



**JOB No.: TCS00694/13**

**AGREEMENT NO. CE 45/2008 (CE)  
LIANTANG/HEUNG YUEN WAI  
BOUNDARY CONTROL POINT AND ASSOCIATED WORKS**

**ECOLOGICAL MONITORING REPORT FOR THE  
WOODLAND COMPENSATION AREA  
(JUNE TO AUGUST 2018)**

**PREPARED FOR  
CIVIL ENGINEERING AND DEVELOPMENT  
DEPARTMENT (CEDD)**

<b>Date</b>	<b>Reference No.</b>	<b>Prepared By</b>	<b>Certified By</b>
7 September 2018	TCS00694/13/600/R1776v1	 Keith Wong (Ecologist)	 Tam Tak Wing (Environmental Team Leader)

<b>Version</b>	<b>Date</b>	<b>Remarks</b>
1	4 September 2018	First Submission
2	7 September 2018	Amended according to the IEC's comments on 6 Sep 2018

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Member of the Surbana Jurong Group

local people  
global experience

Our ref: 7076192/L23492/AB/AW/MCC/rw

12 September 2018

AECOM  
8/F, Grand Central Plaza, Tower 2  
138 Shatin Rural Committee Road  
Shatin, N.T.

**By Email & Post**

Attention: Mr Simon LEUNG

Dear Sir

**Agreement No. CE 45/2008 (CE)  
Liantang/Heung Yuen Wai Boundary Control Point and Associated Works  
Independent Environmental Checker – Investigation  
Quarterly Ecological Monitoring Report for Woodland Compensation Area (No .4) –  
June to August 2018**

With reference to the Quarterly Ecological Monitoring Report for Woodland Compensation Area No. 4 for June to August 2018 (Version 2) certified by the ET Leader, please be noted that we have no adverse comments on the captioned submission. We herewith verify the captioned submission in accordance with Section 8.3.2.2 of the EM&A Manual.

Thank you for your attention and please do not hesitate to contact the undersigned on tel. 3995-8120 or by email to antony.wong@smec.com; or our Mr Arthur CHIU on tel. 3995-8144 or by email to arthur.chiu@smec.com.

Yours faithfully



**Antony WONG**  
Independent Environmental Checker

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## 1. INTRODUCTION

### 1.1 GENERAL

- 1.1.1 The “Liantang/Heung Yuen Wai Boundary Control Point and Associated Works Project” (hereinafter referred to as “the Project”) comprises a new Boundary Control Point (BCP) proposed at Liantang/Heung Yuen Wai (LT/HYW), its connecting road and other associated works; and the Environmental Impact Assessment (EIA) report (Register No.:AEIAR-161/2011) of the Project has identified that ~6.2ha of secondary woodlands will be directly lost due to the construction of the portals of tunnels and some sections of the connecting road. Subsequently, creation of a 18.6 ha compensatory woodland at Cheung Shan has been recommended in the EIA report to avoid residual ecological impacts from the Project.
- 1.1.2 Under the Environmental Permit (EP-404/2011/D), an updated Woodland Compensation Plan (WCP) detailed with the planting strategy and the subsequent maintenance and monitoring requirements of the compensatory woodland has been submitted and approved by the Authority in the 4<sup>th</sup> Quarter of 2015, and a revision of the updated WCP (i.e., WCP Revision 2) has been approved by EPD in 2017.
- 1.1.3 The woodland compensation include an initial planting phase and enhancement planting phase over a 6 years period on the grassland and shrubland at Cheung Shan, i.e., the “Woodland Compensatory Area” (WCA) as shown in the **Drawing No. 60212563/SK7037 of the WCP** and included here as **Appendix A**; and the planting works fall within the work scope of Contract No. CV/2013/08 Liantang/ Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works - Contract 6.
- 1.1.4 As part of the EM&A’s requirements of the Project and in accordance with the latest status of the initial planting phase (refer to the “as-built” plan as shown in **Appendix B** for details), this submission presents the findings of the 4<sup>th</sup> quarterly vegetation monitoring after the first year of initial planting, and covers the Reporting Period from June to August 2018.



## 2. MONITORING REQUIREMENTS

### 2.1 MONITORING PROGRAM OF THE INITIAL AND ENHANCEMENT PLANTING PHASES

2.1.1 According to the Section 6.5 of the WCP (ver. 2), the frequency of the monitoring is proposed to be bi-monthly during the first year of the initial planting phase and should be reduced to quarterly from the second year.

2.1.2 Change of monitoring frequency if needed will be advised by the Project Ecologist of the ET and approved by Environmental Protection Department (EPD) and Agriculture, Fisheries and Conservation Department (AFCD) before implementation.

### 2.2 MONITORING METHODOLOGY

2.2.1 An inspection walk monitoring by means of “transect route” and “direct observation” has been undertaken within the WCP as such to provide an overview and observe the general condition of the WCA; After due considerations of the latest planting arrangement within the WCA, the potential trampling damage to the planted seedlings, as well as the limitations in visibility, site access and safety concern when undertaking the monitoring among the steep hillslope, the transect routes has been selected to cover all representative areas where planting has been undertaken within the WCA as far as practicable.

2.2.2 The transect routes are illustrated in **Appendix C**, and the following observations have been made during the inspection walk:

- Weather condition during the time of monitoring
- The general condition of the WCA, including any signs of anthropogenic or natural disturbance/events (such as landslide, lightning strikes, wildlife damage) that has affected the health condition of the planted seedlings, or regeneration or invasive of grassy or self-seeded weedy plants that would or have affected the establishment of the planted vegetation
- The general health condition of each planted species graded in “Good”, “Fair” or “Poor” with the following criteria:
  - i) Phenology – signs of any abnormality in the phenology of the species (such as abnormal flowering/fruitletting/ leaf shedding)
  - ii) Foliage – colour, size and general appearance, signs and severity of insect and fungal infection
  - iii) Branches – presence and extent of die-back, and signs and severity of insect and fungal infection
  - iv) Stem/Trunk - signs and severity of cavities or internal/external decay; signs and severity of insect infection and mechanical damage

2.2.3 Since the monitoring approach adopted for the transect inspection, i.e., “*direct observations*”, would not yield any quantitative information, the survival rate (%) of the planted seedling will be evaluated from the results collected from the quadrat sampling as detailed in next section.

