimize noise disturbance should be emphasized;
- Placement of equipment or stockpiles in the work area should be selected on existing disturbed land where possible to minimize disturbance to vegetation. No materials should be stockpiled in Ngong Ping "SSS" or Lantau South CP;
- Construction activities should be restricted to work areas that should be clearly demarcated. Likewise, the transportation route through Ngong Ping "SSS" using the existing footpath should be clearly labeled: other routes should not be used;
- Temporary work areas should be reinstated immediately after completion of the construction work. Planting should include native species currently found on the slope;
- Open fires should be strictly prohibited on the works site;
- Waste generated from the site should be disposed of in a timely and proper manner;

- Exposed areas of soil should be covered with tarpaulin to minimize sedimentation in site run-off.

### 5.1.6 Landscape and Visual

Construction phase landscape mitigation measures should include:

- Minimize contractor's construction access and working area as far as possible.
- Access road alignment have been selected to avoid mature trees.
- No tree felling is anticipated to result from the proposed works.
- Advance planting.
- Conservation of top soil.
- Design of the temporary Loading Areas so as to optimize eventual use and minimize unnecessary disturbance to existing woodland.

In view of the small scale of the works, these impacts will be small, localized and short-term. No adverse landscape and visual impacts are expected during the construction phase.

## 5.2 Environmental Protection Measures During Operational Stage

### 5.2.1 Waste

Not much additional waste will be generated due to the installation. Rubbish bins have already been provided along the trail. It is recommended to relocate the existing rubbish bins for the convenience of the visitors.

### 5.2.2 Landscape and Visual

No tree will be felled in this project. The installation is a numbers of randomly spaced timber posts in varying heights. The timber itself is natural material, which blends in with the environment. The slope will be reinstated to its original profile with shrub and ground cover on top. Existing outcrops and boulders will also be retained. The whole concept is to achieve a harmony setting to match with the natural environment. The project is expected to have only minor landscape and visual impact.

Even so, shrubs and ground cover will be planted to the Project Site to enhance the natural beauty of the environment.

**6. SUNMMARY OF POTENTIAL ENVIRONMEATAL IMPACTS AND MITIGATION MEASURES**

The potential environmental impacts and the proposed environmental mitigation measures to be incorporated into the design and construction of the proposed project are summarized in the following table:

Project Stage	Potential Environmental Impact	Mitigation Measures	Relevant Section in Project Profile
construction	Minor Air Quality	Control by contract specifications	4.1.1 & 5.1.1
	Minor noise impact	Control by contract specifications	4.1.2 & 5.1.2
	Minor water quality	Control by contract specifications	4.1.3 & 5.1.3
	Minor waste impact	Control by contract specifications	4.1.4 & 5.1.4
	Minor Ecological impact	Control by contract specifications	4.1.5 & 5.1.5
	Minor Landscape and Visual	No adverse impact is identified; Some recommendations to improve the quality of the environment	4.1.6 & 4.1.6
Operation	Air Quality	No adverse impact is identified; No mitigation measure is required	4.2.1
	Noise impact	No adverse impact is identified; No mitigation measure is required	43.2.2
	Water quality	No adverse impact is identified; No mitigation measure is required	4.2.3
	Waste impact	No adverse impact is identified; some recommendations are proposed to improve the quality of the environment	4.2.4 & 5.2.1
	Ecological impact	No adverse impact is identified; No mitigation measure is required	4.2.5
	Landscape and Visual	No adverse impact is identified; Some recommendations to improve the quality of the environment	4.2.6 & 5.2.2

To conclude, the Heat Sutra is the most popular sutra in Buddhism. It is the summation of the wisdom of Buddha and explains perfectly the teaching of non-attachment. Professor Jao Tsung I is a widely respected scholar and artist. The carving of Professor Jao's calligraphy at Ngong Ping is a valuable cultural and leisure installation for the public.

With proper implementation of the above environmental mitigation measures that will be incorporated into the design and construction works of the proposed Project, insurmountable environmental impact during the construction and operational stages of the proposed scheme is not expected.