### 2.3 QUADRAT SAMPLING

2.3.1 A sampling approach has been proposed in the WCP to monitor the survival rate of the planted seedlings by the use of nine 20mx20m quadrats which are to be evenly located within the planted area of the WCA. Based on the as-built planting plan provided by the contractor (see **Appendix B**), as well as the local topography of the planted area within the WCA, the practicality in accessing, placing and monitoring nine 20m x 20m fixed quadrats within the planted area of the WCA has been extensively reviewed, 2 of the monitoring quadrats are fixed on the ridgeline of Cheung Shan and 7 of them are located on the north-facing slope of the WCA (see **Appendix C**).

- 2.3.2 Information collected within each sampling unit include:
- General condition of the sampling quadrat especially those factors that would or have found affected the survival rate of the planted vegetation, including biological or environmental factors (such as inter-specific competition as well as signs of stress from water, heat, or pest and disease, etc)
  - The total number of established seedlings for each planted tree and shrub species
  - Health condition of each planted species graded in “Good”, “Fair” or “Poor” with the following criteria:
    - i) Phenology – signs of any abnormality in the phenology of the species (such as abnormal flowering/fruitletting/ leaf shedding)
    - ii) Foliage – colour, size and general appearance, signs and severity of insect and fungal infection
    - iii) Branches – presence and extent of die-back, and signs and severity of insect and fungal infection
    - iv) Stem/Trunk - signs and severity of cavities or internal/external decay; signs and severity of insect infection and mechanical damage

2.3.3 The survival rate of the planted species during the initial planting phase will be evaluated against the referenced baseline updated for the monitored quadrats after the supplementary planting work undertaken in September 2017, and if needed the implementation of the measures as detailed in the “Trigger and Action Levels” specified in the **Table 3** of the WCP would be recommended (included here as **Table 1** below) .

**Table 1 Trigger and Action Levels for Monitoring and Action Plan**

Parameters	Trigger and Action Level	Action Plan
General Health Condition of planted species (i.e. good/fair/poor; based on parameters e.g. wilting, insect attack, disease, fungal infection, browsing damage)	Trigger Level: % of individual plant species in poor health condition >20%	- the ET should inform Contractor and IEC immediately; - identify the causes(s) of the exceedance; - advise Contractor the necessity of replanting
	Action Level: % of individual plant species in poor health condition >30%	- the ET should inform Contractor and IEC immediately; - identify the cause(s) of the exceedance; - advise remedial action and work out solution including change of species in re-planting, re-soiling of the target areas; and seek acceptance from AFCD; - once the remedial action has been accepted by AFCD, the Contractor should implement the remedial action.
Survival of Planted Species (i.e. dead)	Trigger Level: Survival rate of individual plant species <80%	- the ET should inform Contractor and IEC immediately; - identify the causes(s) of the exceedance; - advise Contractor the necessity of replanting.

	Action Level: Survival rate of individual plant species <70%	<ul style="list-style-type: none"> <li>- the ET should inform Contractor and IEC immediately;</li> <li>- identify the cause(s) of the exceedance;</li> <li>- advise remedial action and work out solution including change of species in re-planting, re-soiling of the target areas; and seek acceptance from AFCD;</li> <li>- once the remedial action has been accepted by AFCD, the Contractor should implement the remedial action.</li> </ul>
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2.3.4 Since most of the planted native species are also naturally grown within the WCA and it would be infeasible and impracticable to differentiate whether the individual plant encountered along the transect or within the quadrat is planted, natural recruited, or regenerated after the pre-planting clearance of the site; and hence all established individuals of the planted species found within the sampling unit has been counted during the monitoring.

2.3.5 The WCA monitoring was undertaken by the Environmental Team (ET) and under the supervision of the Qualified Ecologist of the ET, and the Qualified Ecologist has also undertaken a joint transect inspection with representative of the IEC in the reporting.

## 2.4 REPORTING

### *Bi-monthly Woodland Compensation Monitoring Reports*

2.4.1 The results and findings of the bi-monthly (i.e., once every two months) monitoring including the landscape inspection during the first year of the initial planting phase and the first year of the enhancement planting phase will be recorded in a bi-monthly woodland compensation monitoring reports prepared and submitted by the ET Leader within 10 working days from the end of each reporting month. The details to be included in the report will follow the Section 7.3 of the WCP.

### *Quarterly Woodland Compensation Monitoring Reports*

2.4.2 Starting from the second year of the initial planting phase and the enhancement planting phase, the frequency of the monitoring is reduced to quarterly basis, the results and findings of the quarterly monitoring as well as the landscape inspection after the first year of the initial planting phase and the first year of the enhancement planting phase shall be recorded in the quarterly woodland compensation monitoring reports prepared and submitted by the ET Leader within 10 working days from the end of each reporting month. The details to be included in the report will follow the Section 7.3 of the WCP.

### 3. RESULTS

#### 3.1 TRANSECT INSPECTION

3.1.1 The transect inspection was carried out on 6<sup>th</sup> August 2018 with the ecological specialist of the IEC, an overview of the site condition is presented in *Appendix D* and the following presents the observations made during the transect inspection:

- It was sunny with cloudy period during the day of the transect inspection.
- The establishment of the seedlings planted in September 2017 along the eastern ridgeline was found to be fair and steady; and the overall health condition of the planted species noted along the transect were generally fair
- The growth of the exotic tree *Acacia mangium* was found to be vigorous, but human disturbance, i.e., snapping of the main leader of the saplings ~2m in height were occasionally noted along the transect route.
- Replanting was noted within the WCA; moreover, most of the newly planted plants, including the tree saplings, were <30cm in height.
- Signs of disturbance from wild boar, i.e., vegetation trampling, earth ploughing, as well as uprooted seedlings (from planted/self-seeded vegetation) were only occasionally noted on the north-facing slope of Cheung Shan.
- Re-sprouting, regrowth, and establishment of several native woody and herbaceous species, such as the trees *Melicope pteleifolia* and *Cratoxylum cochinchinense*, the shrub *Baeckea frutescens* and *Breynia fruticosa*, as well as the Dichotomy Forked Fern *Dicranopteris pedata* were found to be vigorous within the planted area (initial planting) of the WCA, and some of those plants have out-grown the planted seedlings and may affect the establishment/growth rate of the planted plants because the inter-specific competition, in particularly, the planted tree species were only occasionally noted in area densely covered by the Dichotomy Forked Fern.
- It was noted that the scheduled “Stage 1 Planting Works for Enhancement Planting Phase” for 2018, which planned to be planted in areas with existing tree coverage within the WCA, has been undertaken in the planting area of the “Initial Planting Phase” near the summit and along the ridgeline of Cheung Shan, where the area is only sparsely covered by trees that has a height >2m.

3.1.2 The general health condition of the planted species, based on the observations made along the transect, is tabulated in the following table.

**Table 2 Health condition of the established seedlings noted during the transect inspection**

Species	Health Condition		
	Good	Fair	Poor
<b>Trees</b>			
<i>Acacia confusa</i>		√	
<i>Acacia mangium</i>		√ <sup>(1)</sup>	
<i>Castanopsis fissa</i>		√	
<i>Litsea glutinosa</i>		√ <sup>(3)</sup>	
<i>Mallotus paniculatus</i>		√ <sup>(3)</sup>	
<i>Phyllanthus emblica</i>		√ <sup>(3)</sup>	
<i>Sapium discolor</i>		√ <sup>(2)(3)</sup>	
<i>Schima superba</i>	√ <sup>(3)</sup>		
<b>Shrubs</b>			
<i>Gordonia axillaris</i>		√	
<i>Melastoma candidum</i>		√ <sup>(3)</sup>	
<i>Melastoma sanguineum</i>		√ <sup>(3)</sup>	

<i>Rhaphiolepis indica</i>		$\sqrt{(2),(3)}$	
<i>Rhodomytus tomentosa</i>		$\sqrt{(3)}$	

Note:

- (1) – intentional snapping of main leader was occasionally noted  
 (2) – Most of the foliage of this species was found to be smaller in size  
 (3) – self-seeded seedlings or wild population of this species was present within the planting area (initial planting) of the WCA, and since it is impracticable and sometimes unfeasible to differentiate them from the planted seedlings, the health condition was evaluated as a whole for this species encountered during the transect walk.

### 3.2 QUADRAT SAMPLING

3.2.1 The nine 20m x 20m sampling quadrats have been placed within the planted area of the WCA, and at area where the majority of the seedlings were planted and considered suitable for long term monitoring; in which 2 of them were located on the ridgeline and the rest are located on the north-facing slope of Cheung Shan (see **Appendix C**). The quadrat monitoring was conducted on 3<sup>rd</sup> and 6<sup>th</sup> August 2018, and the weather were cloudy with sunny period on both days.

3.2.2 The condition of the quadrats during the time of monitoring is shown in **Appendix D** and the monitoring result of the reporting period and the survival rate of the planted species since the commencement of the quarterly monitoring (initial planting phase) are shown in **Table 3** and **Table 4** respectively.

**Table 3 The number of seedling recorded for each species within the sampling quadrats**

	Quantity* and General Health <sup>^</sup> Condition of the Established Seedling Recorded in Each Sampling Quadrat									Total Qty.
	R1	R2	S3	S4	S5	S6	S7	S8	S9	
<b>Trees</b>										
<i>Acacia confusa</i>	10	11	8	6	14	4	4	2	18	<b>77</b>
<i>Acacia mangium</i>	32	25	26	12	25	0	18	17	29	<b>184</b>
<i>Castanopsis fissa</i>	3	3	2	1	0	6	0	0	0	<b>15</b>
<i>Litsea glutinosa</i>	15	5	9	7	5	2	1	2	7	<b>53</b>
<i>Mallotus paniculatus</i>	24	15	11	12	14	12	8	10	22	<b>128</b>
<i>Phyllanthus emblica</i>	5	5	8	5	12	1	2	2	8	<b>48</b>
<i>Sapium discolor</i>	2	6	6	1	3	0	1	0	3	<b>22</b>
<i>Schima superba</i>	12	15	4	17	7	46	0	1	0	<b>102</b>
<b>Sub-Total</b>	<b>103</b>	<b>85</b>	<b>74</b>	<b>61</b>	<b>80</b>	<b>71</b>	<b>34</b>	<b>34</b>	<b>87</b>	<b>629</b>
<b>Shrubs</b>										
<i>Gordonia axillaris</i>	6	15	31	37	48	25	20	9	9	<b>200</b>
<i>Melastoma candidum</i>	30	15	31	28	34	15	18	22	27	<b>220</b>
<i>Melastoma sanguineum</i>	7	58	28	44	67	6	20	10	26	<b>266</b>
<i>Rhaphiolepis indica</i>	46	31	33	47	52	13	9	20	38	<b>289</b>
<i>Rhodomyrtus tomentosa</i>	62	83	69	58	85	22	35	40	83	<b>537</b>
<b>Sub-Total</b>	<b>151</b>	<b>202</b>	<b>192</b>	<b>214</b>	<b>286</b>	<b>81</b>	<b>102</b>	<b>101</b>	<b>183</b>	<b>1512</b>

Notes: <sup>^</sup> General Health Condition:

- Good - No. in normal font type (e.g., “99”)
- Fair - No. in Italic font (e.g., “99”)

- Poor - No. in italic & underlined (e.g., “99”)
- \* the quantity include all individuals of the planted species within the quadrat regardless whether they are self-seeded or planted (see Section 2.3.4)

**Table 4 Survival Rate of the Planted Species since the Commencement of the Quarterly Monitoring of the Initial Planting Phase**

Species	Qty. of Seedlings					Survival Rate* (%)			
	Reference baseline <sup>^</sup>	Nov 17	Jan 18	Mar 18	Aug 18	Nov 17	Jan 18	Mar 18	Aug 18
<i>Acacia confusa</i>	113	59	59	64	77	<b>52.21</b>	<b>52.21</b>	<b>56.64</b>	<b>68.14</b>
<i>Acacia mangium</i>	193	188	190	185	184	97.41	98.45	95.85	95.34
<i>Castanopsis fissa</i>	39	14	13	13	15	<b>35.90</b>	<b>33.33</b>	<b>33.33</b>	<b>38.46</b>
<i>Litsea glutinosa</i>	79	52	51	50	53	<b>65.82</b>	<b>64.56</b>	<b>63.29</b>	<b>67.09</b>
<i>Mallotus paniculatus</i>	80	93	93	95	128	100.00	100.00	100	100.00
<i>Phyllanthus emblica</i>	64	61	38	50	48	95.31	<b>59.38</b>	<b>78.13</b>	<b>75.00</b>
<i>Sapium discolor</i>	39	27	22	22	22	<b>69.23</b>	<b>56.41</b>	<b>56.41</b>	<b>56.41</b>
<i>Schima superba</i>	82	82	79	69	102	100.00	96.34	84.15	100.00
<i>Gordonia axillaris</i>	148	162	195	201	200	100.00	100.00	100	100.00
<i>Melastoma candidum</i>	352	222	214	211	220	<b>63.07</b>	<b>60.80</b>	<b>59.94</b>	<b>62.50</b>
<i>Melastoma sanguineum</i>	313	227	269	265	266	<b>72.52</b>	85.94	84.66	84.98
<i>Rhaphiolepis indica</i>	438	312	313	302	289	<b>71.23</b>	<b>71.46</b>	<b>68.95</b>	<b>65.98</b>
<i>Rhodomyrtus tomentosa</i>	824	549	558	536	537	<b>66.63</b>	<b>67.72</b>	<b>65.05</b>	<b>65.17</b>

<sup>^</sup> updated in Sep 2017 in accordance with the “as-built” planting plan for the initial planting phase as well as the monitoring findings between Aug 2017 and Nov 2017

\* no. in bold denotes the survival rate trigger action listed in Table 1

3.2.3 Based on the recorded data and observations made within the sampled quadrats and the data presented in **Table 3** and **Table 4**, the following provides a brief account of the findings from the quadrat monitoring:

- Health condition: Generally speaking all of the planted plants were found in fair health condition, except some of the replacement plants which may suffer from the transplanting shock and appeared in poorer condition. On the other hand, the main trunk of several *Acacia mangium* trees which has a height >1.5m were found snapped in some of the monitored quadrats.
- Survival Rate: According to the information provided by the Main Contractor, replacement planting for the initial planting phase has already been undertaken in accordance with the recommendations made in the previous monitoring report, including restored the referenced baseline of the monitored quadrats. (see **Appendix E**) Moreover, as shown in Table 4, the recorded survival rate for the seven species where replanting has been undertaken are similar to the previous monitoring period and lower than 70% (i.e., *Castanopsis fissa* - 38.46%, *Acacia confusa* - 68.14%, *Litsea glutinosa* - 67.09%, *Sapium discolor* - 56.41%; *Melastoma candidum* - 62.50%, *Rhaphiolepis indica* - 65.98%, and *Rhodomyrtus*



*tomentosa* - 65.17%).

- On the other hand, the result also shown that the tree *Phyllanthus emblica* only recorded with a survival rate of 75%.

3.2.4 The possible causes of poor survival rate has been postulated in previous reports, including

- poor vigor of the planted seedling
- animal disturbance such as herbivory and trampling
- insufficient horticultural maintenance (such as watering/weeding)
- the seedlings were out-competed (for light and space) by the adjacent planted, self-seeded or retained vegetation
- human disturbance during the previous maintenance activities in 2017, including replanting and weeding.

3.2.5 Moreover, since the monitoring was undertaken shortly after the completion of the replanting work and the plant may yet to recover from the transplanting shock, it is recommended that the necessity for taking further remedial actions, including but not limited to replanting or species substitution, to be further reviewed from the data collected in next monitoring period.

3.2.6 Meanwhile, the remedial actions recommended to address the possible causes of poor survival rate of the 8 species reported above are presented in **Table 5**. According to Table 1, the Contractor is responsible for the implementation of replanting and other remedial measures agreed by AFCD.

**Table 5 Remedial Actions Recommended for the Poor Survival Rate of the Planted Species**

Possible Cause	Remedial Action
Animal disturbance	Prominent signs of disturbance from animal activities, in addition to those previous noted, has not been observed within the WCA as a whole after the replanting conducted in September 2017, and the necessity for further action to be reviewed
Poor vigor of the planted seedlings	Strengthen the vegetation maintenance (in particularly weeding and if necessary fertilizing) within the WCA, and provide adequate briefing to the maintenance team to avoid/minimize the potential trampling/mechanical damage to the woody plants within the WCA. In addition, the use of motorized weeding equipment in areas densely covered by woody plant should be avoided as far as practicable, and the removed weed should be properly disposed to avoid shadowing of the planted seedlings.
Vegetation maintenance	
Inter-specific competition	

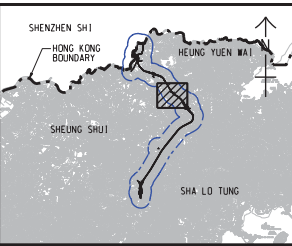
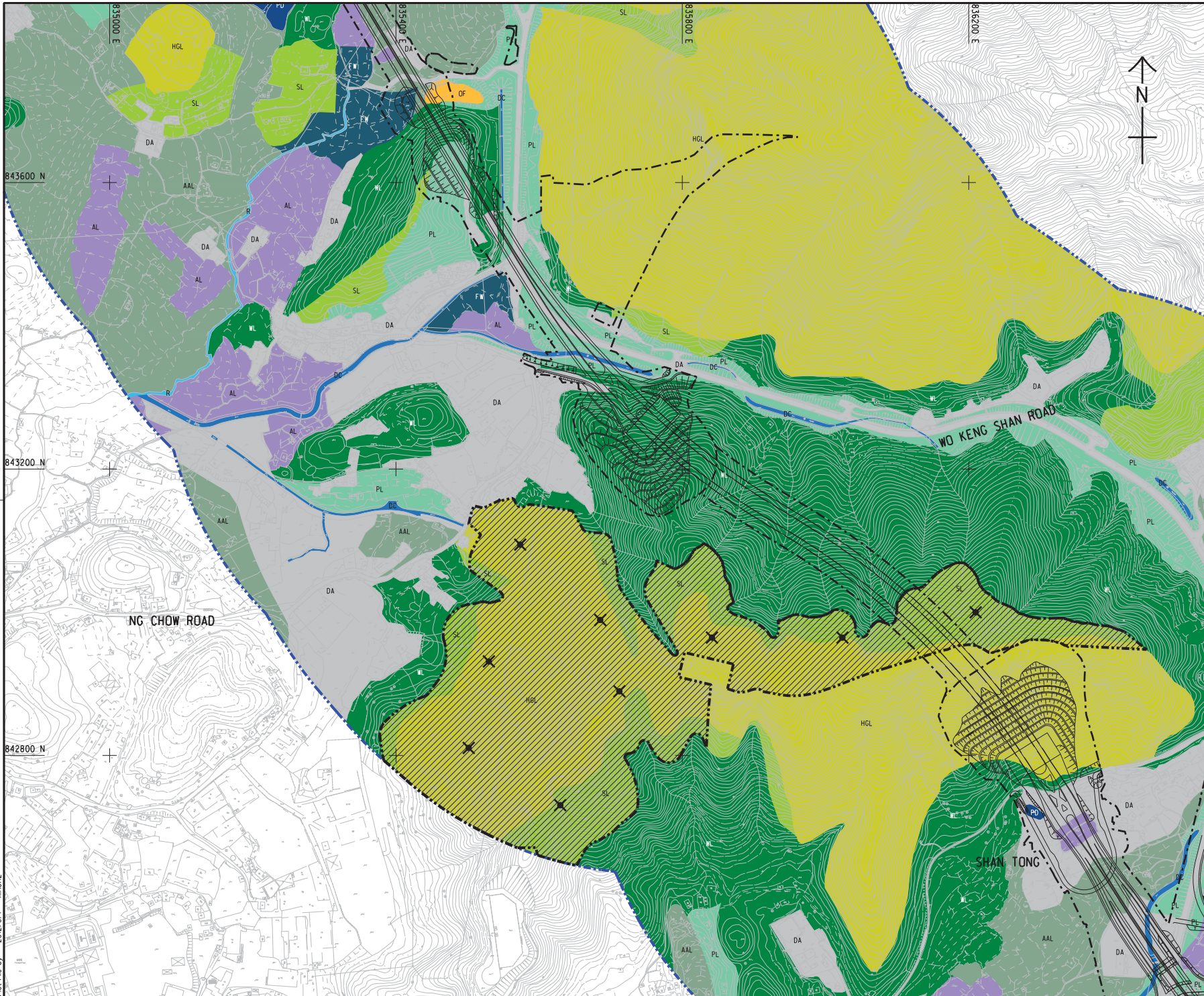
3.2.7 Finally, despite the cause of the tree damage noted on the *Acacia mangium* is unknown during the time of reporting and the Contactor has claimed that such damage was occurred before the replanting works, the Contractor is recommended to undertake restoration/structural pruning and/or bark trimming to rectify the damage of the tree and promote woundwood formation and compartmentation process of the damaged trees; and investigate the cause and take necessary actions to avoid/prevent the re-occurrence of similar incidents.

-End-

## **Appendix A**

### **Drawing No. 60212563/SK7037 of the Woodland Compensation Plan**





**KEY PLAN**  
SCALE 1 : 150000

**LEGEND:**

- 500m ASSESSMENT AREA
- TENTATIVE WORKS AREA
- TUNNEL SECTION**
- WL WOODLAND
- SL SHRUBLAND
- PL PLANTATION
- FW FRESHWATER WETLAND [NET AGRICULTURAL AND (ACTIVE/ABANDONED)]
- AL ACTIVE AGRICULTURAL LAND
- AAL ABANDONED AGRICULTURAL LAND
- HGL HILLSIDE GRASSLAND
- PD POND
- DC DRAINAGE CHANNEL
- R WATERCOURSE
- OF OPEN FIELD
- DA DEVELOPED AREA
- EXTENT OF WOODLAND COMPENSATION PLANTING AREA
- X TENTATIVE WOODLAND MONITORING QUADRAT (THE EXACT LOCATION TO BE DETERMINED BY THE ENGINEER ON SITE)

REV.	DESCRIPTION	BY	DATE

**CEDD** 土木工程拓展署  
Civil Engineering and Development Department

LIANGTANG/YUEN WAI BOUNDARY CONTROL POINT AND ASSOCIATED WORKS (SITE FORMATION AND INFRASTRUCTURES) DESIGN AND CONSTRUCTION

**PROPOSED WOODLAND COMPENSATION AREA**

**DRGNO.**

DESIGNED BY BY: KW	CONTRACT NO. FORM: BR	P. Dir. APPROVED AREA: -
DRAWN BY BY: YJP	STATUS REV: -	
SCALE S/R: AT 1 : 2500		
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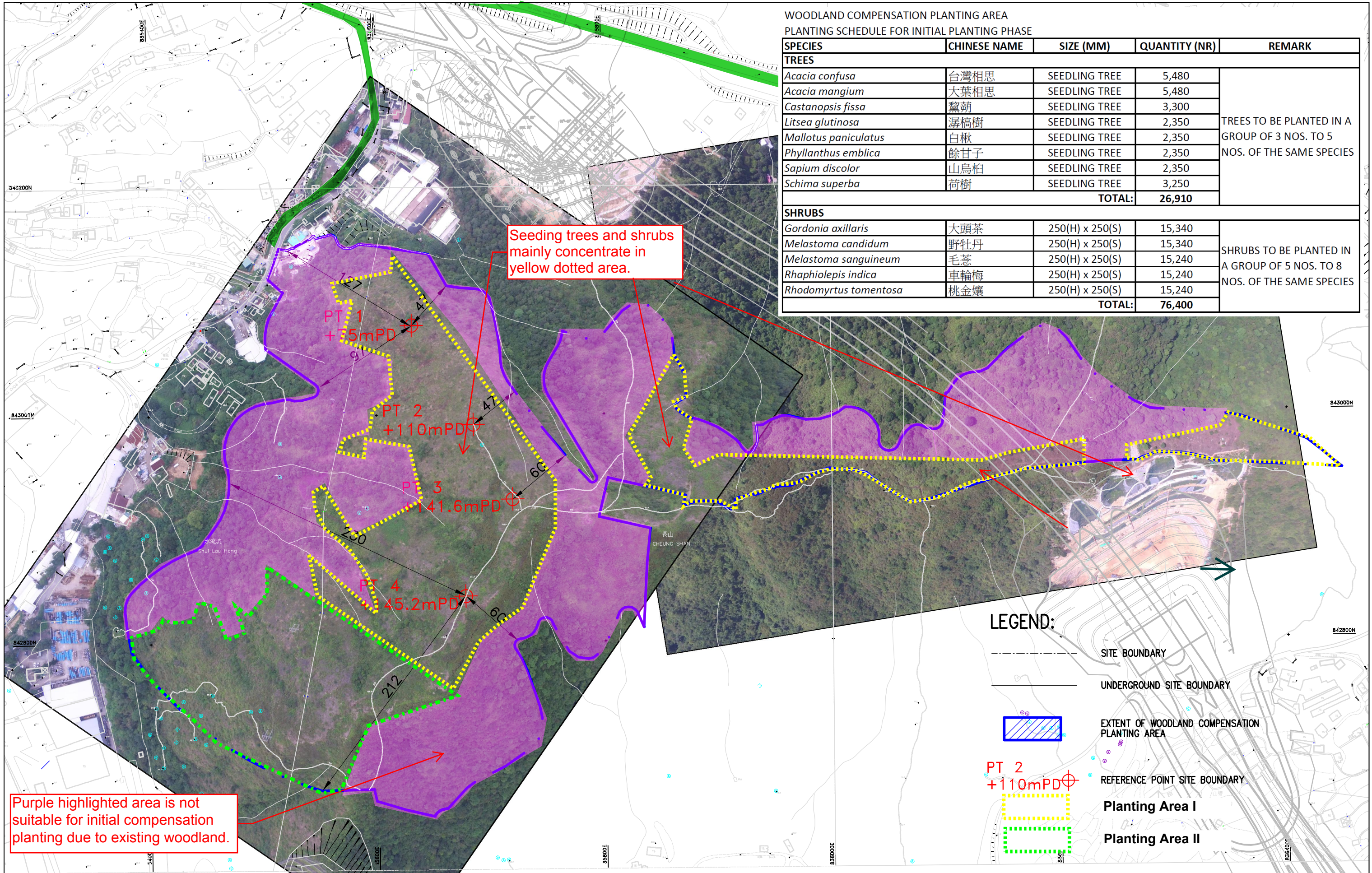
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## **Appendix B**

### **As-built Planting Schedule for Initial Planting Phase**





WOODLAND COMPENSATION PLANTING AREA  
PLANTING SCHEDULE FOR INITIAL PLANTING PHASE

SPECIES	CHINESE NAME	SIZE (MM)	QUANTITY (NR)	REMARK
<b>TREES</b>				
<i>Acacia confusa</i>	台灣相思	SEEDLING TREE	5,480	TREES TO BE PLANTED IN A GROUP OF 3 NOS. TO 5 NOS. OF THE SAME SPECIES
<i>Acacia mangium</i>	大葉相思	SEEDLING TREE	5,480	
<i>Castanopsis fissa</i>	蠟菊	SEEDLING TREE	3,300	
<i>Litsea glutinosa</i>	潺槁樹	SEEDLING TREE	2,350	
<i>Mallotus paniculatus</i>	白楸	SEEDLING TREE	2,350	
<i>Phyllanthus emblica</i>	餘甘子	SEEDLING TREE	2,350	
<i>Sapium discolor</i>	山烏柏	SEEDLING TREE	2,350	
<i>Schima superba</i>	荷樹	SEEDLING TREE	3,250	
			<b>TOTAL:</b>	<b>26,910</b>
<b>SHRUBS</b>				
<i>Gordonia axillaris</i>	大頭茶	250(H) x 250(S)	15,340	SHRUBS TO BE PLANTED IN A GROUP OF 5 NOS. TO 8 NOS. OF THE SAME SPECIES
<i>Melastoma candidum</i>	野牡丹	250(H) x 250(S)	15,340	
<i>Melastoma sanguineum</i>	毛蕊	250(H) x 250(S)	15,240	
<i>Rhaphiolepis indica</i>	車輪梅	250(H) x 250(S)	15,240	
<i>Rhodomyrtus tomentosa</i>	桃金娘	250(H) x 250(S)	15,240	
			<b>TOTAL:</b>	<b>76,400</b>

Purple highlighted area is not suitable for initial compensation planting due to existing woodland.

Seeding trees and shrubs mainly concentrate in yellow dotted area.

LEGEND:

- SITE BOUNDARY
- UNDERGROUND SITE BOUNDARY
- EXTENT OF WOODLAND COMPENSATION PLANTING AREA
- REFERENCE POINT SITE BOUNDARY
- Planting Area I
- Planting Area II

CONTRACT NO. CV/2013/08  
LIANTANG/HEUNG YUEN WAI  
BOUNDARY CONTROL POINT  
SITE FORMATION AND  
INFRASTRUCTURE WORKS  
- CONTRACT 6

APPENDIX B - As-built Planting Schedule for Initial Planting Phase

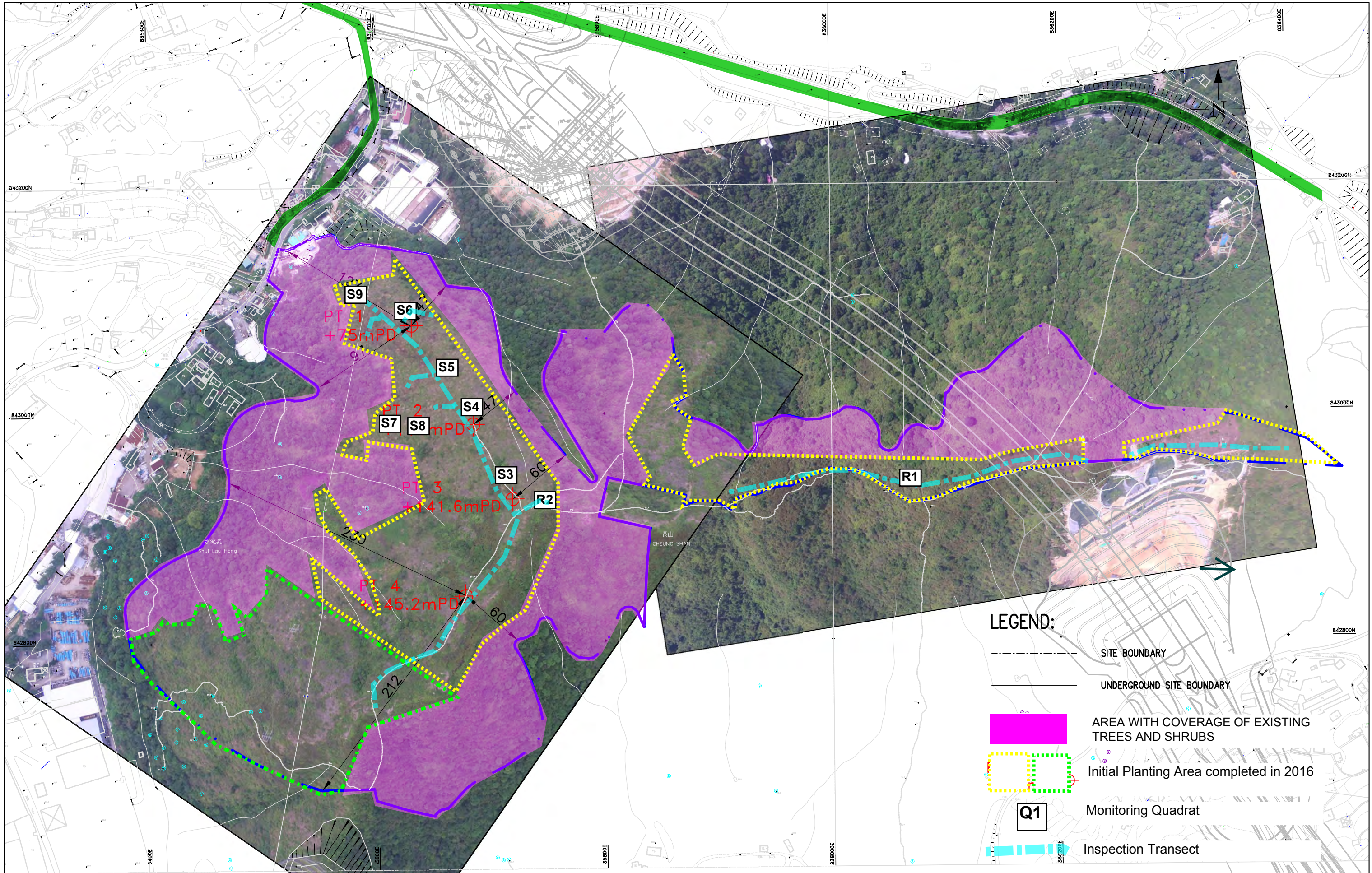
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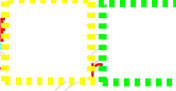


## **Appendix C**

### **Transect Routes and Sampling Quadrats of Woodland Compensation Monitoring**





**LEGEND:**

-  SITE BOUNDARY
-  UNDERGROUND SITE BOUNDARY
-  AREA WITH COVERAGE OF EXISTING TREES AND SHRUBS
-  Initial Planting Area completed in 2016
-  **Q1** Monitoring Quadrat
-  Inspection Transect

**APPENDIX C - LOCATION OF THE THE INSPECTION TRANSECTS AND MONITORING QUADRATS, 2016**

CONTRACT NO. CV/2013/08  
LIANTANG/HEUNG YUEN WAI  
BOUNDARY CONTROL POINT  
SITE FORMATION AND  
INFRASTRUCTURE WORKS  
- CONTRACT 6

SCALE	1:3000(A3)	SURVEY DATE	N/A
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**Appendix D**

**Photographic Records**

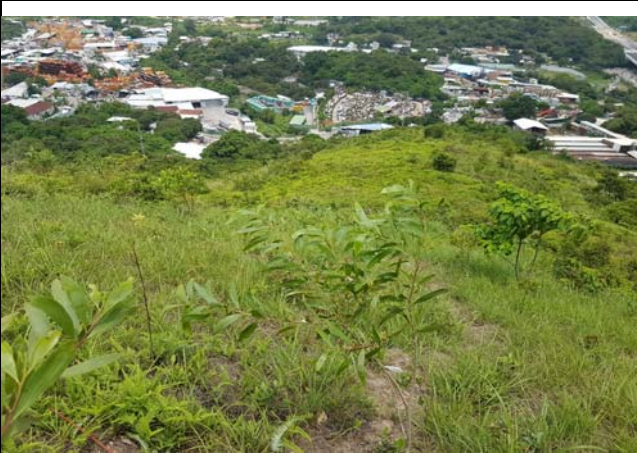
Contract No. CV/2013/08, Woodland Compensation Area - Vegetation Monitoring



R1



R2



S3



S4



S5



S6



S7



S8



S9





Eastern ridgeline of Cheung Shan



Northern Slope of Cheung Shan



Western Ridgeline of Cheung Shan



Replanted *Acacia confusa* seedling



Damaged *Acacia mangium* (1)



Damaged *Acacia mangium* (2)

**Appendix E**

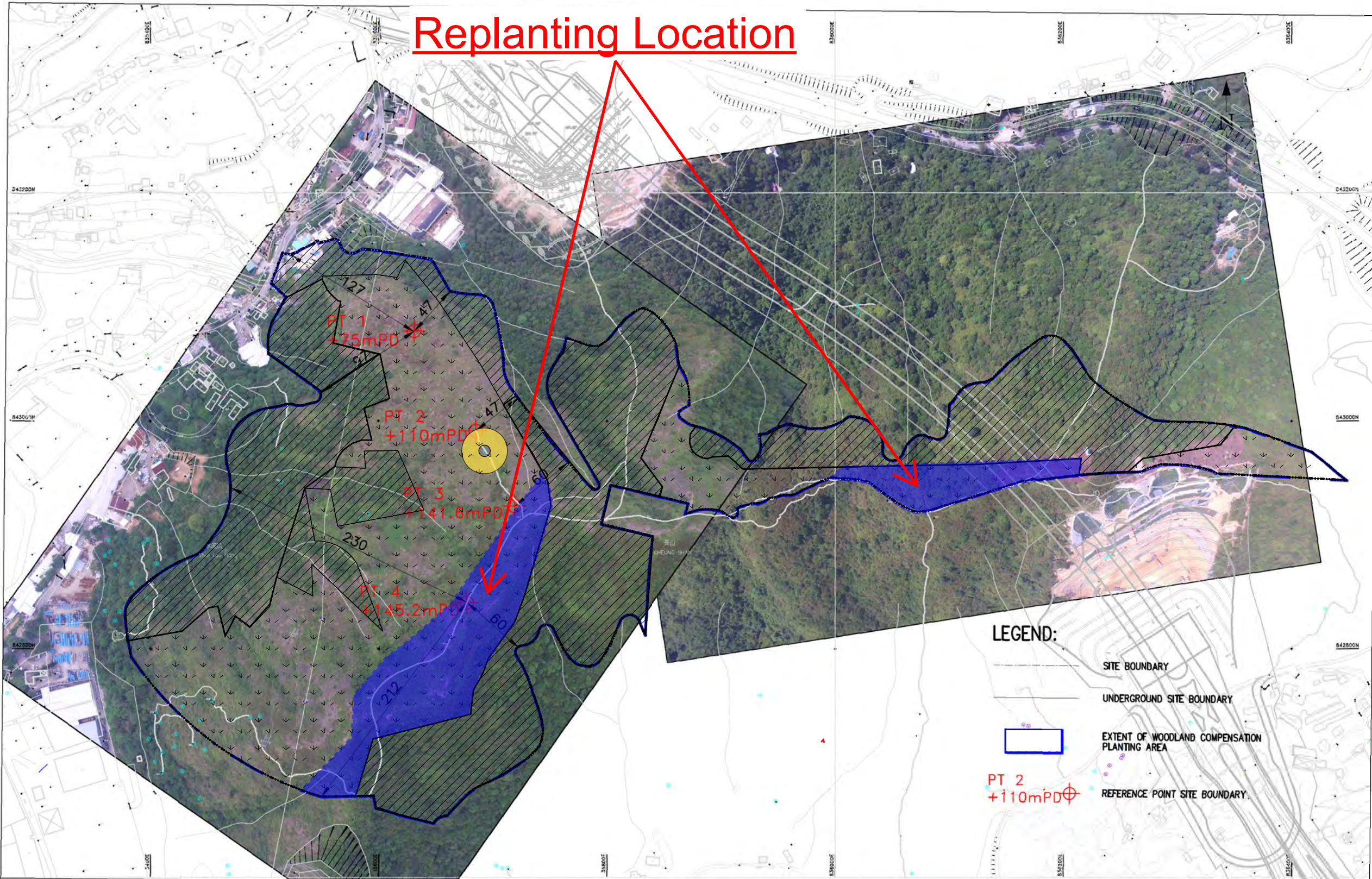
**Replanting Plan**

As-built Replanting Quantity for Initial Planting

Species	Chinese Name	Replanting Quantity		Total Qty.
		Outside Monitoring Quadrats	Within Monitoring Quadrats	
<i>Acacia confusa</i>	台灣相思	2327	49	2376
<i>Castanopsis fissa</i>	蠟莪	0	26	26
<i>Litsea glutinosa</i>	潺槁樹	0	29	29
<i>Sapium discolor</i>	山烏柏	0	17	17
<i>Melastoma candidum</i>	野牡丹	2894	141	3035
<i>Raphiolepis indica</i>	車輪梅	1486	136	1622
<i>Rhodomyrtus tomentosa</i>	桃金娘	1929	288	2217
				9322



# Replanting Location



- LEGEND:**
- BOUNDARY OF WOODLAND COMPENSATION PLANTING AREA
  - AREA WITH COVERAGE OF EXISTING TREES AND SHRUBS
  - AREAS OF HILLSIDE GRASSLAND
  - FIREBREAK

- LEGEND:**
- SITE BOUNDARY
  - UNDERGROUND SITE BOUNDARY
  - EXTENT OF WOODLAND COMPENSATION PLANTING AREA
  - REFERENCE POINT SITE BOUNDARY

REFERENCE:



CEDD CONTRACT NO. CV/2013/08  
LIANTANG/HEUNG YUEN WAI BOUNDARY CONTROL POINT  
SITE FORMATION AND INFRASTRUCTURE WORKS -  
CONTRACT 6

TITLE: As-built Replanting  
Location Plan 2018

SKETCH NO. CCKJV/WCA/SK002 SCALE N.I.S.